

## ANNEX B

### CONSURF COLOR-CODED MSA

[illegible]

Sequence81-P-CG-EA-ABD	M	T	N	E	T	I	-	-	D	Q	T	T	T	P	D	Q	-	-	T	P	N	Q	T	D	F	V	P	Q	R	F	I	N	N	L	Q	V	A	F	I	K	V	D	N	A	V	A	S	F	D	P		
Sequence150-NP-DA-Sen-BC	M	T	N	E	T	I	-	-	N	Q	-	-	-	-	-	Q	-	-	T	P	Q	T	E	A	A	F	N	P	Q	Q	F	I	N	N	L	Q	V	A	F	I	K	V	D	N	A	V	A	S	Y	D	P	
Sequence90-NP-UD-Vit-ABD	M	T	N	E	T	I	-	-	D	Q	T	T	T	P	D	Q	-	-	T	Q	L	N	P	T	D	F	V	P	Q	Q	R	F	I	N	N	L	Q	V	A	F	I	K	V	D	N	A	V	A	S	F	D	P
Sequence136-P-CG-Col-ABCC	M	T	N	E	T	I	-	-	D	Q	-	-	-	-	-	Q	-	-	P	P	Q	T	E	A	A	F	N	P	Q	Q	F	I	N	N	L	Q	V	A	F	I	K	V	D	N	A	V	A	S	F	D	P	
Sequence15-NP-UP-Jp-ABD	M	T	N	E	T	I	-	-	D	R	T	I	T	P	D	Q	-	-	T	P	P	N	Q	T	D	F	V	P	Q	Q	R	F	I	N	N	L	Q	V	A	F	I	K	V	D	N	A	V	A	S	F	D	P
Sequence108-NP-UD-Vit-ABD	M	T	N	E	T	I	-	-	D	Q	T	T	T	P	V	Q	-	-	T	L	N	P	T	E	F	V	P	Q	Q	R	F	I	N	N	L	Q	V	A	F	I	K	V	D	N	A	V	A	S	F	D	P	
Sequence104-P-CG-OCC-ABCC	M	T	N	E	T	I	-	-	D	Q	-	-	-	-	-	P	-	-	P	Q	T	E	A	A	F	N	P	Q	Q	F	I	N	N	L	Q	V	A	F	I	K	V	D	N	A	V	A	S	Y	D	P		
Sequence179-NP-UD-Col-ABCC	M	T	N	E	T	I	-	-	D	Q	-	-	-	-	-	Q	-	-	P	Q	T	E	A	A	F	N	P	Q	Q	F	I	N	N	L	Q	V	A	F	I	K	V	D	N	A	V	A	S	F	D	P		
Sequence37-NP-GA-Jp-ABCCC	M	T	N	E	T	I	-	-	D	Q	-	-	T	P	S	Q	-	-	-	-	-	-	T	A	F	N	P	Q	Q	F	I	N	N	L	Q	V	A	F	I	K	V	D	N	A	V	A	S	F	D	P		
Sequence89-NP-UD-Vit-ABD	M	T	N	E	T	I	-	-	D	Q	T	T	T	P	D	Q	-	-	T	P	N	P	T	D	F	V	P	Q	Q	R	F	I	N	N	L	Q	V	A	F	I	K	V	D	N	A	V	A	S	Y	D	P	
Sequence92-P-CG-Vit-ABD	M	T	N	E	T	I	-	-	D	Q	T	T	T	P	D	Q	-	-	T	L	N	P	T	D	F	V	P	Q	Q	R	F	I	N	N	L	Q	V	A	F	I	K	V	D	N	A	V	A	S	Y	D	P	
Sequence49-NP-GA-Jp-ABC	M	T	N	E	T	I	-	-	D	Q	-	-	-	-	-	-	-	-	T	P	S	Q	T	A	F	N	P	Q	Q	F	I	N	N	L	Q	V	A	F	I	K	V	D	N	A	V	A	S	F	D	P		
Sequence181-P-CG-Col-ABCC	M	T	N	E	T	I	-	-	D	Q	-	-	-	-	-	Q	-	-	P	Q	T	E	A	A	F	N	P	Q	Q	R	F	I	N	N	L	Q	V	A	F	I	K	V	D	N	A	V	A	S	F	D	P	
Sequence25-NP-GA-Jp-ABD	M	T	N	E	T	I	-	-	D	Q	T	T	T	P	D	Q	-	-	T	P	N	Q	T	D	F	V	P	Q	Q	R	F	I	N	N	L	Q	V	A	F	I	K	V	D	N	A	V	A	S	F	D	P	
Sequence4-P-CG-Jp-ABD	M	T	N	E	T	I	-	-	D	Q	T	T	T	P	D	Q	-	-	-	-	-	-	T	G	F	V	P	Q	Q	R	F	I	N	N	L	Q	V	A	F	I	K	V	D	N	A	V	A	S	F	D	P	
Sequence121-NP-G-Jp-ABCC	M	T	N	E	T	I	-	-	D	Q	-	-	-	-	-	Q	-	-	P	Q	T	E	A	A	F	N	P	Q	Q	F	I	N	N	L	Q	V	A	F	I	K	V	D	N	A	V	A	S	F	D	P		
4dvy	M	T	N	E	T	I	-	-	D	Q	T	R	T	P	D	Q	-	-	T	Q	S	Q	T	A	F	D	P	Q	Q	F	I	N	N	L	Q	V	A	F	I	K	V	D	N	V	V	A	S	F	D	P		
Sequence186-NP-UP-Jp-ABD	M	T	N	E	T	I	-	-	D	Q	-	-	-	-	-	-	-	-	T	P	N	Q	T	D	F	V	P	Q	Q	R	F	I	N	N	L	Q	V	A	F	I	K	V	D	N	A	V	A	S	F	D	P	
Sequence62-NP-UD-OCC-ABD	M	S	N	E	T	I	-	-	-	-	-	-	-	-	-	D	Q	-	-	T	P	S	Q	T	A	F	N	P	Q	Q	F	I	N	N	L	Q	V	A	F	I	K	G	D	N	S	V	A	S	F	D	P	
Sequence9-NP-GCA-Jp-ABD	M	T	N	E	T	I	-	-	D	Q	T	T	T	P	D	Q	-	-	T	P	N	Q	T	D	F	V	P	Q	Q	F	I	N	N	L	Q	V	A	F	I	K	V	D	N	A	V	A	S	F	D	P		
Sequence12-NP-UP-Jp-ABD	M	T	N	E	T	I	-	-	D	Q	T	I	T	P	D	Q	-	-	-	-	-	-	T	D	F	V	P	Q	Q	R	F	I	N	N	L	Q	V	A	F	I	K	V	D	N	A	V	A	S	F	D	P	
Sequence35-NP-GA-Jp-ABABD	M	T	N	E	T	I	-	-	D	Q	T	T	T	P	D	Q	-	-	T	P	N	Q	T	D	F	V	P	Q	Q	R	F	I	N	N	L	Q	V	A	F	I	K	V	D	N	A	V	A	S	F	D	P	
Sequence54-NP-GA-OCC-ABC	M	T	N	E	T	I	-	-	-	-	-	-	-	-	-	D	Q	-	-	T	P	S	Q	T	A	F	N	P	Q	Q	F	I	N	N	L	Q	V	A	F	I	K	V	D	N	A	V	A	S	F	D	P	
Sequence109-P-CG-Jp-ABD	M	T	N	E	T	I	-	-	D	Q	T	T	T	P	D	Q	-	-	T	L	N	P	T	D	F	V	P	Q	Q	R	F	I	N	N	L	Q	V	A	F	I	K	V	D	N	A	V	A	S	F	D	P	
Sequence96-NP-UP-Vit-ABD	M	T	N	E	T	I	-	-	D	Q	T	T	T	P	D	Q	-	-	T	L	N	P	T	D	F	V	P	Q	Q	F	I	N	N	L	Q	V	A	F	I	K	V	D	N	A	V	A	S	Y	D	P		
Sequence80-P-CG-EA-ABD	M	T	N	E	T	I	-	-	D	Q	T	T	T	P	D	Q	-	-	T	L	N	Q	T	D	F	V	P	Q	Q	R	F	I	N	N	L	Q	V	A	F	I	K	V	D	N	A	V	A	S	F	D	P	
Sequence82-P-CG-EA-ABD	M	T	N	E	T	I	-	-	D	Q	T	T	T	P	D	Q	-	-	T	L	N	P	T	D	F	V	P	Q	Q	R	F	I	N	N	L	Q	V	A	F	I	K	V	D	N	A	V	A	S	F	D	P	
Sequence10-NP-GCA-Jp-ABD	M	T	N	E	T	I	-	-	N	Q	T	I	T	P	D	Q	-	-	-	-	-	-	T	D	F	V	P	Q	Q	R	F	I	N	N	L	Q	V	A	F	I	K	V	D	N	A	V	A	S	F	D	P	
Sequence19-NP-UP-Jp-ABBD	M	T	N	E	T	I	-	-	E	Q	A	T	T	P	D	Q	-	-	-	-	-	-	T	D	F	V	P	Q	Q	R	F	I	N	N	L	Q	V	A	F	I	E	V	D	N	A	V	A	S	F	D	P	
Sequence115-NP-UG-Jp-ABC	M	T	N	E	T	I	-	-	D	Q	-	-	-	-	-	Q	-	-	P	Q	T	E	A	A	F	N	P	Q	Q	F	I	N	N	L	Q	V	A	F	I	K	V	D	N	A	V	A	S	Y	D	P		
Sequence45-NP-GA-Jp-ABCC	M	T	N	E	T	I	-	-	D	Q	-	-	-	-	-	Q	-	-	P	Q	T	E	V	A	F	N	P	Q	Q	F	I	N	N	L	Q	V	A	F	I	K	V	D	N	A	V	A	S	F	D	P		
Sequence119-NP-UG-Jp-ABC	M	T	N	E	T	I	-	-	D	Q	-	-	-	-	-	Q	-	-	P	Q	T	E	A	A	F	N	P	Q	Q	F	I	N	N	L	Q	V	A	F	I	K	V	D	N	A	V	A	S	Y	D	P		
Sequence70-NP-GA-Ch-ABD	M	T	N	E	T	I	-	-	D	Q	T	T	T	P	N	Q	-	-	-	-	-	-	T	D	F	V	P	Q	Q	R	F	I	N	N	L	Q	V	A	F	I	K	V	D	S	A	V	A	S	F	D	P	
Sequence52-NP-UD-EA-ABD	M	A	N	E	T	I	-	-	D	Q	T	I	T	P	D	Q	-	-	-	-	-	-	T	D	F	V	P	Q	Q	R	F	I	N	N	L	Q	V	A	F	I	K	V	D	N	A	V	A	S	F	D	P	
Sequence97-P-CG-Vit-ABD	M	T	N	E	T	I	-	-	D	Q	T	T	T	P	D	Q	-	-	T	P	N	P	T	D	F	V	P	Q	Q	R	F	I	N	N	L	Q	V	A	F	I	K	V	D	S	A	V	A	S	F	D	P	
Sequence94-NP-UD-Vit-ABD	M	T	N	E	T	I	-	-	D	Q	-	-	-	-	-	Q	-	-	P	Q	T	E	A	A	F	N	P	Q	Q	F	I	N	N	L	Q	V	A	F	I	K	V	D	N	A	V	A	S	Y	D	P		
Sequence176-NP-GA-Col-ABCC	M	T	N	E	T	I	-	-	D	Q	-	-	-	-	-	Q	-	-	P	Q	T	E	A	A	F	N	P	Q	Q	R	F	I	N	N	L	Q	V	A	F	I	K	V	D	N	A	V	A	S	F	D	P	
Sequence68-NP-D-Am-ABBC	M	T	N	E	T	I	-	-	N	Q	-	-	-	-	-	Q	-	-	P	Q	T	E	A	A	F	N	P	Q	Q	F	I	N	N	L	R	A	A	F	I	K	V	D	N	A	V	A	S	Y	D	P		
Sequence47-NP-GA-Jp-ABD	M	T	N	E	T	I	-	-	D	Q	T	T	T	P	D	Q	-	-	T	P	N	Q	T	D	F	V	P	Q	Q	R	F	I	N	N	L	Q	V	A	F	I	K	V	D	N	A	V	A	S	F	D	P	
Sequence56-NP-UD-OCC-ABC	M	T	N	E	T	I	-	-	D	Q	-	-	T	P	S	Q	-	-	-	-	-	-	T	A	F	N	P	Q	Q	F	I	N	N	L	Q	V	A	F	I	K	V	D	N	A	V	A	S	F	D	P		
Sequence31-NP-GA-Jp-ABD	M	T	N	E	T	I	-	-	D	Q	-	-	-	-	-	-	-	-	T	P	N	Q	T	D	F	V	P	Q	Q	R	F	I	N	N	L	Q	V	A	F	I	K	V	G	D	A	V	A	S	F	D	P	
Sequence46-NP-UD-Jp-ABD	M	T	N	E	T	I	-	-	D	Q	T	T	T	P	D	Q	-	-	T	P	N	Q	T	D	F	V	P	Q	Q	R	F	I	N	N	L	Q	V	A	F	I	K	V	D	N	A	V	A	S	F	D	P	
Sequence102-NP-UG-Vit-ABD	M	T	N	E	T	I	-	-	D	Q	T	T	T	P	D	Q	-	-	T	L	N	P	T	D	F	V	P	Q	Q	R	F	I	N	N	L	Q	V	A	F	I	K	V	D	S	A	V	A	L	Y	D	P	
Sequence71-P-CG-EA-ABD	M	T	S	E	T	I	-	-	D	Q	T	T	T	P	D	Q	-	-	-	-	-	-	T	D	F	V	P	Q	Q	R	F	I	N	N	L	Q	V	A	F	I	K	V	D	N	A	V	A	S	F	D	P	
Sequence30-NP-GA-Jp-ABBD	M	T	N	E	T	I	-</																																													

Sequence73-P-CG-EA-ABD  
Sequence183-NP-UD-Col-ABD  
Sequence34-NP-UD-Jp-ABDD  
Sequence21-P-CG-Jp-ABD  
Sequence32-NP-GA-Jp-ABD  
Sequence116-NP-UD-Jp-ABC  
Sequence8-NP-GCA-Jp-ABD  
Sequence83-P-CG-EA-ABD  
Sequence48-NP-UD-OCC-ABC  
Sequence120-NP-G-Jp-ABC  
Sequence187-NP-UG-Jp-ABCCC  
Sequence118-NP-G-Jp-ABD  
Sequence87-NP-UG-Vit-ABD

M	T	N	E	T	I	-	-	D	Q	T	I	T	P	D	Q	-	-	T	P	N	Q	T	D	F	V	P	Q	R	F	I	N	N	L	Q	V	A	F	I	K	V	D	N	A	V	A	S	F	D	P			
M	T	N	E	T	I	-	-	N	Q	-	-	-	-	-	Q	-	-	P	Q	T	E	A	A	F	N	P	Q	R	F	I	N	N	N	L	Q	V	A	F	L	K	L	D	N	A	V	A	S	F	D	P		
M	T	N	E	T	I	-	-	D	Q	-	-	-	-	-	Q	-	-	P	Q	T	E	A	A	F	N	P	Q	Q	R	F	I	N	N	N	L	Q	V	A	F	L	K	L	D	N	A	S	I	T	S	F	D	P
M	T	N	E	T	I	-	-	D	Q	T	T	T	P	D	Q	-	-	-	-	-	-	-	D	F	V	P	Q	Q	R	F	I	N	N	N	L	Q	V	A	F	I	K	V	D	N	A	V	A	S	F	D	P	
M	T	N	E	T	I	-	-	D	Q	T	T	T	P	D	Q	-	-	T	P	N	Q	T	D	F	V	P	Q	R	F	I	N	N	N	L	Q	V	A	F	I	K	V	D	N	A	V	A	S	F	D	P		
M	T	N	E	T	I	-	-	D	Q	-	-	-	-	-	Q	-	-	P	Q	T	E	A	A	F	N	P	Q	Q	F	I	N	N	N	L	Q	V	A	F	L	K	V	D	N	A	V	A	S	Y	D	P		
M	T	N	E	T	I	-	-	D	Q	T	I	T	P	D	Q	-	-	-	-	-	-	T	D	F	V	P	Q	R	F	I	N	N	N	L	Q	V	A	F	I	K	V	D	N	A	V	A	S	F	D	P		
M	T	N	E	T	I	-	-	D	Q	-	-	-	-	-	-	-	-	T	P	S	Q	T	A	F	N	P	Q	Q	F	I	N	N	N	L	Q	V	A	F	L	K	V	D	N	A	V	A	S	Y	D	P		
M	T	N	E	T	I	-	-	D	Q	-	-	-	-	-	Q	-	-	P	Q	T	E	A	A	F	N	P	Q	Q	F	I	N	N	N	L	Q	V	A	F	L	K	L	D	N	A	V	A	S	F	D	P		
M	T	N	E	T	I	-	-	D	Q	-	-	-	-	-	Q	-	-	P	Q	T	E	A	A	F	N	P	Q	Q	F	I	N	N	N	L	Q	V	A	F	L	K	V	D	N	A	V	A	S	Y	D	P		
M	S	N	E	T	I	-	-	D	Q	T	T	T	P	D	Q	-	-	T	P	N	Q	T	D	F	V	P	Q	Q	R	F	I	N	N	N	L	Q	V	A	F	I	K	V	D	N	A	V	A	S	F	D	P	
M	T	N	E	T	I	-	-	D	Q	T	T	T	P	D	Q	-	-	T	L	N	E	T	D	F	V	P	Q	R	F	I	N	N	N	L	Q	A	A	F	L	K	V	D	S	A	V	A	S	F	D	P		

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Sequence140-NP-GA-Col-ABABC  
Sequence123-NP-UD-Jp-ABD  
Sequence111-NP-G-Jp-ABD  
Sequence57-NP-GA-OCC-AB  
Sequence172-P-CG-Col-ABCC  
Sequence110-NP-UD-Jp-ABD  
Sequence95-NP-UD-Vit-ABD  
Sequence107-P-CG-Vit-ABD  
Sequence106-P-CG-Vit-ABD  
Sequence105-NP-UD-Vit-ABD  
Sequence126-NP-UG-Jp-ABC  
Sequence135-P-CG-Col-ABCCC  
Sequence138-NP-GA-Col-ABC  
Sequence13-NP-UP-Jp-ABD  
Sequence11-NP-UP-Jp-ABD  
Sequence50-NP-GA-OCC-ABC  
Sequence26-NP-GA-Jp-ABD  
Sequence55-NP-UD-OCC-ABCCC  
Sequence178-NP-M-Col-ABCC  
Sequence40-NP-GA-Jp-ABD  
Sequence43-NP-GA-Jp-ABD  
Sequence139-NP-UD-Col-ABCC  
Sequence7-P-CG-Jp-ABBD  
Sequence91-P-CG-Vit-ABD  
Sequence29-NP-GA-Jp-ABABD  
Sequence78-P-CG-EA-ABD  
Sequence188-NP-GCA-Jp-AB  
Sequence72-P-CG-EA-ABD  
Sequence79-P-CG-EA-ABD  
Sequence61-NP-UD-OCC-ABC  
Sequence125-NP-UG-Jp-ABCC  
Sequence175-NP-G-Col-ABCC  
Sequence122-NP-G-Jp-ABCC  
Sequence36-NP-GA-Jp-ABD  
Sequence58-NP-UD-OCC-ABC  
Sequence27-NP-GA-Jp-ABBD  
Sequence93-P-CG-Vit-ABD  
Sequence177-NP-M-Col-ABCC  
Sequence182-NP-UD-Col-ABCC  
Sequence114-NP-UG-Jp-ABC  
Sequence74-P-CG-EA-ABD  
Sequence20-P-CG-Jp-ABD  
Sequence14-NP-GCA-Jp-ABD  
Sequence39-NP-GA-Jp-ABC  
Sequence170-NP-UD-Col-ABCC  
Sequence76-P-CG-EA-ABD

D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	D	G	I	S	Q	L	R	E	E	Y	S	N	K	A	I	K	N	P	T	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	D	G	I	S	Q	L	R	E	E	Y	S	N	K	A	I	K	N	P	T	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	S	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	R	S	N
D	Q	K	P	I	V	D	K	N	D	K	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	S	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	K	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	S	N	K	A	I	K	N	P	T	K	R	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	D	E	I	S	Q	L	R	E	E	Y	S	N	K	A	I	K	N	P	T	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	D	G	I	S	Q	L	R	E	E	Y	S	N	K	A	I	K	N	P	T	K	K	N	Q	Y	F	S	D	F	I	N	K	I	N
D	Q	K	P	I	V	D	K	N	D	K	D	N	R	Q	A	F	D	G	I	S	Q	L	R	E	E	Y	S	N	K	A	I	K	N	P	T	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A																			



Sequence53-NP-GA-EA-ABD	D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	T	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N	
Sequence174-P-CG-Col-ABCC	D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	D	G	I	S	Q	L	R	E	E	Y	S	N	K	A	I	K	N	P	T	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N	
Sequence33-NP-UG-Jp-ABD	D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	S	N	K	A	I	K	N	P	T	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N	
Sequence60-NP-GA-EA-ABD	D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	T	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N	
Sequence38-NP-GA-Jp-ABD	D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	T	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N	
Sequence1-NP-EG-Jp-ABCCC	D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	D	G	I	S	Q	L	R	E	E	Y	S	N	K	A	I	K	N	P	T	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N	
Sequence101-P-CG-Vit-ABD	D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	S	N	K	A	I	K	N	P	T	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N	
Sequence64-NP-UD-OCC-ABC	N	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	F	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	S	D	F	I	N	K	S	S
Sequence81-P-CG-EA-ABD	D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	T	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N	
Sequence150-NP-DA-Sen-BC	D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	D	G	I	S	Q	L	R	E	E	Y	S	N	K	A	I	K	N	P	T	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N	
Sequence90-NP-UD-Vit-ABD	D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	S	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N	
Sequence136-P-CG-Col-ABCC	D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	R	I	S	Q	L	R	E	E	Y	S	N	K	A	I	K	N	P	T	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N	
Sequence15-NP-UP-Jp-ABD	N	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	M	E	E	F	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N	
Sequence108-NP-UD-Vit-ABD	D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N	
Sequence104-P-CG-OCC-ABCC	D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	D	G	I	S	Q	L	R	E	E	Y	S	N	K	A	I	K	N	P	T	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N	
Sequence179-NP-UD-Col-ABCC	D	Q	K	P	I	V	D	K	N	D	K	D	N	R	K	A	F	D	G	I	S	Q	L	R	E	E	Y	S	N	K	A	I	K	N	P	T	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N	
Sequence37-NP-GA-Jp-ABCCC	D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	M	E	E	F	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	N	F	I	S	K	S	N	
Sequence89-NP-UD-Vit-ABD	D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	T	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N	
Sequence92-P-CG-Vit-ABD	D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	F	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	T	N	
Sequence49-NP-GA-Jp-ABC	D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	F	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	N	F	I	S	K	S	S	
Sequence181-P-CG-Col-ABCC	D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	D	G	I	S	Q	L	R	E	E	Y	S	N	K	A	I	K	N	P	T	K	K	N	Q	Y	F	S	D	F	I	N	K	I	N	
Sequence25-NP-GA-Jp-ABD	D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N	
Sequence4-P-CG-Jp-ABD	D	Q	K	P	I	V	D	K	N	D	K	D	N	R	Q	A	Y	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N	
Sequence121-NP-G-Jp-ABCC	D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	D	G	I	S	Q	L	R	E	E	Y	S	N	K	A	I	K	N	P	T	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N	
4dvry	D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	D	G	I	S	Q	L	R	E	E	Y	S	N	K	A	I	K	N	P	T	K	K	N	Q	Y	F	S	D	F	I	D	K	S	N	
Sequence186-NP-UP-Jp-ABD	D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	R	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N	
Sequence62-NP-UD-OCC-ABD	D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	N	F	I	S	K	S	S	
Sequence9-NP-GCA-Jp-ABD	D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	M	E	E	Y	A	N	K	A	I	K	N	P	T	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N	
Sequence12-NP-UP-Jp-ABD	D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N	
Sequence35-NP-GA-Jp-ABABD	D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N	
Sequence54-NP-GA-OCC-ABC	D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	F	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	N	F	I	S	K	S	N	
Sequence109-P-CG-Jp-ABD	D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N	
Sequence96-NP-UD-Vit-ABD	D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N	
Sequence80-P-CG-EA-ABD	D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N	
Sequence82-P-CG-EA-ABD	D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N	
Sequence10-NP-GCA-Jp-ABD	D	Q	K	P	I	V	D	K	N	D	R	D	N	R	H	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	T	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N	
Sequence19-NP-UP-Jp-ABBD	D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N	
Sequence115-NP-UG-Jp-ABC	D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	D	G	I	S	Q	L	R	E	E	Y	S	N	K	A	I	K	N	P	T	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N	
Sequence45-NP-GA-Jp-ABCC	D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	D	G	I	S	Q	L	R	E	E	Y	S	N	K	A	I	K	N	P	T	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N	
Sequence119-NP-UG-Jp-ABC	D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	D	G	I	S	Q	L	R	E	E	Y	S	N	K	A	I	K	N	P	T	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N	
Sequence70-NP-GA-Ch-ABD	D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N	
Sequence52-NP-UD-EA-ABD	D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	T	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N	
Sequence97-P-CG-Vit-ABD	D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N	
Sequence94-NP-UD-Vit-ABD	D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N	
Sequence176-NP-GA-Col-ABCC	D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	D	G	I	S	Q	L	R	E	E	Y	S	N	K	A	I	K	N	P	T	K	K	N												



Sequence100-NP-UD-Vit-ABD  
Sequence137-NP-G-Col-ABCC  
Sequence117-NP-G-Jp-ABC  
Sequence171-NP-UD-Col-ABCC  
Sequence180-P-CG-Col-ABC  
Sequence112-P-CG-Jp-ABCC  
Sequence127-NP-UD-Jp-ABC  
Sequence51-NP-GA-OCC-ABC  
Sequence73-P-CG-EA-ABD  
Sequence183-NP-UD-Col-ABD  
Sequence34-NP-UD-Jp-ABDD  
Sequence21-P-CG-Jp-ABD  
Sequence32-NP-GA-Jp-ABD  
Sequence116-NP-UD-Jp-ABC  
Sequence8-NP-GCA-Jp-ABD  
Sequence83-P-CG-EA-ABD  
Sequence48-NP-UD-OCC-ABC  
Sequence120-NP-G-Jp-ABC  
Sequence187-NP-UG-Jp-ABCCC  
Sequence118-NP-G-Jp-ABD  
Sequence87-NP-UG-Vit-ABD

D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	D	G	I	S	Q	L	R	E	E	Y	S	N	K	A	I	K	N	P	T	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	D	G	I	S	Q	L	R	E	E	Y	S	N	K	A	I	K	N	P	T	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	D	G	I	S	Q	L	R	E	E	Y	S	N	K	A	I	K	N	P	T	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	D	G	I	S	Q	L	R	E	E	Y	S	N	K	A	I	K	N	P	T	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	D	G	I	S	Q	L	R	E	E	Y	S	N	K	A	I	K	N	P	T	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	S	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	D	G	I	S	Q	L	R	E	E	Y	S	N	K	A	I	K	N	P	T	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	D	E	I	S	Q	L	R	E	E	Y	S	N	K	A	I	K	N	P	T	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	D	G	I	S	Q	L	R	E	E	Y	S	N	K	A	I	K	N	P	T	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	T	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	T	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	F	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	S	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	K	A	F	N	G	I	S	Q	L	R	E	E	Y	S	N	K	A	I	K	N	P	T	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	D	G	I	S	Q	L	R	E	E	Y	S	N	K	A	I	K	N	P	T	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N
D	Q	K	P	I	V	D	K	N	D	R	D	N	R	Q	A	F	E	K	I	S	Q	L	R	E	E	Y	A	N	K	A	I	K	N	P	A	K	K	N	Q	Y	F	S	D	F	I	N	K	S	N

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Sequence140-NP-GA-Col-ABABC  
Sequence123-NP-UD-Jp-ABD  
Sequence111-NP-G-Jp-ABD  
Sequence57-NP-GA-OCC-AB  
Sequence172-P-CG-Col-ABCC  
Sequence110-NP-UD-Jp-ABD  
Sequence95-NP-UD-Vit-ABD  
Sequence107-P-CG-Vit-ABD  
Sequence106-P-CG-Vit-ABD  
Sequence105-NP-UD-Vit-ABD  
Sequence126-NP-UG-Jp-ABC  
Sequence135-P-CG-Col-ABCCC  
Sequence138-NP-GA-Col-ABC  
Sequence13-NP-UP-Jp-ABD  
Sequence11-NP-UP-Jp-ABD  
Sequence50-NP-GA-OCC-ABC  
Sequence26-NP-GA-Jp-ABD  
Sequence55-NP-UD-OCC-ABCCC  
Sequence178-NP-M-Col-ABCC  
Sequence40-NP-GA-Jp-ABD  
Sequence43-NP-GA-Jp-ABD  
Sequence139-NP-UD-Col-ABCC  
Sequence7-P-CG-Jp-ABBD  
Sequence91-P-CG-Vit-ABD  
Sequence29-NP-GA-Jp-ABABD  
Sequence78-P-CG-EA-ABD  
Sequence188-NP-UG-Jp-AB  
Sequence72-P-CG-EA-ABD  
Sequence79-P-CG-EA-ABD  
Sequence61-NP-UD-OCC-ABC  
Sequence125-NP-UG-Jp-ABCC  
Sequence175-NP-G-Col-ABCC  
Sequence122-NP-G-Jp-ABCC  
Sequence36-NP-GA-Jp-ABD  
Sequence58-NP-UD-OCC-ABC  
Sequence27-NP-GA-Jp-ABBD  
Sequence93-P-CG-Vit-ABD  
Sequence177-NP-M-Col-ABCC

D	L	I	N	K	D	A	L	I	D	V	E	S	S	T	K	S	F	Q	K	F	G	D	Q	R	Y	-	R	I	F	T	S	W	V	S	H	Q	N	D	P	S	K	I	N	T	R	S	I	R	N
D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	D	S	F	K	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	R	N
D	L	I	N	K	D	S	L	I	D	T	G	S	S	I	K	S	F	Q	K	F	G	T	Q	R	Y	-	Q	I	F	M	N	W	V	S	H	Q	K	D	P	S	K	I	N	T	Q	Q	I	R	S
D	L	I	N	K	D	N	L	I	D	V	E	S	S	T	K	S	F	Q	K	F	G	D	Q	R	Y	-	R	I	F	T	S	W	V	S	H	Q	N	D	P	S	K	I	N	T	R	S	I	R	N
D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	D	S	F	K	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	R	N
D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	D	S	F	K	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	Q	I	N	T	R	Q	I	Q	N
D	L	I	N	K	D	A	L	I	A	V	N	S	S	V	D	S	F	K	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	R	S	I	R	N
D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	D	S	F	K	K	F	G	D	Q	R	Y	-	Q	M	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	R	N
A	L	I	N	K	D	A	L	I	D	V	E	S	S	T	K	S	F	Q	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	H	Q	N	D	P	S	K	I	N	T	R	S	I	R	N
D	L	I	N	K	D	N	L	I	D	V	E	S	S	T	K	S	F	Q	K	F	G	D	Q	R	Y	-	R	I	F	T	S	W	V	S	H	Q	N	D	P	S	K	I	N	T	R	S	I	R	N
D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	E	S	F	R	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	R	N
D	L	I	N	K	D	S	L	I	D	T	G	S	S	I	K	S	F	R	K	F	G	T	Q	R	Y	-	Q	I	F	M	N	W	V	S	H	Q	K	D	P	S	K	I	N	T	Q	R	I	R	S
D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	E	S	F	R	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	Q	N
D	L	I	N	K	D	S	L	I	D	T	G	S	S	I	K	S	F	Q	K	F	G	T	Q	R	Y	-	Q	I	F	M	N	W	V	S	H	Q	N	D	P	S	K	I	N	T	Q	R	I	R	S
D	L	I	N	K	D	A	L	I	D	V	E	S	S	T	K	S	F	Q	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	H	Q	N	D	P	S	K	I	N	T	R	S	I	R	N
D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	E	S	F	R	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	R	Y
D	L	I	N	K	D	A	L	I	D	V	E	S	S	T	K	S	F	Q	K	F	G	D	Q	R	Y	-	R	I	F	T	S	W	V	S	H	Q	N	D	P	S	K	I	N	T	R	S	I	R	N
D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	E	S	F	R	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	R	N
D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	E	S	F	R	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	R	N
D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	E	S	F	R	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	K	Q	I	Q	N
D	L	I	N	K	D	N	L	I	D	V	E	S	S	T	K	S	F	Q	K	F	G	D	Q	R	Y	-	R	I	F	T	S	W	V	S	H	Q	N	D	P	S	K	I	N	T	R	S	I	R	N
D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	E	S	F	Q	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	R	D
D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	E	S	F	R	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	R	N
D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	E	S	F	R	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	K	Q	I	Q	N
D	L	I	N	K	D	N	L	I	D	V	E	S	S	T	K	S	F	Q	K	F	G	D	Q	R	Y	-	R	I	F	T	S	W	V	S	H	Q	N	D	P	S	K	I	N	T	R	S	I	R	N
D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	E	S	F	Q	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	R	D
D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	E	S	F	R	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	R	D
D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	E	S	F	R	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	R	I	R	D
D	L	I	N	K	D	A	L	I	D	V	E	S	S	T	K	S	F	Q	K	F	G	D	Q	R	Y	-	R	I	F	T	S	W	V	S	H	Q	N	D	P	S	K	I	N	T	R	S	I	R	N
D	L	I	N	K	D	N	L	I	D	V	E	S	S	T	K	S	F	Q	K	F	G	D	Q	R	Y	-	R	I	F	T	S	W	V	S	H	Q	N	D	P	S	K	I	N	T	R	S	I	R	N
D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	E	S	F	Q	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	R	S
D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	E	S	F	R	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	R	N
D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	E	S	F	R	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	R	N
D	L	I	N	K	D	A	L	I	D	V	E	S	S	T	K	S	F	Q	K	F	G	D	Q	R	Y	-	R	I	F	T	S	W	V	S	H	Q	N	D	P	S	K	I	N	T	R	S	I	R	N

Sequence182-NP-UD-Col-ABCC	D	L	I	N	K	D	N	L	I	D	V	E	S	S	T	E	S	F	R	K	F	G	D	Q	R	Y	-	R	I	F	T	S	W	V	S	H	Q	N	D	P	S	K	I	N	T	R	S	I	R	N	
Sequence114-NP-UG-Jp-ABC	D	L	I	N	K	D	N	L	I	D	V	E	S	S	T	K	S	F	Q	K	F	G	D	Q	R	Y	-	R	I	F	T	S	W	V	S	H	Q	N	D	P	S	K	I	N	T	R	S	I	R	N	
Sequence74-P-CG-EA-ABD	D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	E	S	F	R	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	Q	N	
Sequence20-P-CG-Jp-ABD	D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	E	S	F	R	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	Q	N	
Sequence14-NP-GCA-Jp-ABD	D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	E	S	F	R	K	F	G	D	Q	R	Y	-	L	N	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	Q	N	
Sequence39-NP-GA-Jp-ABC	E	L	I	N	K	D	N	L	I	D	V	E	S	S	T	K	S	F	Q	K	F	G	D	Q	R	Y	-	R	I	F	T	S	W	V	S	H	Q	N	D	P	S	K	I	N	T	R	S	I	R	N	
Sequence170-NP-UD-Col-ABCC	D	L	I	N	K	D	N	L	I	D	V	E	S	S	T	K	S	F	Q	K	F	G	D	Q	R	Y	-	R	I	F	T	S	W	V	S	H	Q	N	D	P	S	K	I	N	T	R	S	I	R	N	
Sequence76-P-CG-EA-ABD	D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	E	S	F	Q	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	Q	N	
Sequence53-NP-GA-EA-ABD	D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	E	S	F	R	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	R	N	
Sequence174-P-CG-Col-ABCC	D	L	I	N	K	D	N	L	I	D	V	E	S	S	T	K	S	F	Q	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	H	Q	N	D	P	S	K	I	N	T	R	S	T	R	N	
Sequence33-NP-UG-Jp-ABD	D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	E	S	F	Q	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	N	D	P	S	K	I	N	T	R	S	I	R	N	
Sequence60-NP-GA-EA-ABD	D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	E	S	F	R	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	Q	Y	
Sequence38-NP-GA-Jp-ABD	D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	E	S	F	R	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	R	N	
Sequence1-NP-EG-Jp-ABCCC	D	L	I	N	K	D	N	L	I	D	I	G	S	S	I	K	S	F	Q	K	F	G	T	Q	R	Y	-	R	I	F	T	S	W	V	S	H	Q	N	D	P	S	K	I	N	T	R	S	I	R	N	
Sequence101-P-CG-Vit-ABD	D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	D	S	F	K	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	R	N	
Sequence64-NP-UD-OCC-ABC	D	L	I	N	K	D	T	L	I	D	T	G	S	S	I	K	S	F	Q	K	F	G	T	Q	R	Y	-	Q	I	F	M	N	W	V	S	H	Q	K	D	P	S	K	I	N	T	Q	Q	I	R	S	
Sequence81-P-CG-EA-ABD	D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	E	S	F	R	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	D	T	Q	Q	I	R	N	
Sequence150-NP-DA-Sen-BC	D	L	I	N	K	D	A	L	I	D	V	E	S	S	T	K	S	F	Q	K	F	G	D	Q	R	Y	-	R	I	F	T	S	W	V	S	H	Q	N	D	P	S	K	I	N	T	R	S	I	R	N	
Sequence90-NP-UD-Vit-ABD	D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	E	S	F	K	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	Q	N	
Sequence136-P-CG-Col-AAACC	D	L	I	N	K	D	A	L	I	D	V	E	S	S	T	K	S	F	Q	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	H	Q	N	D	P	S	K	I	N	T	R	S	I	R	N	
Sequence15-NP-UP-Jp-ABD	D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	E	S	F	R	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	I	Q	Q	I	R	N
Sequence108-NP-UD-Vit-ABD	D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	D	S	F	K	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	R	N	
Sequence104-P-CG-OCC-ABCC	D	L	I	N	K	D	A	L	I	D	V	E	S	S	T	K	S	F	Q	K	F	G	D	Q	R	Y	-	R	I	F	T	S	W	V	S	H	Q	N	D	P	S	K	I	N	T	R	S	I	R	N	
Sequence179-NP-UD-Col-ABCC	N	L	I	N	K	D	A	L	I	D	V	E	S	S	T	K	S	F	Q	K	F	G	D	Q	R	Y	-	R	I	F	T	S	W	V	S	H	Q	N	D	P	S	K	I	N	T	R	S	I	R	N	
Sequence37-NP-GA-Jp-ABCCC	D	L	I	N	K	D	S	L	I	D	I	G	S	S	T	K	S	F	Q	K	F	G	T	Q	R	Y	-	Q	I	F	M	N	W	V	S	H	Q	K	D	P	S	K	I	N	T	Q	Q	I	R	S	
Sequence89-NP-UD-Vit-ABD	D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	D	S	F	K	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	R	N	
Sequence92-P-CG-Vit-ABD	D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	D	S	F	K	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	E	I	N	T	E	Q	I	R	N	
Sequence49-NP-GA-Jp-ABC	D	L	I	N	K	D	S	L	I	D	T	G	S	S	I	K	S	F	Q	K	F	G	T	Q	R	Y	-	Q	I	F	M	N	W	V	S	H	Q	K	D	P	S	K	I	N	T	Q	R	I	R	S	
Sequence181-P-CG-EA-ABCC	D	L	I	N	K	D	N	L	I	D	V	E	S	S	T	K	S	F	Q	K	F	G	D	Q	R	Y	-	Q	I	F	I	S	W	V	S	H	Q	N	D	P	S	K	I	N	T	R	S	I	R	N	
Sequence25-NP-GA-Jp-ABD	D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	E	S	F	R	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	Q	D	
Sequence4-P-CG-Jp-ABD	D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	E	S	F	R	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	R	N	
Sequence121-NP-G-Jp-ABCC	D	L	I	N	K	D	N	L	I	D	V	E	S	S	T	K	S	F	Q	K	F	G	D	Q	R	Y	-	R	I	F	T	S	W	V	S	H	Q	S	D	P	S	K	I	N	T	R	S	I	R	N	
4dvy	D	L	I	N	K	D	N	L	I	D	V	E	S	S	T	K	S	F	Q	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	M	Q	K	D	P	S	K	I	N	T	R	S	I	R	N	
Sequence186-NP-UP-Jp-ABD	D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	E	S	F	R	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	R	N	
Sequence62-NP-UD-OCC-ABD	D	L	I	N	K	D	S	L	I	D	T	G	S	S	I	K	S	F	Q	K	F	G	T	Q	R	Y	-	Q	I	F	M	N	W	V	S	H	Q	K	D	P	S	K	I	N	T	Q	Q	I	R	S	
Sequence9-NP-GCA-Jp-ABD	D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	E	S	F	R	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	R	N	
Sequence12-NP-UP-Jp-ABD	D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	E	S	F	R	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	R	N	
Sequence35-NP-GA-Jp-ABABD	D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	E	S	F	R	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	R	N	
Sequence54-NP-GA-OCC-ABC	D	L	I	N	K	D	S	L	I	D	I	G	S	S	T	K	S	F	Q	K	F	G	T	Q	R	Y	-	Q	I	F	M	D	W	V	S	H	Q	K	D	P	S	K	I	N	T	Q	Q	I	R	S	
Sequence109-P-CG-Jp-ABD	D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	D	S	F	K	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	R	N	
Sequence96-NP-UD-Vit-ABD	D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	D	S	F	K	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	Q	N	
Sequence80-P-CG-EA-ABD	D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	E	S	F	R	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	R	D	
Sequence82-P-CG-EA-ABD	D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	D	S	F	K	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	R	N	
Sequence10-NP-GCA-Jp-ABD	D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	E	S	F	R	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	R	N	
Sequence19-NP-UP-Jp-ABBD	D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	E	S	F	G	K	F	G	D	Q	R	Y	-																								

Sequence28-NP-GA-Jp-ABD  
Sequence98-P-CG-Vit-AD  
Sequence99-P-CG-Vit-ABD  
Sequence24-NP-UD-USA-ABD  
Sequence124-NP-G-Jp-ABC  
Sequence77-P-CG-OCC-ABCC  
Sequence113-NP-UG-Jp-ABC  
Sequence88-NP-UD-Vit-ABD  
Sequence100-NP-UD-Vit-ABD  
Sequence137-NP-G-Col-ABCC  
Sequence117-NP-G-Jp-ABC  
Sequence171-NP-UD-Col-ABCC  
Sequence180-P-CG-Col-ABC  
Sequence112-P-CG-Jp-ABCC  
Sequence127-NP-UD-Jp-ABC  
Sequence51-NP-GA-OCC-ABC  
Sequence73-P-CG-EA-ABD  
Sequence183-NP-UD-Col-ABD  
Sequence34-NP-UD-Jp-ABDD  
Sequence21-P-CG-Jp-ABD  
Sequence32-NP-GA-Jp-ABD  
Sequence116-NP-UD-Jp-ABC  
Sequence8-NP-GCA-Jp-ABD  
Sequence83-P-CG-EA-ABD  
Sequence48-NP-UD-OCC-ABC  
Sequence120-NP-G-Jp-ABC  
Sequence187-NP-UG-Jp-ABCCC  
Sequence118-NP-G-Jp-ABD  
Sequence87-NP-UG-Vit-ABD

D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	E	S	F	R	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	R	N	
D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	D	S	F	K	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	T	I	R	N	
D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	D	S	F	K	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	R	N	
D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	E	S	F	R	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	R	N	
D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	E	S	F	R	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	K	I	R	D	
D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	D	S	F	K	K	F	G	D	Q	R	Y	-	R	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	R	S	I	R	N	
D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	D	S	F	K	K	F	G	D	T	A	L	P	-	N	P	L	R	V	G	C	P	F	K	K	I	R	L	K	S	T	P	K	Q	Y	R	N
D	L	I	N	K	D	N	L	I	A	V	N	S	S	V	D	S	F	K	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	R	N	
D	L	I	N	K	D	N	L	I	D	V	E	S	S	T	K	S	F	Q	K	F	G	D	Q	R	Y	-	R	I	F	T	S	W	V	S	H	Q	N	D	P	S	K	I	N	T	R	S	I	R	N	
D	L	I	N	K	D	A	L	I	D	V	E	S	S	T	K	S	F	Q	K	F	G	D	Q	R	Y	-	R	I	F	T	S	W	V	S	H	Q	N	D	P	S	K	I	N	T	R	S	I	R	N	
D	L	I	N	K	D	N	L	I	D	V	E	S	S	T	K	S	F	Q	K	F	G	D	Q	R	Y	-	R	I	F	T	S	W	V	S	H	Q	N	D	P	S	K	I	N	T	R	S	I	R	N	
D	L	I	N	K	D	N	L	I	D	V	E	S	S	T	E	S	F	R	K	F	G	D	Q	R	Y	-	R	I	F	T	S	W	V	S	H	Q	N	D	P	S	K	I	N	T	R	S	I	R	N	
D	L	I	N	K	D	A	L	I	D	V	E	S	S	T	K	S	F	Q	K	F	G	D	Q	R	Y	-	R	I	F	T	S	W	V	S	H	Q	N	D	P	S	K	I	N	T	R	S	I	R	N	
D	L	I	N	K	D	S	L	I	D	T	G	S	S	I	K	S	F	Q	K	F	G	T	Q	R	Y	-	Q	I	F	M	N	W	V	S	H	Q	K	D	P	S	K	I	N	T	Q	R	I	R	S	
D	L	I	N	K	D	A	L	I	D	V	E	S	S	T	K	S	F	Q	K	F	G	D	Q	R	Y	-	R	I	F	T	S	W	V	S	H	Q	N	D	P	S	K	I	N	T	R	S	T	R	N	
N	D	L	I	N	K	D	A	L	I	D	V	E	S	S	V	E	S	F	R	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	Q	N
D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	E	S	F	R	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	R	N	
D	L	I	N	K	D	A	L	I	D	V	E	S	S	T	K	S	F	Q	K	F	G	N	Q	R	Y	-	R	I	F	T	T	W	V	S	H	Q	N	D	P	S	K	I	N	T	R	S	I	R	N	
D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	E	S	F	R	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	R	N	
D	L	I	N	K	D	S	L	I	D	T	G	S	S	I	K	S	F	Q	K	F	G	T	Q	R	Y	-	Q	I	F	M	N	W	V	S	H	Q	K	D	P	S	K	I	N	T	Q	R	I	R	S	
D	L	I	N	K	D	N	L	I	D	V	E	S	S	T	K	S	F	Q	K	F	G	D	Q	R	Y	-	R	I	F	T	S	W	V	S	H	Q	N	D	P	S	K	I	N	T	R	S	I	R	N	
D	L	I	N	K	D	N	L	I	D	I	G	S	S	I	K	S	F	Q	K	F	G	T	Q	R	Y	-	R	I	F	T	S	W	V	S	H	Q	N	D	P	S	K	I	N	T	R	S	I	R	N	
D	L	I	N	K	D	N	L	I	A	V	D	S	S	V	E	S	F	K	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	R	N	
D	L	I	N	K	D	N	L	I	D	V	N	S	S	V	G	S	F	K	K	F	G	D	Q	R	Y	-	Q	I	F	T	S	W	V	S	L	Q	K	D	P	S	K	I	N	T	Q	Q	I	R	N	

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Sequence140-NP-GA-Col-ABABC  
Sequence123-NP-UD-Jp-ABD  
Sequence111-NP-G-Jp-ABD  
Sequence57-NP-GA-OCC-AB  
Sequence172-P-CG-Col-ABCC  
Sequence110-NP-UD-Jp-ABD  
Sequence95-NP-UD-Vit-ABD  
Sequence107-P-CG-Vit-ABD  
Sequence106-P-CG-Vit-ABD  
Sequence105-NP-UD-Vit-ABD  
Sequence126-NP-UG-Jp-ABC  
Sequence135-P-CG-Col-ABCCC  
Sequence138-NP-GA-Col-ABC  
Sequence13-NP-UP-Jp-ABD  
Sequence11-NP-UP-Jp-ABD  
Sequence50-NP-GA-OCC-ABC  
Sequence26-NP-GA-Jp-ABD  
Sequence55-NP-UD-OCC-ABCCC  
Sequence178-NP-M-Col-ABCC  
Sequence40-NP-GA-Jp-ABD  
Sequence43-NP-GA-Jp-ABD  
Sequence139-NP-UD-Col-ABCC  
Sequence7-P-CG-Jp-ABBD  
Sequence91-P-CG-Vit-ABD  
Sequence29-NP-GA-Jp-ABABD  
Sequence78-P-CG-EA-ABD  
Sequence188-NP-GCA-Jp-AB  
Sequence72-P-CG-EA-ABD  
Sequence79-P-CG-EA-ABD  
Sequence61-NP-UD-OCC-ABC

F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	K	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	T	D	Q	K	F	M	G	V	-	F	D	E	S	
F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	I	G	N	Q	I	R	S	D	Q	K	F	M	G	V	-	F	D	E	S
F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	A	F	A	G	I	I	I	I	G	N	Q	I	R	S	D	Q	K	F	M	G	V	-	F	D	E	S
F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	K	S	A	K	Q	S	F	A	G	I	I	I	I	G	N	Q	I	R	T	D	Q	K	F	M	G	V	-	F	D	E	S
F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	I	G	N	Q	I	R	S	D	Q	K	F	M	G	V	-	F	D	E	S
F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	I	G	N	Q	I	Q	S	D	Q	K	F	M	G	V	-	F	D	E	P
F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	N	S	R	V	F	E	I	C	Q	T	I	F	C	R	N	H	Y	R	E	S	N	P	N	G	S	K	V	H	G	S	Y	F	T	E	S	
F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	I	G	N	Q	I	R	S	D	Q	K	F	M	G	V	-	F	D	E	S
F	M	E	N	I	I	Q	P	P	I	P	D	D	K	E	K	A	E	F	L	K	S	A	K	Q	S	F	A	G	I	I	I	I	G	N	Q	I	R	T	D	Q	K	F	M	G	V	-	F	D	E	S
F	M	E	N	I	I	Q	P	P	I	P	D	D	K	E	K	A	E	F	L	K	S	A	K	Q	S	F	A	G	I	I	I	I	G	N	Q	I	R	T	D	Q	K	F	M	G	V	-	F	D	E	S
F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	I	G	N	Q	I	R	S	D	E	K	F	M	G	V	-	F	D	E	S
F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	A	F	A	G	I	I	I	I	G	N	Q	I	Q	S	D	Q	K	F	M	G	V	-	F	E	E	S
F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	I	G	N	Q	I	R	S	D	Q	K	F	M	G	V	-	F	D	E	F
F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	A	F	A	G	I	I	I	I	G	N	Q	I	Q	S	D	Q	K	F	M	G	V	-	F	E	E	S
F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	I	G	N	Q	I	R	T	D	Q	K	F	M	G	V	-	F	D	E	S
F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	I	G	N	Q	I	R	S	D	E	K	F	M	G	V	-	F	D	E	S
F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	I	G	N	Q	I	Q	S	D	Q	K	F	M	G	V	-	F	E	E	S
F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	I	G	N	Q	I	R	S	D	E	K	F	M	G	V	-	F	D	E	S
F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	I	G	N	Q	I	R	T	D	Q	K	F	M	G	V	-	F	D	E	S
F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	I	G	N	Q	I	Q	S	D	Q	K	F	M	G	V	-	F	E	E	S
F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	I	G	N	Q	I	R	S	D	E	K	F	M	G	V	-	F	D	E	S
F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	I	G	N	Q	I	R	S	D	E	K	F	M	G	V	-	F	D	E	S
F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	I	G	N	Q	I	R	S	D	E	K	F	M	G	V	-	F	D	E	S



Sequence125-NP-UG-Jp-ABCC	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	K	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	T	D	Q	K	F	M	G	V	-	F	D	E	S	
Sequence175-NP-G-Col-ABCC	F	M	E	N	I	I	Q	P	P	I	P	D	D	K	E	K	A	E	F	L	K	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	T	D	Q	K	F	M	G	V	-	F	D	E	S	
Sequence122-NP-G-Jp-ABCC	F	M	E	N	I	I	Q	P	P	I	P	D	D	K	E	K	A	E	F	L	K	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	T	D	Q	K	F	M	G	V	-	F	D	E	S	
Sequence36-NP-GA-Jp-ABD	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	T	D	E	K	F	M	G	V	-	F	D	E	S	
Sequence58-NP-UD-OCC-ABC	F	M	E	N	I	I	Q	P	P	I	F	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	A	F	A	G	I	I	I	G	N	Q	I	Q	S	D	Q	K	F	M	G	V	-	F	E	D	E	S
Sequence27-NP-GA-Jp-ABBD	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	S	D	E	K	F	M	G	V	-	F	D	E	S	
Sequence93-P-CG-Vit-ABD	F	M	E	N	V	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	S	D	E	K	F	M	G	V	-	F	D	E	S	
Sequence177-NP-M-Col-ABCC	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	K	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	T	D	Q	K	F	M	G	V	-	F	D	E	S	
Sequence182-NP-UD-Col-ABCC	F	M	E	H	T	I	Q	P	P	I	P	D	D	K	E	K	A	E	F	L	K	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	T	D	Q	K	F	M	G	V	-	F	D	E	S	
Sequence114-NP-UG-Jp-ABC	F	M	E	N	I	I	Q	P	P	I	P	D	D	K	E	K	A	E	F	L	K	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	T	D	Q	K	F	M	G	V	-	F	D	E	S	
Sequence74-P-CG-EA-ABD	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	S	D	Q	K	F	M	G	V	-	F	D	E	S	
Sequence20-P-CG-Jp-ABD	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	S	D	E	K	F	M	G	V	-	F	D	E	S	
Sequence14-NP-GCA-Jp-ABD	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	S	D	E	K	F	M	G	V	-	F	D	E	S	
Sequence39-NP-GA-Jp-ABC	F	M	E	H	T	I	Q	P	P	I	P	D	D	K	E	K	A	E	F	L	K	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	T	D	Q	K	F	M	G	V	-	F	D	E	S	
Sequence170-NP-UD-Col-ABCC	F	M	E	H	T	I	Q	P	P	I	P	D	D	K	E	K	A	E	F	L	K	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	T	D	Q	K	F	M	G	V	-	F	D	E	S	
Sequence76-P-CG-EA-ABD	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	S	D	E	K	F	M	G	V	-	F	D	E	S	
Sequence53-NP-GA-EA-ABD	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	S	D	E	K	F	M	G	V	-	F	D	E	S	
Sequence174-P-CG-Col-ABCC	F	M	E	H	T	I	Q	P	P	I	P	D	D	K	E	K	A	E	F	L	K	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	T	D	Q	K	F	M	G	V	-	F	D	E	S	
Sequence33-NP-UG-Jp-ABD	F	M	E	H	T	I	Q	P	P	I	P	D	D	K	E	K	A	E	F	L	K	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	T	D	Q	K	F	M	G	V	-	F	D	E	S	
Sequence60-NP-GA-EA-ABD	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	S	D	E	K	F	M	D	V	-	F	D	E	S	
Sequence38-NP-GA-Jp-ABD	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	S	D	E	K	F	M	G	V	-	F	D	E	F	
Sequence1-NP-EG-Jp-ABCCC	F	M	E	N	I	I	Q	P	P	T	P	D	D	K	E	R	A	E	F	V	K	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	T	D	Q	K	F	M	G	V	-	F	D	E	F	
Sequence101-P-CG-Vit-ABD	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	S	D	Q	K	F	M	G	V	-	F	D	E	S	
Sequence64-NP-UD-OCC-ABC	F	I	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	A	F	A	G	I	I	I	G	N	Q	I	Q	S	D	Q	K	F	M	G	V	-	F	D	E	S	
Sequence81-P-CG-EA-ABD	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	S	D	E	K	F	M	G	V	-	F	D	E	S	
Sequence150-NP-DA-Sen-BC	F	M	E	N	I	I	Q	P	P	I	P	D	D	K	E	K	A	E	F	L	K	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	T	D	Q	K	F	M	G	V	-	F	D	E	S	
Sequence90-NP-UD-Vit-ABD	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	S	D	E	K	F	M	G	V	-	F	D	V	S	
Sequence136-P-CG-Col-ABCC	F	M	E	H	T	I	Q	P	P	I	P	D	D	K	K	A	Q	F	L	K	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	T	E	Q	K	F	M	G	V	-	F	D	E	S		
Sequence15-NP-UP-Jp-ABD	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	S	D	E	K	F	M	G	V	-	F	D	E	S	
Sequence108-NP-UD-Vit-ABD	F	M	E	N	I	I	Q	P	P	I	P	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	S	D	Q	K	F	M	G	V	-	F	D	E	S	
Sequence104-P-CG-OCC-ABCC	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	K	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	T	D	Q	K	F	M	G	V	-	F	E	D	E	S
Sequence179-NP-UD-Col-ABCC	F	M	E	N	I	I	Q	P	P	I	P	D	D	K	E	K	A	E	F	L	K	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	T	D	Q	K	F	M	G	V	-	F	D	E	S	
Sequence37-NP-GA-Jp-ABCCC	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	Q	S	D	Q	K	F	M	G	V	-	F	E	D	E	S
Sequence89-NP-UD-Vit-ABD	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	S	D	Q	K	F	M	G	V	-	F	D	E	S	
Sequence92-P-CG-Vit-ABD	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	S	D	Q	K	F	M	G	V	-	F	D	E	S	
Sequence49-NP-GA-Jp-ABC	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	A	F	A	G	I	I	I	G	N	Q	I	R	S	D	E	K	F	M	G	V	-	F	D	E	S	
Sequence181-P-CG-Col-ABCC	F	M	E	H	T	I	Q	P	P	I	P	D	D	K	E	K	A	E	F	L	K	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	T	D	Q	K	F	M	G	V	-	F	D	E	S	
Sequence25-NP-GA-Jp-ABD	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	S	D	E	K	F	M	G	V	-	F	D	E	S	
Sequence4-P-CG-Jp-ABD	F	M	E	N	V	I	K	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	S	D	E	K	F	M	G	V	-	F	D	E	S	
Sequence121-NP-G-Jp-ABCC	F	M	E	H	T	I	Q	P	P	I	P	D	D	K	E	K	A	E	F	L	K	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	T	D	Q	K	F	M	G	V	-	F	D	E	S	
4dvy	F	M	E	N	I	I	Q	P	P	I	P	D	D	K	E	K	A	E	F	L	K	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	T	D	Q	K	F	M	G	V	-	F	D	E	S	
Sequence186-NP-UP-Jp-ABD	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	S	D	E	K	F	M	G	V	-	F	D	E	S	
Sequence62-NP-UD-OCC-ABD	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	A	F	A	G	I	I	I	G	N	Q	I	Q	S	D	E	K	F	M	G	V	-	F	D	E	S	
Sequence9-NP-GCA-Jp-ABD	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	S	D	E	K	F	M	G	V	-	F	D	E	S	
Sequence12-NP-UP-Jp-ABD	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	S	D	E	K	F	M	G	V	-	F	D	E	S	
Sequence35-NP-GA-Jp-ABABD	F	M	E	N																																															

Sequence68-NP-D-Am-ABBC	F	M	E	N	I	I	Q	P	P	I	P	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	T	D	Q	K	F	M	G	V	-	F	D	E	S
Sequence47-NP-GA-Jp-ABD	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	S	D	E	K	F	M	G	V	-	F	D	E	S
Sequence56-NP-UD-OCC-ABC	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	A	F	A	G	I	I	I	G	N	Q	I	R	S	D	E	K	F	M	G	V	-	F	D	E	S
Sequence31-NP-GA-Jp-ABD	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	S	D	E	K	F	M	G	V	-	F	D	E	S
Sequence46-NP-UD-Jp-ABD	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	T	F	A	G	I	I	I	G	N	Q	I	Q	S	D	Q	K	F	M	G	V	-	F	D	E	S
Sequence102-NP-UG-Vit-ABD	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	S	D	Q	K	F	M	G	V	-	F	D	E	S
Sequence71-P-CG-EA-ABD	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	S	D	E	K	F	M	G	V	-	F	D	E	S
Sequence30-NP-GA-Jp-ABBD	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	S	D	E	K	F	M	G	V	-	F	D	E	S
Sequence28-NP-GA-Jp-AABD	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	S	D	E	K	F	M	G	V	-	F	D	E	S
Sequence98-P-CG-Vit-AD	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	S	D	Q	K	F	M	G	V	-	F	D	E	S
Sequence99-P-CG-Vit-ABD	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	Q	Q	S	F	A	G	I	I	R	G	N	Q	I	R	S	D	Q	K	F	R	G	V	-	F	D	E	S
Sequence24-NP-UD-USA-ABD	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	V	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	S	D	Q	K	F	M	G	V	-	F	D	E	S
Sequence124-NP-G-Jp-ABC	F	M	E	H	T	I	Q	P	P	I	P	D	D	K	E	K	A	E	F	L	K	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	T	D	Q	K	F	M	G	V	-	F	D	E	S
Sequence77-P-CG-OCC-ABCC	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	S	D	Q	K	F	M	G	V	-	F	D	E	S
Sequence113-NP-UG-Jp-ABC	F	M	E	N	I	I	Q	P	P	I	P	D	D	K	E	K	A	E	F	L	K	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	T	D	Q	K	F	M	G	V	-	F	D	E	S
Sequence88-NP-UD-Vit-ABD	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	S	D	Q	K	F	M	G	V	-	F	D	E	S
Sequence100-NP-UD-Vit-ABD	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	S	D	Q	K	F	M	G	V	-	F	D	E	S
Sequence137-NP-G-Col-ABCC	F	M	E	N	I	I	Q	P	P	I	H	D	D	K	E	K	A	E	F	L	K	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	T	D	Q	K	Y	R	G	V	-	F	D	E	S
Sequence117-NP-G-Jp-ABC	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	K	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	T	D	Q	K	F	M	G	V	-	F	D	E	S
Sequence171-NP-UD-Col-ABCC	F	M	E	Y	T	I	Q	P	P	I	P	D	D	K	E	K	A	E	F	L	K	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	T	D	Q	K	F	M	G	V	-	F	D	E	S
Sequence180-P-CG-Col-ABC	F	M	E	N	I	I	Q	P	P	I	P	D	A	K	E	K	A	E	F	L	K	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	T	D	Q	K	F	M	G	V	-	F	D	E	S
Sequence112-P-CG-Jp-ABCC	F	M	E	H	T	I	Q	P	P	I	P	D	D	K	E	K	A	E	F	L	K	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	T	D	Q	K	F	M	G	V	-	F	D	E	S
Sequence127-NP-UD-Jp-ABC	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	K	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	T	D	Q	K	F	M	G	V	-	F	D	E	S
Sequence51-NP-GA-OCC-ABC	F	I	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	A	F	A	G	I	I	I	G	N	Q	I	Q	S	D	Q	K	F	M	G	V	-	F	D	E	S
Sequence73-P-CG-EA-ABD	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	S	D	E	K	F	M	G	V	-	F	D	E	S
Sequence183-NP-UD-Col-ABD	F	M	E	H	T	I	Q	P	P	I	P	D	D	K	E	K	A	E	F	L	K	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	T	D	Q	K	F	M	G	V	-	F	D	E	S
Sequence34-NP-UD-Jp-ABDD	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	K	S	A	K	Q	A	F	A	G	I	I	I	G	N	Q	I	R	S	D	Q	K	F	M	G	V	-	F	D	E	S
Sequence21-P-CG-Jp-ABD	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	S	D	E	K	F	M	G	V	-	F	D	E	S
Sequence32-NP-GA-Jp-ABD	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	S	D	E	K	F	M	G	V	-	F	D	E	S
Sequence116-NP-UD-Jp-ABC	F	M	E	N	I	I	Q	P	P	I	H	D	D	K	E	K	A	E	F	L	K	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	T	D	Q	K	F	M	G	V	-	F	D	E	S
Sequence8-NP-GCA-Jp-ABD	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	S	D	E	K	F	M	G	V	-	F	D	E	S
Sequence83-P-CG-EA-ABD	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	S	D	E	K	F	M	G	V	-	F	D	E	S
Sequence48-NP-UD-OCC-ABC	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	A	F	A	G	I	I	I	G	N	Q	I	Q	S	D	Q	K	F	M	G	V	-	F	D	E	S
Sequence120-NP-G-Jp-ABC	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	K	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	T	D	Q	K	F	M	G	V	-	F	D	E	S
Sequence187-NP-UG-Jp-ABCCC	F	M	E	N	I	I	Q	P	P	I	P	D	D	K	E	K	A	E	F	L	K	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	T	D	Q	K	F	M	G	V	-	F	D	E	S
Sequence118-NP-G-Jp-ABD	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	S	D	Q	K	F	M	G	V	-	F	D	E	S
Sequence87-NP-UG-Vit-ABD	F	M	E	N	I	I	Q	P	P	I	S	D	D	K	E	K	A	E	F	L	R	S	A	K	Q	S	F	A	G	I	I	I	G	N	Q	I	R	S	D	Q	K	F	M	G	V	-	F	D	E	S

	201																														250																													
Sequence140-NP-GA-Col-ABABC	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	G	G	P	T	G	G	D	W	L	D	I	-	-	F	L	S	-	F	I	F	-	D	K	K	Q	S	S	D	V	-	K	E	A	I	N	Q										
Sequence123-NP-UD-Jp-ABD	L	K	A	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	H	Q										
Sequence111-NP-G-Jp-ABD	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	H	Q										
Sequence57-NP-GA-OCC-AB	L	K	E	R	Q	E	A	E	K	N	G	E	P	T	G	E	P	T	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q										
Sequence172-P-CG-Col-ABCC	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	G	E	P	T	G	G	D	W	L	D	I	-	-	F	L	S	-	F	I	F	-	D	K	K	Q	S	S	D	V	-	K	E	A	I	N	Q										
Sequence110-NP-UD-Jp-ABD	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	H	Q										
Sequence95-NP-UD-Vit-ABD	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	-	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	H	Q										
Sequence107-P-CG-Vit-ABD	L	K	A	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	S	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	H	Q										
Sequence106-P-CG-Vit-ABD	L	E	R	K	A	R	S	R	K	K	-	-	-	-	-	-	-	W	R	A	Y	W	W	G	L	V	G	Y	F	S	-	L	I	Y	I	D	K	K	Q	S	S	D	V	-	K	E	A	I	N	Q										
Sequence105-NP-UD-Vit-ABD	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	S	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	H	Q										
Sequence126-NP-UG-Jp-ABC	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	G	G	P	T	G	G	D	W	L	D	I	-	-	F	L	S	-	F	I	F	-	D	K	K	Q	S	S	D	I	-	K	E	A	I	N	Q										
Sequence135-P-CG-Col-ABCCC	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	G	E	P	T	G	V	D	W	L	D	I	-	-	F	L	S	-	F	I	F	-	D	K	K	Q	S	S	D	V	-	K	E	A	I	N	Q										
Sequence138-NP-GA-Col-ABC	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	G	E	T	T	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	D	-	K	E	A	I	N	Q										
Sequence13-NP-UP-Jp-ABD	L	K	A	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q										
Sequence11-NP-UP-Jp-ABD	L	K	A	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q										
Sequence50-NP-GA-OCC-ABC	L	K	E	R	Q	E	A	E	K	N	G	E	P	T	G	E	P	T	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q										
Sequence26-NP-GA-Jp-ABD	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q										
Sequence55-NP-UD-OCC-ABCCC	L	K	E	R	Q	E	A	E	K	N	G	E	P	T	G	E	P	T	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q										
Sequence178-NP-M-Col-ABCC	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	G	E	P	T	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	V	-	K	E	A	I	N	Q										
Sequence40-NP-GA-Jp-ABD	L	K	A	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q										
Sequence43-NP-GA-Jp-ABD	L	K	A	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q										
Sequence139-NP-UD-Col-ABCC	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	G	E	P	T	G	G	D	W	L	D	I	-	-	F	L	S	-	F	I	F	-	D	K	K	Q	S	S	D	V	-	K	E	A	I	N	Q										

Sequence7-P-CG-Jp-ABBD	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q
Sequence91-P-CG-Vit-ABD	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	G	G	D	W	V	D	I	-	-	F	L	S	-	F	G	F	-	Q	Q	K	T	I	F	R	S	-	Q	E	R	S	F	K
Sequence29-NP-GA-Jp-ABABD	L	K	A	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q
Sequence78-P-CG-EA-ABD	L	K	A	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q
Sequence188-NP-GCA-Jp-AB	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	G	E	P	T	G	G	D	W	L	D	I	-	-	F	L	S	-	F	I	F	-	D	K	K	Q	S	S	D	V	-	K	E	A	I	N	Q
Sequence72-P-CG-EA-ABD	L	K	A	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	G	E	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q
Sequence79-P-CG-EA-ABD	L	K	A	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q
Sequence61-NP-UD-OCC-ABC	L	K	A	R	Q	E	A	E	K	N	-	-	-	-	A	D	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q
Sequence125-NP-UG-Jp-ABCC	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	G	E	P	S	G	G	D	W	L	D	I	-	-	F	L	S	-	F	I	F	-	D	K	K	Q	S	S	D	V	-	K	E	T	I	N	Q
Sequence175-NP-G-Col-ABCC	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	G	G	P	T	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	V	-	K	E	A	I	N	Q
Sequence122-NP-G-Jp-ABCC	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	G	E	P	T	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	V	-	K	E	A	I	N	Q
Sequence36-NP-GA-Jp-ABD	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q
Sequence58-NP-UD-OCC-ABC	L	K	E	R	Q	E	A	E	K	N	G	E	P	T	G	E	P	T	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q
Sequence27-NP-GA-Jp-ABBD	L	K	A	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q
Sequence93-P-CG-Vit-ABD	L	K	A	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q
Sequence177-NP-M-Col-ABCC	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	G	G	P	S	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	G	K	K	Q	S	S	D	V	-	K	E	A	I	N	Q
Sequence182-NP-UD-Col-ABCC	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	G	E	P	T	G	G	D	W	L	D	I	-	-	F	L	S	-	F	I	F	-	D	K	K	Q	S	S	D	V	-	K	E	V	I	N	Q
Sequence114-NP-UG-Jp-ABC	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	G	G	P	T	G	G	D	W	L	D	I	-	-	F	L	S	-	L	I	F	-	D	K	K	Q	S	S	D	V	-	Q	E	A	I	N	Q
Sequence74-P-CG-EA-ABD	L	K	A	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q
Sequence20-P-CG-Jp-ABD	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q
Sequence14-P-CG-Jp-ABD	L	K	A	R	Q	E	A	E	K	N	-	-	-	-	E	Q	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q
Sequence39-NP-GA-Jp-ABC	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	G	G	P	T	G	G	A	W	L	D	I	-	-	F	L	S	-	F	I	F	-	D	K	K	Q	S	S	D	V	-	K	E	A	I	N	Q
Sequence170-NP-UD-Col-ABCC	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	G	G	P	S	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	V	-	K	E	A	I	N	Q
Sequence76-P-CG-EA-ABD	L	K	A	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q
Sequence53-NP-GA-EA-ABD	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q
Sequence174-P-CG-Col-ABCC	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	G	G	P	T	G	G	D	W	L	D	I	-	-	F	L	S	-	F	I	F	-	D	K	K	Q	S	S	D	V	-	K	E	A	I	N	Q
Sequence33-NP-UG-Jp-ABD	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	G	E	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	I	F	-	D	K	K	Q	S	S	D	V	-	K	E	A	I	N	Q
Sequence60-NP-GA-EA-ABD	L	K	A	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q
Sequence38-NP-GA-Jp-ABD	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	E	E	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q
Sequence1-NP-EG-Jp-ABCCC	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	G	E	P	T	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	E	Q	S	S	D	V	-	K	E	A	I	N	Q
Sequence101-P-CG-Vit-ABD	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	S	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	H	Q
Sequence64-NP-UD-OCC-ABC	L	K	E	R	Q	E	A	E	K	N	G	G	S	T	G	E	P	I	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	D	Q
Sequence81-P-CG-EA-ABD	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	G	E	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	D	Q
Sequence150-NP-DA-Sen-BC	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	G	G	S	T	G	G	D	W	L	D	I	-	-	F	L	S	-	F	I	F	-	D	K	K	Q	S	S	D	V	-	K	E	T	L	N	Q
Sequence90-NP-UD-Vit-ABD	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	G	V	-	N	K	K	Q	S	S	D	L	-	K	K	R	S	I	K
Sequence136-P-CG-Col-AACC	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	G	G	P	T	G	G	D	W	L	D	I	-	-	F	L	S	-	F	I	F	-	D	K	K	Q	S	S	D	V	-	K	E	A	I	N	Q
Sequence15-NP-UP-Jp-ABD	L	K	A	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q
Sequence108-NP-UD-Vit-ABD	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	E	Q	S	S	D	L	-	K	E	T	L	H	Q
Sequence104-P-CG-OCC-ABCC	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	G	G	P	T	G	G	D	W	L	D	I	-	-	F	L	S	-	F	I	F	-	D	K	K	Q	S	S	D	V	-	K	E	A	I	N	Q
Sequence179-NP-UD-Col-ABCC	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	G	G	P	T	G	G	D	W	L	D	I	-	-	F	L	S	-	F	T	F	-	G	K	K	Q	S	S	D	V	-	K	E	A	I	N	Q
Sequence37-NP-GA-Jp-ABCCC	L	K	E	R	Q	E	A	E	K	N	G	E	P	T	G	E	P	T	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q
Sequence89-NP-UD-Vit-ABD	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	H	Q
Sequence92-P-CG-Vit-ABD	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	H	Q
Sequence49-NP-GA-Jp-ABC	L	K	E	R	Q	E	A	E	K	N	G	G	S	T	G	E	P	T	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	D	Q
Sequence181-P-CG-Col-ABCC	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	G	E	P	T	G	G	D	W	L	D	I	-	-	F	L	S	-	F	I	F	-	D	K	K	Q	S	S	D	V	-	K	E	A	I	N	Q



Sequence115-NP-UG-Jp-ABC	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	G	G	P	T	G	G	D	W	L	D	I	-	-	F	L	S	-	F	I	F	-	D	K	K	Q	S	S	D	V	-	K	K	A	I	N	Q	
Sequence45-NP-GA-Jp-ABCC	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	G	G	P	T	G	G	D	W	L	D	I	-	-	F	L	S	-	F	I	F	-	D	K	K	Q	S	S	D	V	-	K	E	A	I	N	Q	
Sequence119-NP-UG-Jp-ABC	L	K	A	R	Q	E	A	E	K	N	-	-	-	-	G	G	P	T	S	G	D	W	L	D	I	-	-	F	L	S	-	F	I	F	-	D	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q	
Sequence70-NP-GA-Ch-ABD	L	K	A	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q	
Sequence52-NP-D-Am-ABD	L	K	A	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q	
Sequence97-P-CG-Vit-ABD	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	-	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	H	Q	
Sequence94-NP-UD-Vit-ABD	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	V	E	P	A	G	G	D	W	F	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	H	Q	
Sequence176-NP-GA-Col-ABCC	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	G	E	P	T	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	V	-	K	E	A	I	N	Q	
Sequence68-NP-UD-Jp-ABCC	L	K	E	R	Q	E	A	E	K	T	-	-	-	-	-	-	-	-	-	G	G	D	W	L	D	I	-	-	F	L	S	-	F	I	F	-	D	K	K	Q	S	S	D	I	-	K	E	T	L	N	Q
Sequence47-NP-GA-Jp-ABD	L	K	A	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q	
Sequence56-NP-UD-OCC-ABC	L	K	E	R	Q	E	A	E	K	N	G	E	P	T	G	E	P	T	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q	
Sequence31-NP-GA-Jp-ABD	L	K	A	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q	
Sequence46-NP-UD-Jp-ABD	L	K	E	R	Q	E	A	E	K	N	G	E	P	T	G	E	P	T	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q	
Sequence102-NP-UG-Vit-ABD	L	K	E	R	P	E	A	E	K	N	-	-	-	-	A	K	P	S	G	G	D	W	L	D	I	-	-	F	L	S	-	F	G	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	P	Q	
Sequence71-P-CG-EA-ABD	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q	
Sequence30-NP-GA-Jp-ABBD	L	K	A	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q	
Sequence28-NP-GA-Jp-ABBD	L	K	A	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q	
Sequence98-P-CG-Vit-AD	L	K	E	R	Q	E	A	K	K	N	-	-	-	-	A	E	P	R	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	Q	E	T	L	P	P	
Sequence99-P-CG-Vit-ABD	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	A	K	P	A	-	G	D	W	L	D	I	-	-	L	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	R	E	T	L	H	Q	
Sequence24-NP-UD-USA-ABD	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	A	G	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q	
Sequence124-NP-G-Jp-ABC	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	G	G	P	T	G	G	D	W	L	D	I	-	-	F	L	S	-	F	I	F	-	D	E	K	Q	S	S	D	I	-	K	E	A	I	N	Q	
Sequence77-P-CG-OCC-ABCC	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	D	Q	
Sequence113-NP-UG-Jp-ABC	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	G	G	P	T	G	G	D	W	L	D	I	-	-	F	L	S	-	F	I	F	-	D	K	K	Q	S	S	D	V	-	K	E	A	I	N	Q	
Sequence88-NP-UD-Vit-ABD	L	K	E	R	Q	E	A	E	K	R	-	-	-	M	Q	S	L	V	G	G	D	W	L	D	I	-	-	F	F	I	-	I	L	D	-	S	T	K	N	N	L	P	I	S	K	E	T	L	H	P	
Sequence100-NP-UD-Vit-ABD	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	-	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	H	Q	
Sequence137-NP-G-Col-ABCC	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	G	E	P	T	G	G	D	W	L	D	I	-	-	F	L	S	-	F	I	F	-	D	K	K	Q	S	S	D	V	-	K	E	A	I	N	Q	
Sequence117-NP-G-Jp-ABC	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	G	G	P	T	G	G	D	W	L	D	I	-	-	F	L	S	-	F	I	F	-	D	K	K	Q	S	S	D	V	-	K	E	T	L	N	Q	
Sequence171-NP-UD-Col-ABCC	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	G	E	P	T	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	V	-	K	E	A	I	N	Q	
Sequence180-P-CG-Col-ABC	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	G	E	P	T	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	V	-	K	E	A	I	N	Q	
Sequence112-P-CG-Jp-ABCC	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	G	G	P	S	G	G	D	W	L	D	I	-	-	F	L	S	-	F	I	F	-	D	K	K	Q	S	S	D	V	-	K	E	A	I	N	Q	
Sequence127-NP-UD-Jp-ABC	L	K	D	R	Q	E	A	E	K	N	-	-	-	-	G	E	P	T	G	G	D	W	L	D	I	-	-	F	L	S	-	F	I	F	-	D	K	K	Q	S	S	D	V	-	K	E	T	L	N	Q	
Sequence51-NP-GA-OCC-ABC	L	K	E	R	Q	E	A	E	K	N	G	G	S	T	G	E	P	T	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	D	Q	
Sequence73-P-CG-EA-ABD	L	K	A	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	D	Q	
Sequence183-NP-UD-Col-ABD	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	G	E	P	T	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	V	-	K	E	A	I	N	Q	
Sequence34-NP-UD-Jp-ABDD	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	G	E	P	T	G	G	D	W	L	D	I	-	-	F	L	S	-	F	I	F	-	H	K	K	Q	Y	S	D	V	-	K	E	A	I	N	Q	
Sequence21-P-CG-Jp-ABD	L	K	A	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q	
Sequence32-NP-GA-Jp-ABD	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q	
Sequence116-NP-UD-Jp-ABC	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	G	G	P	T	G	G	D	W	L	D	I	-	-	F	L	S	-	F	I	F	-	D	K	K	Q	S	S	D	V	-	K	K	A	I	N	Q	
Sequence8-NP-GCA-Jp-ABD	L	K	A	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q	
Sequence83-P-CG-EA-ABD	L	K	A	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q	
Sequence48-NP-UD-OCC-ABC	L	K	E	R	Q	E	A	E	K	N	G	E	P	T	G	E	P	T	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q	
Sequence120-NP-G-Jp-ABC	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	G	G	P	T	G	G	D	W	L	D	I	-	-	F	L	S	-	F	I	F	-	D	K	K	Q	S	S	D	V	-	Q	E	T	L	N	Q	
Sequence187-NP-UG-Jp-ABCCC	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	G	E	P	T	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	E	Q	S	S	D	V	-	K	E	A	I	N	Q	
Sequence118-NP-G-Jp-ABD	L	K	E	R	Q	E	A	E	K	N	-	-	-	-	A	E	P	A	G	G	D	W	L	D	I	-	-	F	L	S	-	F	V	F	-	N	K	K	Q	S	S	D	L	-	K	E	T	L	N	Q	
Sequence87-NP-UG-Vit-ABD	L	K	E	R	Q	G	S	R	K	K	-	-	-	-	-	-	-	-	C	R	A	C	W	G	L	V	G	Y	F	F	Y	H	L	C	S	-	T	K	K	Q	S	S	D	L	-	Q	E	T	L	H	

Sequence11-NP-UP-Jp-ABD	E	P	R	P	D	F	E	Q	N	L	A	T	T	T	T	D	I	Q	G	L	P	P	E	S	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence50-NP-GA-OCC-ABC	E	P	R	P	D	F	E	Q	N	L	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	F	K	F	T	L	-	-	-
Sequence26-NP-GA-Jp-ABD	E	P	R	P	D	F	E	Q	N	L	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	F	K	F	T	L	-	-	-
Sequence55-NP-UD-OCC-ABCCC	E	P	V	P	H	V	Q	P	D	I	A	T	T	T	T	D	I	Q	S	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence178-NP-M-Col-ABCC	E	P	V	P	H	V	Q	P	D	I	A	T	T	T	T	D	I	Q	G	L	P	P	E	S	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence40-NP-GA-Jp-ABD	E	P	R	P	D	F	E	Q	N	L	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	F	K	F	T	L	-	-	-
Sequence43-NP-GA-Jp-ABD	E	P	R	P	D	F	E	Q	N	L	A	T	T	T	T	D	I	Q	G	L	P	P	E	S	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence139-NP-UD-Col-ABCC	E	P	V	P	H	V	Q	P	D	I	A	T	T	T	T	D	I	Q	G	L	P	P	E	S	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence7-P-CG-Jp-ABBD	E	P	R	P	D	F	E	Q	N	L	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	F	K	F	T	L	-	-	-
Sequence91-P-CG-Vit-ABD	S	Q	G	L	I	L	N	Q	N	L	A	T	T	A	P	D	I	Q	G	F	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	F	K	F	T	L	-	-	-
Sequence29-NP-GA-Jp-ABABD	E	P	R	P	D	F	E	Q	N	I	A	T	T	T	T	S	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	F	K	F	T	L	-	-	-
Sequence78-P-CG-EA-ABD	E	P	R	P	D	F	E	Q	N	L	A	T	T	T	T	D	I	Q	G	L	P	P	E	S	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence188-NP-GCA-Jp-AB	E	P	V	P	H	V	Q	P	D	I	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence72-P-CG-EA-ABD	E	P	R	P	D	F	E	Q	N	L	P	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	F	K	F	T	L	-	-	-
Sequence79-P-CG-EA-ABD	E	P	M	P	N	V	E	Q	N	L	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	F	K	F	T	L	-	-	-
Sequence61-NP-UD-OCC-ABC	E	P	M	P	N	V	E	Q	N	L	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	F	K	F	T	L	-	-	-
Sequence125-NP-UD-Jp-ABCC	E	P	V	P	H	V	Q	P	D	I	A	T	T	T	T	H	I	Q	G	L	P	P	E	S	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence175-NP-G-Col-ABCC	E	P	V	P	H	V	Q	P	D	I	A	T	T	T	T	D	I	Q	G	L	P	P	E	S	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence122-NP-G-Jp-ABCC	E	P	V	P	H	V	Q	P	D	I	A	T	T	T	T	D	I	Q	G	L	P	P	E	S	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence36-NP-GA-Jp-ABD	E	P	R	P	D	F	E	Q	N	L	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	F	K	F	T	L	-	-	-
Sequence58-NP-UD-OCC-ABC	E	P	V	P	H	V	Q	P	D	I	A	T	T	T	T	D	I	Q	S	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence27-NP-GA-Jp-ABBD	E	P	R	P	D	F	E	Q	N	L	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	F	K	F	T	L	-	-	-
Sequence93-P-CG-Vit-ABD	E	P	R	P	D	F	E	Q	N	L	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence177-NP-M-Col-ABCC	E	P	V	P	H	V	Q	P	D	I	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence182-NP-UD-Col-ABCC	E	P	V	P	H	V	Q	P	D	I	A	T	T	T	T	H	I	Q	G	L	P	P	E	S	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence114-NP-UG-Jp-ABC	E	P	V	P	P	V	Q	P	D	I	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence74-P-CG-EA-ABD	E	P	R	P	D	F	E	Q	N	I	A	T	T	T	T	S	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	F	K	F	T	L	-	-	-
Sequence20-P-CG-Jp-ABD	E	P	R	P	D	F	E	Q	N	L	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	F	K	F	T	L	-	-	-
Sequence14-NP-GCA-Jp-ABD	E	P	R	P	S	V	E	Q	N	I	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	F	K	F	T	L	-	-	-
Sequence39-NP-GA-Jp-ABC	E	P	L	P	H	V	Q	P	D	I	A	T	S	T	T	H	I	Q	G	L	P	P	E	S	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence170-NP-UD-Col-ABCC	E	P	V	P	H	V	Q	P	D	I	A	T	T	T	T	D	I	Q	G	L	P	P	E	S	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence76-P-CG-EA-ABD	E	P	R	P	D	F	E	Q	N	L	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	F	K	F	T	L	-	-	-
Sequence53-NP-GA-ABD	E	P	R	P	D	F	E	Q	N	L	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	F	K	F	T	L	-	-	-
Sequence174-P-CG-Col-ABCC	E	P	V	P	H	V	Q	P	D	I	A	T	T	T	T	H	I	Q	G	L	P	P	E	S	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence33-NP-UG-Jp-ABD	E	P	V	P	H	V	Q	P	D	I	A	T	T	T	T	D	I	Q	G	L	P	P	E	S	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence60-NP-GA-EA-ABD	E	P	R	P	D	F	E	Q	N	L	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	F	K	F	T	L	-	-	-
Sequence38-NP-GA-Jp-ABD	E	P	R	P	D	F	E	Q	N	L	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	F	K	F	T	L	-	-	-
Sequence1-NP-EG-Jp-ABCCC	E	P	V	P	H	V	Q	P	D	I	A	T	T	T	T	H	I	Q	G	L	P	P	E	S	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence101-P-CG-Vit-ABD	E	P	R	P	D	F	E	Q	N	L	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence64-NP-UD-OCC-ABC	E	P	V	P	H	V	Q	P	D	I	A	T	T	T	T	D	I	Q	G	L	P	P	E	S	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence81-P-CG-EA-ABD	E	P	V	P	H	V	Q	P	D	I	A	T	T	T	T	D	I	Q	G	L	P	P	E	S	R	-	-	-	-	-	-	-	D	F	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence150-NP-DA-Sen-BC	E	P	V	P	H	V	Q	P	D	V	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence90-NP-UD-Vit-ABD	S	Q	G	L	I	L	N	K	I	S	P	L	P	P	P	T	Y	K	G	Y	R	L	K	L	E	-	-	-	-	-	-	-	I	C	-	L	M	K	G	V	I	F	L	N	S	L	L	-	-	-
Sequence136-P-CG-Col-AACC	E	P	V	P	H	V	Q	P	D	I	A	T	T	T	T	D	I	Q	G	L	P	P	E	S	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence15-NP-UP-Jp-ABD	E	P	R	P	D	F	E	Q	N	L	A	T	T	T	T	S	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	F	K	F	T	L	-	-	-
Sequence108-NP-UD-Vit-ABD	E	P	R	P	D	F	E	Q	N	L	A	T	T	-	T</																																			

Sequence35-NP-GA-Jp-ABABD	E	P	R	P	D	F	E	Q	N	L	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	F	K	F	T	L	-	-	-
Sequence54-NP-GA-OCC-ABC	E	P	V	S	H	V	Q	P	D	I	A	T	T	T	T	D	I	Q	G	L	P	P	E	S	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence109-P-CG-Jp-ABD	E	P	R	P	D	F	E	Q	N	I	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence96-NP-UD-Vit-ABD	E	P	R	P	D	F	E	Q	N	L	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence80-P-CG-EA-ABD	E	P	M	P	N	V	E	Q	N	L	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence82-P-CG-EA-ABD	E	P	R	P	D	F	E	Q	N	L	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	F	K	F	T	L	-	-	-
Sequence10-NP-GCA-Jp-ABD	E	P	R	P	D	F	E	Q	N	L	A	T	T	T	T	S	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	F	K	F	T	L	-	-	-
Sequence19-NP-UP-Jp-ABBD	E	P	R	P	D	F	E	Q	N	I	A	T	T	T	T	S	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	F	K	F	T	L	-	-	-
Sequence115-NP-UD-Jp-ABC	E	P	V	P	H	V	Q	P	D	I	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence45-NP-GA-Jp-ABCC	E	P	V	P	H	V	Q	P	D	I	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence119-NP-UG-Jp-ABC	E	P	V	P	H	V	Q	P	D	I	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence70-NP-GA-Ch-ABD	E	P	R	P	D	F	E	Q	N	L	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence52-NP-UD-EA-ABD	E	P	R	P	D	F	E	Q	N	I	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	F	K	F	T	L	-	-	-
Sequence97-P-CG-Vit-ABD	E	P	R	A	D	F	E	Q	N	L	A	T	T	T	T	D	I	R	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	E	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence94-NP-UD-Vit-ABD	E	P	R	P	D	F	E	Q	N	L	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence176-NP-GA-Col-ABCC	E	P	V	P	H	V	Q	P	D	I	A	T	T	T	T	D	I	Q	G	L	P	P	E	S	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence68-NP-D-Am-ABBC	E	P	V	P	H	V	Q	P	D	I	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence47-NP-GA-Jp-ABD	E	P	R	P	D	F	E	Q	N	L	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	F	K	F	T	L	-	-	-
Sequence56-NP-UD-OCC-ABC	E	P	V	P	H	V	Q	P	D	I	A	T	T	T	T	D	I	Q	S	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence31-NP-GA-Jp-ABD	E	P	R	P	D	F	E	Q	N	L	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	F	K	F	T	L	-	-	-
Sequence46-NP-UD-Jp-ABD	E	P	V	P	H	V	Q	P	D	I	A	T	T	T	T	D	I	Q	S	L	P	P	E	A	R	-	-	-	-	-	-	-	D	F	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence102-NP-UG-Vit-ABD	E	P	R	P	D	F	E	Q	N	L	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	N	S	L	L	-	-	-
Sequence71-P-CG-EA-ABD	E	P	R	P	D	F	E	Q	N	L	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	F	K	F	T	L	-	-	-
Sequence30-NP-GA-Jp-ABBD	E	P	R	P	D	F	E	Q	N	L	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	F	K	F	T	L	-	-	-
Sequence28-NP-GA-Jp-ABBD	E	P	R	P	D	F	E	Q	N	L	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	F	K	F	T	L	-	-	-
Sequence98-P-CG-Vit-AD	E	P	R	A	D	F	E	Q	N	I	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	V	R	G	N	F	F	K	F	T	L	-	-	-
Sequence99-P-CG-Vit-ABD	E	P	R	P	D	F	E	Q	N	L	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	F	K	F	T	L	-	-	-
Sequence24-NP-UD-USA-ABD	K	P	R	P	D	F	E	Q	N	L	A	T	T	T	T	D	I	Q	G	L	P	P	E	V	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	Y	F	F	K	F	T	L	-	-	-
Sequence124-NP-G-Jp-ABC	E	P	V	P	H	I	Q	P	D	I	A	T	S	T	T	H	I	Q	G	L	P	P	E	S	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence77-P-CG-OCC-ABCC	E	P	V	P	H	V	Q	P	D	I	A	T	T	T	T	D	I	Q	G	L	P	P	E	S	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence113-NP-UG-Jp-ABC	E	P	V	P	H	V	Q	P	D	I	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence88-NP-UD-Vit-ABD	G	A	R	-	-	-	-	-	-	-	A	L	I	L	N	K	I	K	P	L	P	P	P	T	Y	K	A	Y	R	L	K	L	E	I	C	L	M	K	G	V	I	F	L	N	S	L	L	-	-	-
Sequence100-NP-UD-Vit-ABD	E	P	R	P	D	F	E	Q	N	L	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence137-NP-G-Col-ABCC	E	P	V	P	H	V	Q	P	D	I	A	T	S	T	T	H	I	Q	G	L	P	P	E	S	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence117-NP-G-Jp-ABC	E	P	V	P	H	V	Q	P	D	I	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence171-NP-UD-Col-ABCC	E	P	V	P	H	I	Q	P	D	I	A	T	T	T	T	D	I	Q	G	L	P	P	E	S	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence180-P-CG-Col-ABC	E	P	V	P	H	V	Q	P	D	I	A	T	T	T	T	D	I	Q	G	L	P	P	E	S	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence112-P-CG-Jp-ABCC	E	P	V	P	H	V	Q	P	D	I	A	T	T	T	T	D	I	Q	G	L	P	P	E	S	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence127-NP-UD-Jp-ABC	E	P	V	P	H	V	Q	P	D	I	A	T	T	T	T	D	I	Q	G	L	P	P	E	S	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence51-NP-GA-OCC-ABC	E	P	V	P	H	V	Q	P	D	I	A	T	T	T	T	D	I	Q	G	L	P	P	E	S	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence73-P-CG-EA-ABD	E	P	R	P	D	F	E	Q	N	L	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	F	K	F	T	L	-	-	-
Sequence183-NP-UD-Col-ABD	E	P	V	P	H	V	Q	P	D	I	A	T	T	T	T	P	I	Q	G	L	P	P	E	S	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence34-NP-UD-Jp-ABDD	E	P	V	P	H	V	Q	P	D	I	A	T	T	T	T	H	I	Q	G	L	P	P	E	S	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	S	K	F	T	L	-	-	-
Sequence21-P-CG-Jp-ABD	E	P	R	P	D	F	E	Q	N	L	A	T	T	T	T	D	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	F	K	F	T	L	-	-	-
Sequence32-NP-GA-Jp-ABD	E	P	R	P	D	F	E	Q	N	I	A	T	T	T	T	S	I	Q	G	L	P	P	E	A	R	-	-	-	-	-	-	-	D	L	-	L	D	E	R	G	N	F	F	K	F	T	L	-	-	-
Sequence116-NP-UD-Jp-ABC	E	P	V	P	H	V	Q	P	D	I	A	T	T	T																																				



Sequence95-NP-UD-Vit-ABD	G	D	M	E	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	S	S	-	-	-	-	I	N	Y	S	S	T	I	T	L	Y	L	L	C	Y	G	G	V	I	-	A	V	S	N	L	K	S
Sequence107-P-CG-Vit-ABD	G	D	M	E	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	G	H	-	S	N	I	E	P	E	K
Sequence106-P-CG-Vit-ABD	G	D	M	E	M	L	D	V	E	G	V	A	D	I	D	P	N	Y	K	F	-	N	Q	L	L	-	Y	P	Q	V	Y	A	L	I	F	C	V	I	W	E	S	H	-	-	T	E	N	P	E	K
Sequence105-NP-UD-Vit-ABD	G	D	M	E	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	G	H	-	S	S	I	E	P	E	K
Sequence126-NP-UG-Jp-ABC	G	D	M	E	M	L	D	V	E	G	V	A	D	I	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	N	G	I	E	P	E	K
Sequence135-P-CG-Col-ABCCC	G	D	M	E	M	L	D	V	E	G	V	A	D	I	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	N	G	I	E	P	E	K
Sequence138-NP-GA-Col-ABC	G	D	M	E	M	L	D	V	E	G	V	A	D	I	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	T	L	S	S	V	L	M	-	-	-	G	S	H	-	D	G	I	E	P	E	K
Sequence13-NP-UP-Jp-ABD	G	D	V	E	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	M	L	M	-	-	-	G	G	H	-	S	N	I	E	P	E	K
Sequence11-NP-UP-Jp-ABD	G	D	M	E	L	L	D	V	E	G	V	A	D	I	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	G	H	-	S	N	I	E	P	E	K
Sequence50-NP-GA-OCC-ABC	G	D	V	E	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	S	S	I	E	P	E	K
Sequence26-NP-GA-Jp-ABD	G	D	V	E	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	S	N	I	E	P	E	K
Sequence55-NP-UD-OCC-ABCCC	G	D	M	E	M	L	D	V	E	G	V	A	D	I	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	N	G	I	E	P	E	K
Sequence178-NP-M-Col-ABCC	G	D	M	E	M	L	D	V	E	G	V	A	D	I	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	N	G	I	E	P	E	K
Sequence40-NP-GA-Jp-ABD	G	D	V	E	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	G	H	-	S	N	I	E	P	E	K
Sequence43-NP-GA-Jp-ABD	G	D	M	E	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	G	H	-	S	N	I	E	P	E	K
Sequence139-NP-UD-Col-ABCC	G	D	M	E	M	L	D	V	E	G	V	A	D	I	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	N	G	I	E	P	E	K
Sequence7-P-CG-Jp-ABBD	G	D	V	E	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	S	S	I	E	P	E	K
Sequence91-P-CG-Vit-ABD	G	D	M	K	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	G	H	-	S	S	I	E	P	E	K
Sequence29-NP-GA-Jp-ABABD	G	D	V	E	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	S	S	I	E	P	E	K
Sequence78-P-CG-EA-ABD	G	D	M	E	M	L	D	V	E	G	V	A	D	I	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	N	G	I	E	P	E	K
Sequence188-NP-GCA-Jp-AB	G	D	M	E	M	L	D	V	E	G	V	A	D	I	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	N	G	I	E	P	E	K
Sequence72-P-CG-EA-ABD	G	D	V	E	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	M	L	M	-	-	-	G	S	H	-	S	N	I	E	P	E	K
Sequence79-P-CG-EA-ABD	G	D	V	E	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	G	H	-	S	N	I	E	P	E	K
Sequence61-NP-UD-OCC-ABC	G	D	V	E	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	G	H	-	S	N	I	E	P	E	K
Sequence125-NP-UG-Jp-ABCC	G	D	M	E	M	L	D	V	E	G	V	A	D	I	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	N	G	I	E	P	E	K
Sequence175-NP-G-Col-ABCC	G	D	M	E	M	L	D	V	E	G	V	A	D	I	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	N	G	I	E	P	E	K
Sequence122-NP-G-Jp-ABCC	G	D	M	E	M	L	D	V	E	G	V	A	D	I	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	N	G	I	E	P	E	K
Sequence36-NP-GA-Jp-ABD	G	D	V	E	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	S	S	I	E	P	E	K
Sequence58-NP-UD-OCC-ABC	G	D	M	E	M	L	D	V	E	G	V	A	D	I	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	N	G	I	E	P	E	K
Sequence27-NP-GA-Jp-ABBD	G	D	V	E	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	G	H	-	S	N	I	E	P	E	K
Sequence93-P-CG-Vit-ABD	G	D	M	E	M	L	D	V	E	G	V	A	D	K	D	P	-	I	T	G	-	S	S	I	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	G	H	-	S	S	Y	R	T	R	K
Sequence177-NP-M-Col-ABCC	G	D	V	E	M	L	D	V	E	G	V	A	D	M	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	N	G	I	E	P	E	K
Sequence182-NP-UD-Col-ABCC	G	D	M	E	M	L	D	V	E	G	V	A	D	I	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	N	G	I	E	P	E	K
Sequence114-NP-UG-Jp-ABC	G	D	M	E	M	L	D	V	E	G	V	A	D	I	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	N	G	I	E	P	E	K
Sequence74-P-CG-EA-ABD	G	D	V	E	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	N	N	I	E	P	E	K
Sequence20-P-CG-Jp-ABD	G	D	V	E	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	S	N	I	E	P	E	K
Sequence14-NP-GCA-Jp-ABD	G	D	V	E	M	L	D	V	E	G	V	P	D	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	S	N	I	E	P	E	K
Sequence39-NP-GA-Jp-ABC	G	D	M	E	M	L	D	V	E	G	V	A	D	M	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	D	G	I	E	P	E	K
Sequence170-NP-UD-Col-ABCC	G	D	M	E	M	L	D	V	E	G	V	A	D	I	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	D	G	I	E	P	E	K
Sequence76-P-CG-EA-ABD	G	D	V	E	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	T	L	S	S	V	L	M	-	-	-	G	S	H	-	S	N	I	E	P	E	K
Sequence53-NP-GA-EA-ABD	G	D	V	E	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	S	S	I	E	P	E	K
Sequence174-P-CG-Col-ABCC	G	D	M	E	M	L	D	V	E	G	V	A	D	M	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	N	G	I	E	P	E	K
Sequence33-NP-UG-Jp-ABD	G	D	M	E	M	L	D	V	E	G	V	A	D	I	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	N	G	I	E	P	E	K
Sequence60-NP-GA-EA-ABD	G	D	V	E	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	S	S	I	E	P	E	K
Sequence38-NP-GA-Jp-ABD	G	D	V	E	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	M	L	M	-	-	-	G	S	H	-	N	N	I	E	P	E	K
Sequence1-NP-EG-Jp-ABCCC	G	D	M	E	M	L	D	V	E	G	V	A	D	I																																				

Sequence25-NP-GA-Jp-ABD	G	D	V	E	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	S	N	I	E	P	E	K	
Sequence4-P-CG-Jp-ABD	G	D	V	E	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	M	L	M	-	-	-	G	S	H	-	S	N	I	E	P	E	K	
Sequence121-NP-G-Jp-ABCC	G	D	M	E	M	L	D	V	E	G	V	A	D	L	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	N	G	I	E	P	E	K	
4dvy	G	D	M	E	M	L	D	V	E	G	V	A	D	I	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	N	G	I	E	P	E	K	
Sequence186-NP-UP-Jp-ABD	G	D	V	E	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	G	H	-	S	S	I	E	P	E	K	
Sequence62-NP-UD-OCC-ABD	G	D	M	E	M	L	D	V	E	G	V	A	D	I	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	N	G	I	E	P	E	K	
Sequence9-NP-GCA-Jp-ABD	G	D	M	E	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	G	H	-	S	N	I	E	P	E	K	
Sequence12-NP-UP-Jp-ABD	G	D	M	E	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	G	H	-	S	N	I	E	P	E	K	
Sequence35-NP-GA-Jp-ABABD	G	D	V	E	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	S	N	I	E	P	E	K	
Sequence54-NP-GA-OCC-ABC	G	D	M	E	M	L	D	V	E	G	V	A	D	I	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	N	G	I	E	P	E	K	
Sequence109-P-CG-Jp-ABD	G	D	V	E	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	G	H	-	S	S	I	E	P	E	K	
Sequence96-NP-UD-Vit-ABD	G	D	M	E	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	G	H	-	S	S	I	E	P	E	K	
Sequence80-P-CG-EA-ABD	G	D	V	E	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	S	S	I	E	P	E	K	
Sequence82-P-CG-EA-ABD	G	D	V	E	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	G	H	-	S	N	I	E	P	E	K	
Sequence10-NP-GCA-Jp-ABD	G	D	V	E	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	G	H	-	S	N	I	E	P	E	K	
Sequence19-NP-UP-Jp-ABBD	G	D	V	E	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	S	S	I	E	P	E	K	
Sequence115-NP-UG-Jp-ABC	G	N	I	E	M	L	D	V	E	G	V	A	D	I	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	N	G	I	E	P	E	K	
Sequence45-NP-GA-Jp-ABCC	G	D	M	E	M	L	D	V	E	G	V	A	D	I	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	V	L	S	S	V	L	I	-	-	-	G	S	H	-	N	G	I	E	P	E	K	
Sequence119-NP-UG-Jp-ABC	G	D	M	E	M	L	D	V	E	G	V	A	D	I	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	N	G	I	E	P	E	K	
Sequence70-NP-GA-Ch-ABD	G	D	M	E	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	G	H	-	S	N	I	E	P	E	K	
Sequence52-NP-UD-EA-ABD	G	D	V	E	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	G	H	-	S	N	I	E	P	E	K	
Sequence97-P-CG-Vit-ABD	G	D	M	E	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	M	L	M	-	-	-	G	G	H	-	S	N	I	E	P	E	K	
Sequence94-NP-UD-Vit-ABD	G	D	M	E	V	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	V	-	Q	S	I	I	D	P	Q	Y	A	L	S	S	-	-	-	-	-	-	G	A	N	G	G	S	L	Q	H	R	T	
Sequence176-NP-GA-Col-ABCC	G	D	M	E	M	L	D	V	E	G	V	A	D	M	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	N	G	I	E	P	E	K	
Sequence68-NP-D-Am-ABBC	G	D	M	E	M	L	D	V	E	G	V	A	D	I	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	N	G	V	E	P	E	K	
Sequence47-NP-GA-Jp-ABD	G	D	V	E	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	T	L	S	S	V	L	M	-	-	-	G	S	H	-	S	N	I	E	P	E	K	
Sequence56-NP-UD-OCC-ABC	G	D	M	E	M	L	D	V	E	G	V	A	D	I	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	N	G	I	E	P	E	K	
Sequence31-NP-GA-Jp-ABD	G	D	M	E	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	G	H	-	S	N	I	E	P	E	K	
Sequence46-NP-UG-Jp-ABD	G	D	M	E	M	L	D	V	E	G	V	A	D	I	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	N	G	I	E	P	E	K	
Sequence102-NP-UG-Vit-ABD	A	I	W	K	W	L	D	V	E	G	V	A	D	N	D	P	N	Y	K	F	-	N	Q	L	W	I	H	N	K	R	F	I	L	C	A	N	-	-	-	G	G	V	L	A	T	L	E	P	E	K	
Sequence71-P-CG-EA-ABD	G	D	V	E	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	S	S	I	E	P	E	K	
Sequence30-NP-GA-Jp-ABBD	G	D	M	E	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	G	H	-	S	N	I	E	P	E	K	
Sequence28-NP-GA-Jp-AABD	G	D	V	E	M	L	D	V	E	G	V	A	D	K	N	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	G	H	-	S	N	I	E	P	E	K	
Sequence98-P-CG-Vit-AD	G	D	M	E	M	L	D	V	E	G	V	L	T	R	-	I	L	I	T	V	-	P	S	I	I	G	P	H	N	A	F	S	S	V	L	M	-	-	-	G	G	H	-	S	N	I	E	P	E	K	
Sequence99-P-CG-Vit-ABD	G	D	V	E	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	F	-	N	Q	L	S	G	S	Q	Y	T	L	C	L	L	L	L	M	-	-	-	G	S	H	-	S	N	I	E	P	E	K
Sequence24-NP-UD-USA-ABD	G	D	M	E	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	G	H	-	D	G	I	E	P	E	K	
Sequence124-NP-G-Jp-ABC	G	D	M	E	M	L	D	V	E	G	V	A	D	I	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	N	G	I	E	P	E	K	
Sequence77-P-CG-OCC-ABCC	G	D	M	E	M	L	D	V	E	G	V	A	D	I	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	N	G	V	E	P	E	K	
Sequence113-NP-UG-Jp-ABC	G	D	M	E	M	L	D	V	E	G	V	A	D	I	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	N	G	I	E	P	E	K	
Sequence88-NP-UD-Vit-ABD	V	I	W	R	C	W	M	L	R	E	S	L	Y	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	G	H	-	S	S	I	A	T	S	K	
Sequence100-NP-UD-Vit-ABD	G	D	M	E	M	L	D	V	E	G	V	A	D	K	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	G	H	-	S	N	I	E	P	E	K	
Sequence137-NP-G-Col-ABCC	G	D	M	E	M	L	D	V	E	G	V	A	D	I	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	N	G	I	E	P	E	K	
Sequence117-NP-G-Jp-ABC	G	D	M	N	M	L	D	V	E	G	V	A	D	I	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	N	G	I	E	P	E	K	
Sequence171-NP-UD-Col-ABCC	G	D	M	E	M	L	D	V	E	G	V	A	D	I	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	T	L	S	S	V	L	M	-	-	-	G	S	H	-	D	G	I	E	P	E	K	
Sequence180-P-CG-Col-ABC	G	D	M	E	M	L	D	V	E	G	V	A	D	I	D	P	N	Y	K	F	-	N	Q	L	L	I	H	N	N	A	L	S	S	V	L	M	-	-	-	G	S	H	-	N	G	I	E	P	E	K	
Sequence112-P-CG-Jp-ABCC	G	D	M	E	M	L	D	V	E	G	V	A	D																																						

Sequence140-NP-GA-Col-ABABC	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	A	G	N	G	G	F	G	D	K	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	N	N	V	A	T	I	I	N	V	H	M		
Sequence123-NP-UD-Jp-ABD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	S	N	N	V	A	T	L	I	N	A	H	L	
Sequence111-NP-G-Jp-ABD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	S	N	N	V	A	T	L	I	N	A	H	L	
Sequence57-NP-GA-OCC-AB	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	D	N	N	V	A	T	L	I	N	V	H	M	
Sequence172-P-CG-Col-ABCC	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	A	G	N	G	G	F	G	A	K	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	N	N	V	A	T	I	I	N	V	H	M		
Sequence110-NP-UD-Jp-ABD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	N	N	V	A	T	L	I	N	A	H	L		
Sequence95-NP-UD-Vit-ABD	-	-	-	-	-	-	-	-	-	-	-	S	Y	Y	C	M	G	I	M	V	A	L	N	L	G	M	I	G	T	L	P	L	V	V	I	K	T	N	K	A	V	M	V	P	A	T	L	I	N	A	H	L
Sequence107-P-CG-Vit-ABD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	S	N	N	V	A	T	L	I	N	A	H	L	
Sequence106-P-CG-Vit-ABD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	A	G	N	G	G	P	E	A	R	H	A	W	N	A	T	V	G	Y	K	D	Q	Q	G	S	N	N	V	A	T	L	I	N	A	H	L	
Sequence105-NP-UD-Vit-ABD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	S	L	E	A	R	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	S	N	N	V	A	T	L	I	N	A	H	L	
Sequence126-NP-UG-Jp-ABC	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	A	G	N	G	G	F	G	A	K	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	S	N	N	V	A	T	I	I	N	V	H	M	
Sequence135-P-CG-Col-ABCCC	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	A	G	N	G	G	F	G	A	K	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	N	N	V	A	T	I	I	N	V	H	M		
Sequence138-NP-GA-Col-ABC	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	A	G	N	G	G	F	G	A	K	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	N	N	V	A	T	I	I	N	V	H	M		
Sequence13-NP-UP-Jp-ABD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	S	N	N	V	A	T	L	I	N	A	H	L	
Sequence11-NP-UP-Jp-ABD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	N	N	V	A	T	L	I	N	V	H	L		
Sequence50-NP-GA-OCC-ABC	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	N	N	V	A	T	L	I	N	A	H	L		
Sequence26-NP-GA-Jp-ABD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	N	N	V	A	T	L	I	N	A	H	L		
Sequence55-NP-UD-OCC-ABCCC	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	G	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	D	N	N	V	A	T	L	I	N	V	H	M	
Sequence178-NP-M-Col-ABCC	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	A	G	N	G	G	F	G	A	K	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	N	N	V	A	T	I	I	N	V	H	M		
Sequence40-NP-GA-Jp-ABD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	S	N	N	V	A	T	L	I	N	A	H	L	
Sequence43-NP-GA-Jp-ABD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	S	N	N	V	A	T	L	I	N	A	H	L	
Sequence139-NP-UD-Col-ABCC	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	A	G	N	G	G	F	G	A	K	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	N	N	V	A	T	I	I	N	V	H	M		
Sequence7-P-CG-Jp-ABBD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	S	N	N	V	A	T	L	I	N	A	H	L	
Sequence91-P-CG-Vit-ABD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	N	N	V	A	T	L	I	N	A	H	L		
Sequence29-NP-GA-Jp-ABABD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	S	N	N	V	A	T	L	I	N	A	H	L	
Sequence78-P-CG-EA-ABD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	G	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	N	N	V	A	T	L	I	N	A	H	L		
Sequence188-NP-GCA-Jp-AB	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	G	N	G	G	P	G	A	R	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	N	N	V	A	T	I	I	N	V	H	M		
Sequence72-P-CG-EA-ABD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	N	N	V	A	T	L	I	N	A	H	L		
Sequence79-P-CG-EA-ABD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	N	N	V	A	T	L	I	N	A	H	L		
Sequence61-NP-UD-OCC-ABC	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	G	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	N	N	V	A	T	L	I	N	A	H	L		
Sequence125-NP-UG-Jp-ABCC	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	A	G	N	G	G	F	G	A	K	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	N	N	V	A	T	I	I	N	V	H	M		
Sequence175-NP-G-Col-ABCC	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	A	G	N	G	G	F	G	D	K	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	D	N	N	V	A	T	I	I	N	V	H	M	
Sequence122-NP-G-Jp-ABCC	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	A	G	N	G	G	F	G	A	K	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	N	N	V	A	T	I	I	N	V	H	M		
Sequence36-NP-GA-Jp-ABD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	N	N	V	A	T	L	I	N	A	H	L		
Sequence58-NP-UD-OCC-ABC	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	G	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	D	N	N	V	A	T	L	I	N	V	H	M	
Sequence27-NP-GA-Jp-ABBD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	N	N	V	A	T	L	I	N	A	H	L		
Sequence93-P-CG-Vit-ABD	-	-	-	-	-	-	-	-	-	-	-	S	F	I	I	V	W	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	N	N	V	A	T	L	I	N	A	H	L	
Sequence177-NP-M-Col-ABCC	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	A	G	N	G	G	F	G	A	K	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	N	N	V	A	T	I	I	N	V	H	M		
Sequence182-NP-UD-Col-ABCC	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	A	G	N	G	G	F	G	D	K	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	N	N	V	A	T	I	I	N	V	H	M		
Sequence114-NP-UG-Jp-ABC	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	A	G	N	G	G	F	G	A	K	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	N	N	V	A	T	I	I	N	V	H	M		
Sequence74-P-CG-EA-ABD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	N	N	V	A	T	L	I	N	A	H	L		
Sequence20-P-CG-Jp-ABD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	S	R	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	S	N	N	V	A	T	L	I	N	A	H	L	
Sequence14-NP-GCA-Jp-ABD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	N	N	V	A	T	L	I	N	A	H	L		
Sequence39-NP-GA-Jp-ABC	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	A	G	N	G	G	F	G	A	K	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	N	N	V	A	T	I	I	N	V	H	M		
Sequence170-NP-UD-Col-ABCC	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	A	G	N	G	G	F	G	D	K	H	D	W																								



Sequence108-NP-UD-Vit-ABD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	S	N	V	A	T	L	I	N	A	H	L	
Sequence104-P-CG-OCC-ABCC	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	A	G	N	G	G	P	G	A	K	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	N	N	V	A	T	I	I	N	V	H	M	
Sequence179-NP-UD-Col-ABCC	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	A	G	N	G	G	P	G	D	K	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	N	N	V	A	T	I	I	N	V	H	M	
Sequence37-NP-GA-Jp-ABCCC	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	D	N	V	A	T	L	I	N	V	H	M		
Sequence89-NP-UD-Vit-ABD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	N	N	V	A	T	L	I	N	V	H	L	
Sequence92-P-CG-Vit-ABD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	N	N	V	A	T	L	I	N	A	H	L	
Sequence49-NP-GA-Jp-ABC	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	D	N	V	A	T	L	I	N	V	H	M		
Sequence181-P-CG-Col-ABCC	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	A	G	N	G	G	P	G	A	K	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	N	N	V	A	T	I	I	N	V	H	M	
Sequence25-NP-GA-Jp-ABD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	D	N	V	A	T	L	I	N	A	H	L	
Sequence4-P-CG-Jp-ABD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	N	N	V	A	T	L	I	N	A	H	L	
Sequence121-NP-G-Jp-ABCC	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	N	G	G	P	G	A	R	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	N	N	V	A	T	I	I	N	V	H	M		
4dvy	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	A	G	N	G	G	P	G	D	K	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	N	N	V	A	T	L	I	I	N	V	H	M
Sequence186-NP-UP-Jp-ABD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	S	N	V	A	T	L	I	N	A	H	L	
Sequence62-NP-UD-OCC-ABD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	N	N	V	A	T	L	I	N	V	H	M		
Sequence9-NP-GCA-Jp-ABD	-	-	-	-	-	-	-	-	-	-	-	I	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	N	N	V	A	T	L	I	N	A	H	L	
Sequence12-NP-UP-Jp-ABD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	S	N	V	A	T	L	I	N	A	H	L	
Sequence35-NP-GA-Jp-ABABD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	N	N	V	A	T	L	I	N	A	H	L	
Sequence54-NP-GA-OCC-ABC	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	D	N	V	A	T	L	I	N	V	H	M		
Sequence109-P-CG-Jp-ABD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	N	N	V	A	T	L	I	N	A	H	L	
Sequence96-NP-UD-Vit-ABD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	S	N	V	A	T	L	I	N	A	H	L	
Sequence80-P-CG-EA-ABD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	N	N	V	A	T	L	I	N	A	H	L	
Sequence82-P-CG-EA-ABD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	N	N	V	A	T	L	I	N	A	H	L	
Sequence10-NP-GCA-Jp-ABD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	N	N	V	A	T	L	I	N	A	H	L	
Sequence19-NP-UP-Jp-ABBD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	N	N	V	A	T	L	I	S	A	H	L	
Sequence115-NP-UG-Jp-ABC	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	A	G	N	G	G	P	G	A	K	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	N	N	V	A	T	I	I	N	V	H	M	
Sequence45-NP-GA-Jp-ABCC	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	A	G	N	G	G	P	G	A	K	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	N	N	V	A	T	I	I	N	V	H	M	
Sequence119-NP-UG-Jp-ABC	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	A	G	N	G	G	P	G	A	K	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	N	N	V	A	T	I	I	N	V	H	M	
Sequence70-NP-GA-Ch-ABD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	N	N	V	A	T	L	I	N	A	H	L	
Sequence52-NP-UD-EA-ABD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	N	N	V	A	T	L	I	N	V	H	L	
Sequence97-P-CG-Vit-ABD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	N	N	V	A	T	L	I	N	A	H	L	
Sequence94-NP-UD-Vit-ABD	C	K	S	F	I	T	C	M	G	I	M	V	V	L	K	L	G	M	I	G	T	P	P	L	V	I	K	T	N	K	A	V	M	W	P	H	-	-	-	S	L	V	R	I	L	I	T	A	V	-	
Sequence176-NP-GA-Col-ABCC	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	A	G	N	G	G	P	G	A	K	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	N	N	V	A	T	I	I	N	V	H	M	
Sequence68-NP-D-Am-ABBC	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	N	N	V	A	T	I	I	N	V	H	M		
Sequence47-NP-GA-Jp-ABD	-	-	-	-	-	-	-	-	-	-	-	A	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	N	N	V	A	T	L	I	N	A	H	L	
Sequence56-NP-UD-OCC-ABC	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	D	N	V	A	T	L	I	N	V	H	M		
Sequence31-NP-GA-Jp-ABD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	S	N	V	A	T	L	I	N	A	H	L	
Sequence46-NP-UD-Jp-ABD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	N	G	G	P	E	A	R	H	E	W	N	A	T	V	G	Y	K	N	Q	Q	G	D	N	V	A	T	L	I	N	V	H	M		
Sequence102-NP-UG-Vit-ABD	-	-	-	-	-	-	-	-	-	-	-	V	P	F	C	L	G	K	M	A	V	L	K	L	G	M	I	R	N	A	T	V	G	Y	K	N	Q	Q	G	N	N	V	A	T	L	I	N	A	H	L	
Sequence71-P-CG-EA-ABD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	N	N	V	A	T	L	I	N	A	H	L	
Sequence30-NP-GA-Jp-ABBD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	N	N	V	A	T	L	I	N	A	H	L	
Sequence28-NP-GA-Jp-AABD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	N	N	V	A	T	L	I	N	A	H	L	
Sequence98-P-CG-Vit-AD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	G	N	A	T	V	G	Y	K	D	Q	Q	G	N	N	V	A	T	L	I	N	A	H	L	
Sequence99-P-CG-Vit-ABD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	N	N	V	A	T	L	I	N	A	H	L	
Sequence24-NP-UD-USA-ABD	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	C	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	N	N	V	A	T	L	I	N	A	H	L	
Sequence124-NP-G-Jp-ABC	-	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	A	G	N	G	G	P	G	A	K	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	N	N	V	A	T	I	I	N	V	H	M	

Sequence116-NP-UD-Jp-ABC	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	A	G	N	G	G	F	G	A	K	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	N	N	V	A	T	I	I	N	V	H	M
Sequence8-NP-GCA-Jp-ABD	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	N	N	V	A	T	L	I	N	A	H	L
Sequence83-P-CG-EA-ABD	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	N	N	V	A	T	L	I	N	A	H	L
Sequence48-NP-UD-OCC-ABC	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	G	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	D	N	V	A	T	L	I	N	V	H	M
Sequence120-NP-G-Jp-ABC	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	A	G	N	G	G	F	G	A	K	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	N	N	V	A	T	I	I	N	V	H	M
Sequence187-NP-UG-Jp-ABCCC	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	A	G	N	G	G	F	G	A	K	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	D	N	V	A	T	L	I	N	V	H	M
Sequence118-NP-G-Jp-ABD	-	-	-	-	-	-	-	-	-	-	V	S	L	L	Y	G	D	N	G	G	S	E	A	R	H	D	W	N	A	T	V	G	Y	K	N	Q	Q	G	N	N	V	A	T	L	I	N	A	H	L
Sequence87-NP-UG-Vit-ABD	-	-	-	-	-	-	-	-	-	-	F	P	L	L	Y	G	D	N	G	G	P	E	A	R	H	D	W	N	A	T	V	G	Y	K	D	Q	Q	G	S	N	V	A	T	L	I	N	A	H	L

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Sequence140-NP-GA-Col-ABABC	K	N	G	S	G	L	V	I	A	G	G	E	K	G	I	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	S	Q	R	A	L	S	Q	E	E	I	R	N	K	I	D	F	M	-	-	E
Sequence123-NP-UD-Jp-ABD	N	N	G	S	G	L	I	I	A	G	N	E	N	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	M	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E
Sequence111-NP-G-Jp-ABD	N	N	G	S	G	L	V	I	A	G	N	E	N	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	M	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E
Sequence57-NP-GA-OCC-AB	K	N	G	S	G	L	V	I	A	G	G	E	K	G	V	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	L	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E
Sequence172-P-CG-Col-ABCC	K	N	G	S	G	L	V	I	A	G	G	E	K	G	I	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	S	Q	R	A	L	S	Q	E	E	I	R	N	K	I	D	F	M	-	-	E
Sequence110-NP-UD-Jp-ABD	N	N	G	S	G	L	I	I	A	G	N	E	N	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	M	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E
Sequence95-NP-UD-Vit-ABD	N	N	G	S	G	L	I	I	A	G	N	E	D	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	M	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E
Sequence107-P-CG-Vit-ABD	N	N	G	S	G	L	I	I	A	G	N	E	D	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	M	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E
Sequence106-P-CG-Vit-ABD	H	N	G	S	G	L	L	I	A	G	N	E	N	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	S	E	T	S	N	E	S	R	R	D	P	K	Q	S	G	F	H	-	-	G
Sequence105-NP-UD-Vit-ABD	N	N	G	S	G	L	I	I	A	G	N	E	D	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	L	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E
Sequence126-NP-UG-Jp-ABC	K	N	G	S	G	L	V	I	A	G	G	E	K	G	I	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	S	Q	R	A	L	S	Q	E	E	I	R	N	K	I	D	F	M	-	-	E
Sequence135-P-CG-Col-ABCCC	K	N	G	S	G	L	V	I	A	G	G	E	K	G	I	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	S	Q	R	A	L	S	Q	E	E	I	Q	N	K	I	D	F	M	-	-	E
Sequence138-NP-GA-Col-ABC	K	N	G	S	G	L	V	I	A	G	G	E	K	G	I	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	S	Q	R	A	L	S	Q	E	E	I	R	N	K	I	D	F	M	-	-	E
Sequence13-NP-UP-Jp-ABD	N	N	G	S	G	L	I	I	A	G	N	K	D	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	L	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E
Sequence11-NP-UP-Jp-ABD	N	N	G	S	G	L	I	I	A	G	N	E	D	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	M	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E
Sequence50-NP-GA-OCC-ABC	N	N	G	S	G	L	V	I	A	G	N	E	N	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	L	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E
Sequence26-NP-GA-Jp-ABD	N	N	G	S	G	L	I	I	V	G	N	E	N	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	L	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E
Sequence55-NP-UD-OCC-ABCCC	K	N	G	S	G	L	V	I	A	G	G	E	K	G	V	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	L	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E
Sequence178-NP-M-Col-ABCC	K	N	G	S	G	L	V	I	A	G	G	E	K	G	I	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	S	Q	R	A	L	S	Q	E	E	I	Q	N	K	I	D	F	M	-	-	E
Sequence40-NP-GA-Jp-ABD	H	N	G	S	G	L	V	I	A	G	N	E	D	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	M	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E
Sequence43-NP-GA-Jp-ABD	N	N	G	S	G	L	I	I	A	G	N	E	N	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	L	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E
Sequence139-NP-UD-Col-ABCC	K	N	G	S	G	L	V	I	A	G	G	E	K	G	I	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	S	Q	R	A	L	S	Q	E	E	I	R	N	K	I	D	F	M	-	-	E
Sequence7-P-CG-Jp-ABBD	N	N	G	S	G	L	V	I	A	G	N	E	N	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	L	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E
Sequence91-P-CG-Vit-ABD	N	N	G	S	G	L	V	I	A	G	N	E	D	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	M	S	Q	E	E	I	Q	N	I	V	D	F	M	-	-	E
Sequence29-NP-GA-Jp-ABABD	N	N	G	S	G	L	V	I	A	G	N	E	N	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	L	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E
Sequence78-P-CG-EA-ABD	N	N	G	S	G	L	V	I	A	G	N	E	D	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	L	S	Q	K	E	I	Q	N	K	V	D	F	M	-	-	E
Sequence188-NP-GCA-Jp-AB	K	N	G	S	G	L	V	I	A	G	G	E	K	G	I	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	S	Q	R	A	L	S	Q	E	E	I	Q	N	K	I	D	F	M	-	-	E
Sequence72-P-CG-EA-ABD	N	N	G	S	G	L	V	I	A	G	N	E	D	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	M	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E
Sequence79-P-CG-EA-ABD	N	N	G	S	G	L	I	I	A	G	N	E	D	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	L	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E
Sequence61-NP-UD-OCC-ABC	N	N	G	S	G	L	I	I	A	G	N	E	D	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	L	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E
Sequence125-NP-UG-Jp-ABCC	K	N	G	S	G	L	V	I	A	G	G	E	K	G	I	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	S	Q	R	A	L	S	Q	E	E	I	R	N	K	V	D	F	M	-	-	E
Sequence175-NP-G-Col-ABCC	K	N	G	S	G	L	V	I	A	G	G	E	K	G	I	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	S	Q	R	A	L	S	Q	E	E	I	R	N	K	I	D	F	M	-	-	E
Sequence122-NP-G-Jp-ABCC	K	N	G	S	G	L	V	I	A	G	G	E	K	G	I	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	S	Q	R	A	L	S	Q	E	E	I	R	N	K	V	D	F	M	-	-	E
Sequence36-NP-GA-Jp-ABD	N	N	G	S	G	L	V	I	A	G	N	E	D	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	M	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E
Sequence58-NP-UD-OCC-ABC	K	N	G	S	G	L	V	I	A	G	G	E	K	G	V	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	L	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E
Sequence27-NP-GA-Jp-ABBD	N	N	G	S	G	L	I	I	V	G	N	E	D	G	I	K	N	P	S	F	Y	L	Y	K	T	D	Q	L	T	G	L	K	Q	A	L	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E
Sequence93-P-CG-Vit-ABD	H	N	G	S	G	L	I	I	A	G	N	E	N	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	M	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E
Sequence177-NP-M-Col-ABCC	K	N	G	S	G	L	V	I	A	G	G	E	K	G	I	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	S	Q	R	A	L	S	Q	E	E	I	R	N	K	I	D	F	M	-	-	E
Sequence182-NP-UD-Col-ABCC	K	N	G	S	G	L	V	I	A	G	G	E	K	G	I	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	S	Q	R	A	L	S	Q	E	E	I	L	N	K	V	D	F	M	-	-	E
Sequence114-NP-UG-Jp-ABC	K	N	G	S	G	L	V	I	A	G	G	E	K	G	I	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	S	Q	R	A	L	S	Q	E	E	I	R	N	K	V	D	F	M	-	-	E
Sequence74-P-CG-EA-ABD	N	N	G	S	G	L	V	I	A	G	N	E	D	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	M	S	Q	E	E	I	Q	N	K	V	D					

Sequence1-NP-EG-Jp-ABCCC	K	N	G	S	G	L	V	I	A	G	G	E	K	G	I	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	S	Q	R	A	L	S	Q	E	E	I	R	N	K	I	D	F	M	-	-	E	
Sequence101-P-CG-Vit-ABD	N	N	G	S	G	L	V	I	A	G	N	E	D	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	M	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E	
Sequence64-NP-UD-OCC-ABC	K	N	G	S	G	L	V	I	A	G	G	E	K	G	V	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	L	S	Q	K	E	E	I	Q	N	K	V	D	F	M	-	-	E
Sequence81-P-CG-EA-ABD	K	N	G	S	G	L	V	I	A	G	G	E	K	G	V	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	L	S	Q	K	E	E	I	Q	N	K	V	D	F	M	-	-	E
Sequence150-NP-DA-Sen-BC	K	N	G	S	G	L	V	I	A	G	G	E	K	G	I	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	S	Q	R	A	L	S	Q	E	E	I	R	N	K	I	D	F	M	-	-	E	
Sequence90-NP-UD-Vit-ABD	N	N	G	S	G	L	V	I	A	G	N	E	D	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	M	S	Q	E	E	I	Q	N	K	V	G	F	M	-	-	E	
Sequence136-P-CG-Col-1AACC	K	N	G	S	G	L	V	I	A	G	G	E	K	G	I	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	S	Q	R	A	L	S	Q	E	E	I	R	N	K	I	D	F	M	-	-	E	
Sequence15-NP-UP-Jp-ABD	N	N	G	S	G	L	V	I	A	G	N	E	D	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	L	S	Q	E	E	I	R	N	K	V	D	F	M	-	-	E	
Sequence108-NP-UD-Vit-ABD	Y	N	G	S	G	L	I	I	A	G	N	E	D	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	M	S	Q	E	E	I	Q	N	K	V	D	F	L	-	-	E	
Sequence104-P-CG-OCC-ABCC	K	N	G	S	G	L	V	I	A	G	G	E	K	G	I	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	S	Q	R	A	L	S	Q	E	E	I	R	N	K	I	D	F	M	-	-	E	
Sequence179-NP-UD-Col-1ABCC	K	N	G	S	G	L	V	I	A	G	G	E	K	G	I	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	S	Q	R	A	L	S	Q	E	E	I	Q	N	K	I	D	F	M	-	-	E	
Sequence37-NP-GA-Jp-ABCCC	K	N	G	S	G	L	V	I	A	G	G	E	K	G	V	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	L	S	Q	E	E	I	K	N	K	V	D	F	M	-	-	E	
Sequence89-NP-UD-Vit-ABD	Y	N	G	S	G	L	V	I	A	G	N	E	D	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	M	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E	
Sequence92-P-CG-Vit-ABD	N	N	G	S	G	L	V	I	A	G	N	E	D	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	M	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E	
Sequence49-NP-GA-Jp-ABC	K	N	G	S	G	L	V	I	A	G	G	E	K	G	V	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	L	S	Q	E	E	I	Q	N	K	I	D	F	M	-	-	E	
Sequence181-P-CG-Col-1ABCC	K	N	G	S	G	L	V	I	A	G	G	E	K	G	I	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	S	Q	R	A	L	S	Q	E	E	I	R	N	K	I	D	F	M	-	-	E	
Sequence25-NP-GA-Jp-ABD	N	N	G	S	G	L	V	I	A	G	N	E	N	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	L	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E	
Sequence4-P-CG-Jp-ABD	N	N	G	S	G	L	I	I	A	G	N	E	D	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	L	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E	
Sequence121-NP-G-Jp-ABCC	K	N	G	S	G	L	V	I	A	G	G	E	K	G	I	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	S	Q	R	A	L	S	Q	E	E	I	R	N	K	I	D	F	M	-	-	E	
4dvy	K	N	G	S	G	L	V	I	A	G	G	E	K	G	I	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	S	Q	R	A	L	S	Q	E	E	I	R	N	K	V	D	F	M	-	-	E	
Sequence186-NP-UP-Jp-ABD	N	N	G	S	G	L	I	I	A	G	N	E	N	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	L	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E	
Sequence62-NP-UD-OCC-ABD	K	N	G	S	G	L	V	I	A	G	G	E	K	G	V	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	L	S	Q	K	E	I	Q	N	K	V	D	F	M	-	-	E	
Sequence9-NP-GCA-Jp-ABD	N	N	G	S	G	L	I	I	A	G	N	E	D	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	L	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E	
Sequence12-NP-UP-Jp-ABD	N	N	G	S	G	L	V	I	A	G	N	E	N	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	L	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E	
Sequence35-NP-GA-Jp-ABABD	N	N	G	S	G	L	I	I	A	G	N	E	D	G	I	K	N	P	S	F	Y	L	Y	K	T	D	Q	L	T	G	L	K	Q	A	L	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E	
Sequence54-NP-GA-OCC-ABC	K	N	G	S	G	L	V	I	A	G	G	E	K	G	V	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	L	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E	
Sequence109-P-CG-Jp-ABD	H	N	G	S	G	L	V	I	A	G	N	E	N	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	M	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E	
Sequence96-NP-UD-Vit-ABD	C	N	G	S	G	L	V	I	A	G	N	E	D	G	I	K	N	R	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	M	S	Q	E	E	S	Q	N	K	V	D	F	M	-	-	E	
Sequence80-P-CG-EA-ABD	N	N	G	S	G	L	I	I	A	G	N	E	D	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	L	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E	
Sequence82-P-CG-EA-ABD	N	N	G	S	G	L	V	I	A	G	N	E	D	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	M	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E	
Sequence10-NP-GCA-Jp-ABD	N	N	G	S	G	L	I	I	A	G	N	E	D	G	I	K	N	P	S	F	Y	L	Y	K	T	D	Q	L	T	G	L	K	Q	A	L	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E	
Sequence19-NP-UP-Jp-ABBD	N	N	G	S	G	L	V	I	A	G	N	E	N	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	M	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E	
Sequence115-NP-UG-Jp-ABC	K	N	G	S	G	L	V	I	A	G	N	E	K	G	I	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	S	Q	R	A	L	S	Q	E	E	I	Q	N	K	I	D	F	M	-	-	E	
Sequence45-NP-GA-Jp-ABCC	K	N	G	S	G	L	V	I	A	G	G	E	K	G	I	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	S	Q	R	A	L	S	Q	E	E	I	R	N	K	V	D	F	M	-	-	E	
Sequence119-NP-UG-Jp-ABC	K	N	G	S	G	L	V	I	A	G	G	E	K	G	I	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	S	Q	R	A	L	S	Q	E	E	I	R	N	K	I	D	F	M	-	-	E	
Sequence70-NP-GA-Ch-ABD	N	N	G	S	G	L	I	I	A	G	N	E	N	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	L	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E	
Sequence52-NP-UD-EA-ABD	N	N	G	S	G	L	V	I	A	G	N	E	N	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	L	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E	
Sequence97-P-CG-Vit-ABD	N	N	G	S	G	L	I	I	A	G	N	E	D	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	M	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E	
Sequence94-NP-UD-Vit-ABD	-	-	G	K	S	L	R	V	M	-	-	K	M	G	L	K	T	L	A	S	I	S	T	K	K	T	N	S	Q	A	C	N	K	Q	L	S	P	E	K	-	R	S	K	T	K	W	V	S	W	N	
Sequence176-NP-GA-Col-1ABCC	K	N	G	S	G	L	V	I	A	G	G	E	K	G	I	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	S	Q	R	A	L	S	Q	E	E	I	R	N	K	I	D	F	M	-	-	E	
Sequence68-NP-D-Am-ABBC	K	N	G	S	G	L	V	I	A	G	G	E	K	G	I	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	S	Q	R	A	L	S	Q	E	E	I	R	N	K	V	D	F	M	-	-	E	
Sequence47-NP-GA-Jp-ABD	N	N	G	S	G	L	V	I	A	G	N	E	D	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	M	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E	
Sequence56-NP-UD-OCC-ABC	K	N	G	S	G	L	V	I	A	G	G	E	K	G	V	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	L	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E	
Sequence31-NP-GA-Jp-ABD	N	N	G	S	G	L	I	I	A	G	N	E	D	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	M	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E	
Sequence46-NP-UD-Jp-ABD	K	N	G	S	G	L	V	I	A	G	G	E	K	G	V	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A																	



Sequence112-P-CG-Jp-ABCC  
Sequence127-NP-UD-Jp-ABC  
Sequence51-NP-GA-OCC-ABC  
Sequence73-P-CG-EA-ABD  
Sequence183-NP-UD-Col-ABD  
Sequence34-NP-UD-Jp-ABDD  
Sequence21-P-CG-Jp-ABD  
Sequence32-NP-GA-Jp-ABD  
Sequence116-NP-UD-Jp-ABC  
Sequence8-NP-GCA-Jp-ABD  
Sequence83-P-CG-EA-ABD  
Sequence48-NP-UD-OCC-ABC  
Sequence120-NP-G-Jp-ABC  
Sequence187-NP-UG-Jp-ABCCC  
Sequence118-NP-G-Jp-ABD  
Sequence87-NP-UG-Vit-ABD

K	N	G	S	G	L	V	I	A	G	G	E	K	G	I	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	S	Q	R	A	L	S	Q	E	E	I	R	N	K	I	D	F	M	-	-	E	
K	N	G	S	G	L	V	I	A	G	G	E	K	G	I	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	S	Q	R	A	A	L	S	Q	E	E	I	R	N	K	I	D	F	M	-	-	E
K	N	G	S	G	L	V	I	A	G	G	E	K	G	V	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	A	L	S	Q	K	E	I	Q	N	K	V	D	F	M	-	-	E
N	N	G	S	G	L	V	I	A	G	G	E	K	G	I	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	S	Q	R	A	A	L	S	Q	E	E	I	R	N	K	I	D	F	M	-	-	E
N	N	G	S	G	L	I	I	A	G	N	E	D	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	A	L	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E
N	N	G	S	G	L	V	I	A	G	N	E	D	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	A	L	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E
K	N	G	S	G	L	V	I	A	G	G	E	K	G	I	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	S	Q	R	A	A	L	S	Q	E	E	I	Q	N	K	I	D	F	M	-	-	E
N	N	G	S	G	L	V	I	A	G	N	E	D	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	A	L	S	Q	G	E	I	Q	N	K	V	D	F	M	-	-	E
K	N	G	S	G	L	V	I	A	G	G	E	K	G	V	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	A	L	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E
K	N	G	S	G	L	V	I	A	G	G	E	K	G	I	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	S	Q	R	A	A	L	S	Q	E	E	I	R	N	K	I	D	F	M	-	-	E
K	N	G	S	G	L	V	I	A	G	G	E	K	G	I	N	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	S	Q	R	A	A	L	S	Q	E	E	I	R	N	K	I	D	F	M	-	-	E
N	N	G	S	G	L	I	I	A	G	N	E	D	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	Q	A	A	M	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E
N	N	G	S	G	L	I	I	A	G	N	E	D	G	I	K	N	P	S	F	Y	L	Y	K	E	D	Q	L	T	G	L	K	K	A	A	L	S	Q	E	E	I	Q	N	K	V	D	F	M	-	-	E

Sequence140-NP-GA-Col-ABABC  
Sequence123-NP-UD-Jp-ABD  
Sequence111-NP-G-Jp-ABD  
Sequence57-NP-GA-OCC-AB  
Sequence172-P-CG-Col-ABCC  
Sequence110-NP-UD-Jp-ABD  
Sequence95-NP-UD-Vit-ABD  
Sequence107-P-CG-Vit-ABD  
Sequence106-P-CG-Vit-ABD  
Sequence105-NP-UD-Vit-ABD  
Sequence126-NP-UG-Jp-ABC  
Sequence135-P-CG-Col-ABCCC  
Sequence138-NP-GA-Col-ABC  
Sequence13-NP-UP-Jp-ABD  
Sequence11-NP-UP-Jp-ABD  
Sequence50-NP-GA-OCC-ABC  
Sequence26-NP-GA-Jp-ABD  
Sequence55-NP-UD-OCC-ABCCC  
Sequence178-NP-M-Col-ABCC  
Sequence40-NP-GA-Jp-ABD  
Sequence43-NP-GA-Jp-ABD  
Sequence139-NP-UD-Col-ABCC  
Sequence7-P-CG-Jp-ABBD  
Sequence91-P-CG-Vit-ABD  
Sequence29-NP-GA-Jp-ABABD  
Sequence78-P-CG-EA-ABD  
Sequence188-NP-GCA-Jp-AB  
Sequence72-P-CG-EA-ABD  
Sequence79-P-CG-EA-ABD  
Sequence61-NP-UD-OCC-ABC  
Sequence125-NP-UG-Jp-ABCC  
Sequence175-NP-G-Col-ABCC  
Sequence122-NP-G-Jp-ABCC  
Sequence36-NP-GA-Jp-ABD  
Sequence58-NP-UD-OCC-ABC  
Sequence27-NP-GA-Jp-ABBD  
Sequence93-P-CG-Vit-ABD  
Sequence177-NP-M-Col-ABCC  
Sequence182-NP-UD-Col-ABCC  
Sequence114-NP-UG-Jp-ABC  
Sequence74-P-CG-EA-ABD  
Sequence20-P-CG-Jp-ABD  
Sequence14-NP-GCA-Jp-ABD

F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	R	N	E	I	K	D	F	Q	K	D	S	K	A	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K
F	L	V	K	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	-	-	-	-	-	-	-	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	V	A	F	V	S	K	K
F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	D	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K
F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	N	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	V	A	F	V	S	K	K
F	L	A	R	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	N	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	V	A	F	V	S	K	K
I	S	C	T	K	T	I	A	K	L	D	N	L	S	E	K	E	K	E	K	F	R	T	E	I	E	D	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	V	A	F	V	S	K	K
F	L	A	K	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	G	N	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K
F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	R	T	E	I	K	D	F	Q	K	D	S	K	P	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K
F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	R	T	E	I	K	D	F	Q	K	D	S	K	P	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K
F	L	A	R	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	N	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K
F	L	A	K	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	N	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K
F	L	V	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	D	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K
F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	R	N	E	I	K	D	F	Q	K	D	S	K	P	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K
F	L	A	K	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	N	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K
F	L	V	R	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	N	F	Q	K	N	P	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K
F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	R	N	E	I	K	D	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K
F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	N	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K
F	L	A	K	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	D	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K
F	L	A	K	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	D	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K
F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	A	E	I	E	N	F	P	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K
F	L	A	K	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	N	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K
F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	R	T	E	I	K	D	F	Q	K	D	S	K	A	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K
F	L	A	K	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	D	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K
F	L	A	K	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	D	F	Q	K	N	R	K	A	Y	L	D	A	L	G	N	D	R	V	A	F	V	S	K	K
F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	R	N	E	I	K	D	F	Q	K	D	S	K	P	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K
F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	N	E	I	K	D	F	Q	K	D	S	K	A	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K
F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	D	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K
F	L	A	K	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	N	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K
F	L	A	R	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	D	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	V	A	F	V	S	K	K
F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	R	N	E	I	K	D	F	Q	K	D	S	K	A	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K
F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	N	E	I	K	D	F	Q	K	D	S	K	A	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K
F	L	A	K	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	D	F	Q	K	N	R	K	A	Y	L	D	A	L	G	N	D	R	V	A	F	V	S	K	K
F	L	A	K	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	D	F	Q	K	N	R	K	A	Y	L	D	A	L	G	N	D	R	V	A	F	V	S	K	K
F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	R	N	E	I	K	D	F	Q	K	D	S	K	P	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K
F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	N	E	I	K	D	F	Q	K	D	S	K	A	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K
F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	N	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K
F	L	A	K	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	D	F	Q	K	N	R	K	A	Y	L	D	A	L	G	N	D	R	V	A	F	V	S	K	K
F	L	A	K	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	D	F	Q	K	N	R	K	A	Y	L	D	A	L	G	N	D	R	V	A	F	V	S	K	K
F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	R	N	E	I	K	D	F	Q	K	D	S	K	A	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K
F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	D	F	Q	K	D	S	K	A	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K
F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	D	F	Q	K	D	S	K	A	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K
F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	D	F	Q	K	D	S	K	A	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K
F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	D	F	Q	K	D	S	K	A	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K
F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	D	F	Q	K	D	S	K	A	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K
F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	D	F	Q	K	D	S	K	A	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K
F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	D	F	Q	K	D	S	K	A	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K
F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	D	F	Q	K	D	S	K	A	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K
F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	D	F	Q	K	D	S	K	A	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K
F	L	A	Q	N	N																																												

Sequence39-NP-GA-Jp-ABC	F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	R	T	E	I	K	D	F	Q	K	D	S	K	P	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K	
Sequence170-NP-UD-Col-ABCC	F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	R	N	E	I	K	D	F	Q	K	D	S	K	P	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K	
Sequence76-P-CG-EA-ABD	F	L	A	K	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	G	N	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	I	V	A	F	V	S	K	K
Sequence53-NP-GA-EA-ABD	F	L	A	K	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	G	N	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	I	V	A	F	V	S	K	K
Sequence174-P-CG-Col-ABCC	F	L	A	Q	N	S	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	R	N	E	I	K	D	F	Q	K	D	S	K	A	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K	
Sequence33-NP-UG-Jp-ABD	F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	Y	F	Q	K	D	S	K	A	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K	
Sequence60-NP-GA-EA-ABD	F	L	V	K	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	N	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K	
Sequence38-NP-GA-Jp-ABD	F	L	A	R	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	Y	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K	
Sequence1-NP-EG-Jp-ABCCC	F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	N	E	I	E	D	F	Q	K	D	S	K	A	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K	
Sequence101-P-CG-Vit-ABD	F	L	A	K	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	N	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	V	A	F	V	S	K	K	
Sequence64-NP-UD-OCC-ABC	F	L	A	K	N	N	-	A	R	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	D	F	Q	K	N	P	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K	
Sequence81-P-CG-EA-ABD	F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	N	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K	
Sequence150-NP-DA-Sen-BC	F	L	A	Q	N	N	-	A	K	L	D	D	L	S	E	K	E	K	E	K	F	R	T	E	I	K	D	F	Q	K	D	S	K	A	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K	
Sequence90-NP-UD-Vit-ABD	F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	Y	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K	
Sequence136-P-CG-Col-AACC	F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	R	T	E	I	K	D	F	Q	K	D	S	K	P	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K	
Sequence15-NP-UP-Jp-ABD	F	L	V	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	K	N	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K	
Sequence108-NP-UD-Vit-ABD	F	L	A	K	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	N	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	V	A	F	V	S	K	K	
Sequence104-P-CG-OCC-ABCC	F	L	A	Q	N	N	-	A	K	L	E	N	L	S	E	K	E	K	E	K	F	R	T	E	I	K	D	F	Q	K	D	S	K	A	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K	
Sequence179-NP-UD-Col-ABCC	F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	R	N	E	I	E	N	F	Q	K	N	S	K	A	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K	
Sequence37-NP-GA-Jp-ABCCC	F	L	A	Q	N	N	-	A	K	L	D	N	L	S	K	K	E	K	E	K	F	Q	N	E	I	E	D	F	Q	K	D	S	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K	
Sequence89-NP-UD-Jp-ABD	F	L	A	R	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	N	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K	
Sequence92-P-CG-Vit-ABD	F	L	A	K	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	A	E	I	E	N	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K	
Sequence49-NP-GA-Jp-ABC	F	L	A	Q	N	N	-	A	K	L	D	N	L	S	K	K	E	K	E	K	F	Q	N	E	I	E	D	F	Q	K	D	S	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K	
Sequence181-P-CG-Col-ABCC	F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	R	N	E	I	K	D	F	Q	K	D	S	K	P	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K	
Sequence25-NP-GA-Jp-ABD	F	L	A	K	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	N	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K	
Sequence4-P-CG-Jp-ABD	F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	N	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K	
Sequence121-NP-G-Jp-ABCC	F	L	A	Q	N	N	-	A	K	L	D	D	L	S	E	K	E	K	E	K	F	R	N	E	I	K	D	F	Q	K	D	S	K	A	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K	
4dvy	F	L	A	Q	N	N	-	T	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	N	E	I	E	D	F	Q	K	D	S	K	A	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K	
Sequence186-NP-UP-Jp-ABD	F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	A	E	I	E	N	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K	
Sequence62-NP-UD-OCC-ABD	F	L	A	K	N	N	-	A	R	L	D	N	L	S	K	K	E	K	E	K	F	Q	N	E	I	E	D	F	Q	K	D	S	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K	
Sequence9-NP-GCA-Jp-ABD	F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	N	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K	
Sequence12-NP-UP-Jp-ABD	F	L	A	K	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	N	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K	
Sequence35-NP-GA-Jp-ABABD	F	L	A	K	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	N	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K	
Sequence54-NP-GA-OCC-ABC	F	L	A	Q	N	N	-	A	K	L	D	N	L	S	K	K	E	K	E	K	F	Q	N	E	I	E	D	F	Q	K	D	S	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K	
Sequence109-P-CG-Jp-ABD	F	L	A	K	N	N	-	A	K	L	D	N	L	S	E	E	E	K	E	K	F	Q	T	E	I	G	N	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	V	A	F	V	S	K	K	
Sequence96-NP-UD-Vit-ABD	F	L	A	R	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	G	N	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	V	A	F	V	S	K	K	
Sequence80-P-CG-EA-ABD	F	L	A	K	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	D	F	Q	K	N	R	K	A	Y	L	D	A	L	G	N	D	R	V	A	F	V	S	K	K	
Sequence82-P-CG-EA-ABD	F	L	A	K	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	N	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K	
Sequence10-NP-GCA-Jp-ABD	F	L	A	K	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	N	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K	
Sequence19-NP-UP-Jp-ABBD	F	L	V	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	N	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K	
Sequence115-NP-UG-Jp-ABC	F	L	A	Q	N	N	-	A	K	L	D	N	L	S	V	K	E	K	E	K	F	K	N	E	I	K	D	F	Q	K	D	S	K	P	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K	
Sequence45-NP-GA-Jp-ABCC	F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	R	T	E	I	K	D	F	Q	K	D	S	K	A	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K	
Sequence119-NP-UG-Jp-ABC	F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	R	T	E	I	K	D	F	Q	K	D	S	K	A	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K	
Sequence70-NP-GA-Ch-ABD	F	L	A	K	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	T	F	Q	T	E	I	E	N	F	Q	K	D	R	K	A	Y	L	D	A	L	G	S	D	H	I	A	F	V	S	K	K	
Sequence52-NP-UD-EA-ABD	F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	Y	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K	
Sequence97-P-CG-Vit-ABD	F																																																		

Sequence77-P-CG-OCC-ABCC  
Sequence113-NP-UG-Jp-ABC  
Sequence88-NP-UD-Vit-ABD  
Sequence100-NP-UD-Vit-ABD  
Sequence137-NP-G-Jp-ABCC  
Sequence117-NP-G-Jp-ABC  
Sequence171-NP-UD-Col-ABCC  
Sequence180-P-CG-Col-ABC  
Sequence112-P-CG-Jp-ABCC  
Sequence127-NP-UD-Jp-ABC  
Sequence51-NP-GA-OCC-ABC  
Sequence73-P-CG-EA-ABD  
Sequence183-NP-UD-Col-ABD  
Sequence34-NP-UD-Jp-ABDD  
Sequence21-P-CG-Jp-ABD  
Sequence32-NP-GA-Jp-ABD  
Sequence116-NP-G-Jp-ABC  
Sequence8-NP-GCA-Jp-ABD  
Sequence83-P-CG-EA-ABD  
Sequence48-NP-UD-OCC-ABC  
Sequence120-NP-G-Jp-ABC  
Sequence187-NP-UG-Jp-ABCCC  
Sequence118-NP-G-Jp-ABD  
Sequence87-NP-UG-Vit-ABD

F	L	A	K	N	N	-	A	R	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	D	F	Q	K	N	P	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K
F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	R	T	E	I	K	D	F	Q	K	D	S	K	A	Y	L	D	T	L	G	N	D	R	I	A	F	V	S	K	K
F	L	A	K	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	Y	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	V	A	F	V	S	K	K
F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	Y	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K
F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	R	N	E	I	K	D	F	Q	K	D	S	K	A	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K
F	L	A	Q	N	N	-	A	K	L	D	N	S	S	E	K	E	K	E	K	F	Q	T	E	I	G	N	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K
F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	R	T	E	I	K	D	F	Q	K	D	S	K	P	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K
F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	R	N	E	I	K	D	F	Q	K	D	S	K	A	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K
F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	R	T	E	I	K	D	F	Q	K	D	P	K	A	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K
F	L	A	K	N	N	-	A	R	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	D	F	Q	K	N	P	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K
F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	N	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K
F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	R	N	E	I	K	D	F	Q	K	D	S	K	A	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K
F	L	A	R	N	N	-	A	K	L	D	N	L	S	K	K	E	K	E	K	F	Q	T	E	I	E	N	F	Q	K	N	P	K	A	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K
F	L	A	K	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	G	N	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K
F	L	A	K	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	G	N	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K
F	L	A	Q	N	N	-	A	K	L	D	N	L	S	V	K	E	K	E	K	F	K	N	E	I	K	D	F	Q	K	D	S	K	P	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K
F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	I	R	K	F	P	S	E	I	E	N	F	Q	K	N	P	K	A	Y	L	D	A	L	G	N	D	H	I	V	F	V	S	K	K
F	L	A	K	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	K	I	E	N	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K
F	L	A	Q	N	N	-	A	K	L	D	N	L	S	K	K	E	K	E	K	F	Q	N	E	I	E	D	F	Q	K	D	S	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K
F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	R	N	E	I	K	D	F	Q	K	D	S	K	A	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K
F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	N	E	I	E	D	F	Q	K	D	S	K	A	Y	L	D	A	L	G	N	D	R	I	A	F	V	S	K	K
F	L	A	Q	N	N	-	A	K	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	K	N	F	Q	K	D	P	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K
F	L	A	Q	N	N	-	A	E	L	D	N	L	S	E	K	E	K	E	K	F	Q	T	E	I	E	N	F	Q	K	D	R	K	A	Y	L	D	A	L	G	N	D	H	I	A	F	V	S	K	K

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Sequence140-NP-GA-Col-ABABC  
Sequence123-NP-UD-Jp-ABD  
Sequence111-NP-G-Jp-ABD  
Sequence57-NP-GA-OCC-AB  
Sequence172-P-CG-Col-ABCC  
Sequence110-NP-UD-Jp-ABD  
Sequence95-NP-UD-Vit-ABD  
Sequence107-P-CG-Vit-ABD  
Sequence106-P-CG-Vit-ABD  
Sequence105-NP-UD-Vit-ABD  
Sequence126-NP-UG-Jp-ABC  
Sequence135-P-CG-Col-ABCCC  
Sequence138-NP-GA-Col-ABC  
Sequence13-NP-UP-Jp-ABD  
Sequence11-NP-UP-Jp-ABD  
Sequence50-NP-GA-OCC-ABC  
Sequence26-NP-GA-Jp-ABD  
Sequence55-NP-UD-OCC-ABCCC  
Sequence178-NP-M-Col-ABCC  
Sequence40-NP-GA-Jp-ABD  
Sequence43-NP-GA-Jp-ABD  
Sequence139-NP-UD-Col-ABCC  
Sequence7-P-CG-Jp-ABBD  
Sequence91-P-CG-Vit-ABD  
Sequence29-NP-GA-Jp-ABABD  
Sequence78-P-CG-EA-ABD  
Sequence188-NP-GCA-Jp-AB  
Sequence72-P-CG-EA-ABD  
Sequence79-P-CG-EA-ABD  
Sequence61-NP-UD-OCC-ABC  
Sequence125-NP-UG-Jp-ABCC  
Sequence175-NP-G-Col-ABCC  
Sequence122-NP-G-Jp-ABCC  
Sequence36-NP-GA-Jp-ABD  
Sequence58-NP-UD-OCC-ABC

D	T	K	-	-	-	-	H	S	A	L	I	T	E	F	G	K	G	D	L	S	Y	T	L	K	D	Y	G	K	K	A	D	K	A	L	D	R	E	K	N	V	T	L	Q	-	-	G	N	L	K
D	P	K	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	L	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	T	K	T	T	L	Q	-	-	G	N	L	K
D	P	K	K	-	-	-	H	L	A	L	V	A	E	F	G	N	G	E	L	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	T	K	T	T	L	Q	-	-	G	N	L	K
D	P	K	K	-	-	-	H	S	A	L	I	T	E	F	G	K	G	D	L	S	Y	T	L	K	D	Y	G	K	K	A	D	K	A	L	D	R	E	K	N	V	T	L	Q	-	-	G	N	L	K
D	P	K	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	T	K	T	T	L	Q	-	-	G	S	L	K
D	P	K	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	V	K	T	T	L	Q	-	-	G	S	L	K
D	T	K	K	-	-	-	H	S	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	A	D	K	A	L	D	R	E	K	N	A	T	L	Q	-	-	G	S	L	K
D	P	K	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	F	D	G	E	T	K	T	T	L	Q	-	-	G	S	L	K
D	P	K	K	-	-	-	H	S	A	L	I	T	E	F	G	K	G	D	L	S	Y	T	L	K	D	Y	G	K	K	A	D	K	A	L	D	R	E	K	N	V	T	L	Q	-	-	G	N	L	K
D	T	K	K	-	-	-	H	S	A	L	I	T	E	F	G	K	G	D	L	S	Y	T	L	K	D	Y	G	K	K	A	D	K	A	L	D	R	E	K	N	L	T	L	Q	-	-	G	S	L	K
D	P	K	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	T	K	T	T	L	Q	-	-	G	S	L	K
D	P	K	K	-	-	-	H	L	A	L	V	A	E	F	G	N	G	E	L	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	R	E	T	K	T	T	L	Q	-	-	G	N	L	K
D	P	K	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	I	K	T	T	L	Q	-	-	G	S	L	K
D	P	K	K	-	-	-	H	L	A	L	V	A	E	F	G	N	G	E	L	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	R	E	T	K	T	T	L	Q	-	-	G	N	L	K
D	K	K	K	-	-	-	H	L	A	L	V	A	E	F	G	N	G	E	L	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	R	E	T	K	T	T	L	Q	-	-	G	N	L	K
D	P	K	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	V	K	T	T	L	Q	-	-	G	S	L	K
D	P	K	K	-	-	-	H	L	A	L	V	A	E	F	G	N	G	E	L	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	R	E	T	K	T	T	L	Q	-	-	G	N	L	K
D	P	K	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	R	E	K	N	V	T	L	Q	-	-	G	S	L	K
D	P	K	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	L	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	T	K	T	T	L	Q	-	-	G	S	L	K
D	P	K	K	-	-	-	H	L	A	L	V	A	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	T	K	T	T	L	Q	-	-	G	S	L	K
D	P	K	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	R	E	T	K	T	T	L	Q	-	-	G	N	L	K
D	P	K	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	L	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	R	E	K	N	V	T	L	Q	-	-	G	S	L	K
D	P	K	K	-	-	-	H	L	A	L	V	A	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	T	K	T	T	L	Q	-	-	G	N	L	K
D	P	K	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	R	E	T	K	T	T	L	Q	-	-	G	S	L	K
D	P	K	K	-	-	-	H	L	A	L	V	A	E	F	G	N	G	E	L	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	R	E	T	K	T	T	L	Q	-	-	G	N	L	K
D	P	K	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	T	K	T	T	L	Q	-	-	G	S	L	K
D	P	K	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	R	E	T	K	T	T	L	Q	-	-	G	N	L	K
D	P	K	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	L	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	R	E	K	N	V	T	L	Q	-	-	G	S	L	K
D	P	K	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	R	E	K	N	V	T	L	Q	-	-	G	N	L	K
D	P	K	K	-	-	-	H	S	A	L	I	T	E	F	G	K	G	D	L	S	Y	T	L	K	D	Y	G	K	K	A	D	K	A	L	D	R	E	K	N	V	T	L	Q	-	-	G	N	L	K
D	P	K	K	-	-	-	H	S	A	L	I	T	E	F	G	N	G	E	L	S	Y	T	L	K	D	Y	G	K	K	A	D	K	A	L	D	R	E	K	N	V	T	L	Q	-	-	G	N	L	K
D	P	K	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	R	E	T	K	T	T	L	Q	-	-	G	S	L	K
D	T	K	K	-	-	-	H	S	A	L	I	T	E	F	G	N	G	E	L	S	Y	T	L	K	D	Y	G	K	K	A	D	K	A	L	D	R	E	K	N	V	T	L	Q	-	-	G	S	L	K
D	P	K	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	T	K	T	T	L	Q	-	-	G	S	L	K
D	P	K	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	R	E	T	K	T	T	L	Q	-	-	G	S	L	K
D	P	K	K	-	-	-	H	S	A	L	T	T	E	F	N	K	G	D	L	S	Y	T	L	K	D	Y	G	K	K	A	D	K	A	L	D	R	E	K	N	V	T	L	Q	-	-	G	S	L	K
D	P	K	K	-	-	-	H	S	A	L	I	T	E	F	N	K	G	D	L	S	Y	T	L	K	D	Y	G	K	K	A	D	K	A	L	D	R	E	K	N	V	T	L	Q	-	-	G	N	L	K
D	P	K	K	-	-	-	H	S	A	L	I	T	E	F	G	K	G	D	L	S	Y	T	L	K	D	Y	G	K	K	A	D	K	A	L	D	R	E	K	N	V	T	L	Q	-	-	G	N	L	K
D	P	K	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	L	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	R	E	T	K	T	T	L	Q	-	-	G	N	L	K



Sequence27-NP-GA-Jp-ABBD	D	P	K	-	-	-	H	L	A	L	V	T	E	F	G	N	E	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	T	K	T	T	L	Q	-	-	G	S	L	K
Sequence93-P-CG-Vit-ABD	D	N	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	V	K	T	T	L	Q	-	-	G	N	L	K
Sequence177-NP-M-Col-ABCC	D	T	K	-	-	-	H	S	A	L	I	T	E	F	N	K	G	D	L	S	Y	T	L	K	D	Y	G	K	K	A	D	K	A	L	D	R	E	K	N	V	T	L	Q	-	-	G	N	L	K
Sequence182-NP-UD-Col-ABCC	D	P	K	-	-	-	H	S	A	L	I	T	E	F	G	K	G	D	L	S	Y	T	L	K	D	Y	G	K	K	A	D	K	A	L	D	R	E	K	N	V	T	L	Q	-	-	G	N	L	K
Sequence114-NP-UG-Jp-ABC	D	P	K	-	-	-	H	S	A	L	I	T	E	F	G	N	G	D	L	S	Y	T	L	K	D	Y	G	K	K	A	D	K	A	L	D	R	E	K	N	V	T	L	Q	-	-	G	S	L	K
Sequence74-P-CG-EA-ABD	D	P	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	T	K	T	T	L	Q	-	-	G	S	L	K
Sequence20-P-CG-Jp-ABD	D	P	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	T	K	T	T	L	Q	-	-	G	N	L	K
Sequence14-NP-GCA-Jp-ABD	D	P	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	T	K	T	T	L	Q	-	-	G	S	L	K
Sequence39-NP-GA-Jp-ABC	D	P	K	-	-	-	H	S	A	L	I	T	E	F	N	K	G	D	L	S	Y	T	L	K	D	Y	G	K	K	A	D	K	A	L	D	R	E	K	N	V	T	L	Q	-	-	G	N	L	K
Sequence170-NP-UD-Col-ABCC	D	T	K	-	-	-	H	S	A	L	I	T	E	F	G	N	G	N	L	S	Y	T	L	K	D	Y	G	K	K	A	D	K	A	L	D	R	E	K	N	V	T	L	Q	-	-	G	N	L	K
Sequence76-P-CG-EA-ABD	D	P	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	T	K	T	T	L	Q	-	-	G	S	L	K
Sequence53-NP-GA-EA-ABD	D	P	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	T	K	T	T	L	Q	-	-	G	S	L	K
Sequence174-P-CG-Jp-ABCC	D	T	K	-	-	-	H	S	A	L	I	T	E	F	G	K	G	D	L	S	Y	T	L	K	D	Y	G	K	K	A	D	K	A	L	D	R	E	K	N	V	T	L	Q	-	-	G	N	L	K
Sequence33-NP-UG-Jp-ABD	D	P	K	-	-	-	H	S	A	L	I	T	E	F	G	N	G	D	L	S	Y	T	L	K	D	Y	G	K	K	A	D	K	A	L	D	R	E	K	N	V	T	L	Q	-	-	G	N	L	K
Sequence60-NP-GA-EA-ABD	D	P	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	L	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	T	K	T	T	L	Q	-	-	G	S	L	K
Sequence38-NP-GA-Jp-ABD	D	P	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	T	K	T	T	L	Q	-	-	G	S	L	K
Sequence1-NP-EG-Jp-ABCCC	D	P	K	-	-	-	H	P	A	L	I	T	E	F	G	K	G	D	L	S	Y	T	L	K	V	M	G	K	K	Q	T	E	A	L	D	R	E	K	N	V	T	L	Q	-	-	G	N	L	K
Sequence101-P-CG-Vit-ABD	D	P	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	V	K	T	T	L	Q	-	-	G	S	L	K
Sequence64-NP-UD-OCC-ABC	D	K	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	L	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	R	E	T	K	T	T	L	Q	-	-	G	N	L	K
Sequence81-P-CG-EA-ABD	D	P	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	T	K	T	T	L	Q	-	-	G	N	L	K
Sequence150-NP-DA-Sen-BC	D	P	K	-	-	-	H	S	A	L	I	T	E	F	G	N	G	D	L	S	Y	T	L	K	D	Y	G	K	K	A	D	K	A	L	D	R	E	K	N	V	T	L	Q	-	-	G	S	L	K
Sequence90-NP-UD-Vit-ABD	D	N	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	V	K	P	L	F	R	-	-	-	V	P	K
Sequence136-P-CG-Col-AACC	D	T	K	-	-	-	H	S	A	L	I	T	E	F	N	K	G	D	L	S	Y	T	L	K	D	Y	G	K	K	A	D	K	A	L	D	R	E	K	N	V	T	L	Q	-	-	G	S	L	K
Sequence15-NP-UP-Jp-ABD	D	P	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	R	A	L	D	G	E	T	K	T	T	L	Q	-	-	G	S	L	K
Sequence108-NP-UD-Vit-ABD	D	Q	K	-	-	-	H	L	A	L	I	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	L	L	D	G	E	V	K	T	T	L	Q	-	-	G	S	L	K
Sequence104-P-CG-OCC-ABCC	D	T	K	-	-	-	H	S	A	L	I	T	E	F	G	N	G	D	L	S	Y	T	L	Q	D	Y	G	K	K	A	D	K	A	L	D	R	G	E	N	V	T	L	Q	-	-	G	N	L	K
Sequence179-NP-UD-Col-ABCC	D	T	K	-	-	-	H	S	A	L	I	T	E	F	N	K	G	D	L	S	Y	T	L	K	D	Y	G	K	K	A	D	K	A	L	D	R	E	K	N	V	T	L	Q	-	-	G	N	L	K
Sequence37-NP-GA-Jp-ABCCC	D	K	K	-	-	-	H	L	A	L	V	A	E	F	G	N	G	E	L	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	R	E	T	K	T	T	L	Q	-	-	G	N	L	K
Sequence89-NP-UD-Vit-ABD	D	P	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	V	K	T	T	L	Q	-	-	G	N	L	K
Sequence92-P-CG-Vit-ABD	D	P	K	-	-	-	H	L	A	L	V	T	E	F	S	N	G	E	L	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	T	K	T	T	L	Q	-	-	G	N	L	K
Sequence49-NP-GA-Jp-ABC	D	K	K	-	-	-	H	L	A	L	V	A	E	F	G	N	G	E	L	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	R	E	T	K	T	T	L	Q	-	-	G	N	L	K
Sequence181-P-CG-Col-ABCC	D	T	K	-	-	-	H	S	A	L	I	T	E	F	N	K	G	D	L	S	Y	T	L	K	D	Y	G	K	K	A	D	K	A	L	D	R	E	K	N	V	T	L	Q	-	-	G	S	L	K
Sequence25-NP-GA-Jp-ABD	D	P	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	T	K	T	T	L	Q	-	-	G	S	L	K
Sequence4-P-CG-Jp-ABD	D	P	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	L	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	T	K	T	T	L	Q	-	-	G	S	L	K
Sequence121-NP-G-Jp-ABCC	D	T	K	-	-	-	H	S	A	L	I	T	E	F	G	N	G	D	L	S	Y	T	L	K	D	Y	G	K	K	A	D	K	A	L	D	R	E	K	N	V	T	L	Q	-	-	G	N	L	K
4dvy	D	T	K	-	-	-	H	S	A	L	I	T	E	F	N	N	G	D	L	S	Y	T	L	K	D	Y	G	K	K	A	D	K	A	L	D	R	E	K	N	V	T	L	Q	-	-	G	S	L	K
Sequence186-NP-UP-Jp-ABD	D	P	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	T	K	T	T	L	Q	-	-	G	S	L	K
Sequence62-NP-UD-OCC-ABD	D	K	K	-	-	-	H	L	A	L	V	A	E	F	C	N	G	E	L	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	R	E	T	K	T	T	L	Q	-	-	G	N	L	K
Sequence9-NP-GCA-Jp-ABD	G	P	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	L	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	R	E	T	K	T	T	L	Q	-	-	G	N	L	K
Sequence12-NP-UP-Jp-ABD	D	L	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	T	K	T	T	L	Q	-	-	G	S	L	K
Sequence35-NP-GA-Jp-ABABD	D	P	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	T	K	T	T	L	Q	-	-	G	S	L	K
Sequence54-NP-GA-Jp-ABC	D	K	K	-	-	-	H	L	A	L	V	A	E	F	G	N	G	E	L	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	R	E	T	K	T	T	L	Q	-	-	G	N	L	K
Sequence109-P-CG-Jp-ABD	D	P	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	T	K	T	T	L	Q	-	-	G	N	L	K
Sequence96-NP-UD-Vit-ABD	D	P	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	N	A	D	K	A	L	D	G	E	T	K	T	T	L	Q	-	-	G	S	L	N
Sequence80-P-CG-EA-ABD	D	P	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	T	K	T	T	L	Q	-	-	G	S	L	K
Sequence82-P-CG-EA-ABD	D	P	K	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	T	K	T	T	L	Q	-	-				

Sequence102-NP-UG-Vit-ABD  
Sequence71-P-CG-EA-ABD  
Sequence30-NP-GA-Jp-ABBD  
Sequence28-NP-GA-Jp-AABD  
Sequence98-P-CG-Vit-AD  
Sequence99-P-CG-Vit-ABD  
Sequence24-NP-UD-USA-ABD  
Sequence124-NP-G-Jp-ABC  
Sequence77-P-CG-OCC-ABCC  
Sequence113-NP-UG-Jp-ABC  
Sequence88-NP-UD-Vit-ABD  
Sequence100-NP-UD-Vit-ABD  
Sequence137-NP-G-Col-ABCC  
Sequence117-NP-G-Jp-ABC  
Sequence171-NP-UD-Col-ABCC  
Sequence180-P-CG-Col-ABC  
Sequence112-P-CG-Jp-ABCC  
Sequence127-NP-UD-Jp-ABC  
Sequence51-NP-GA-OCC-ABC  
Sequence73-P-CG-EA-ABD  
Sequence183-NP-UD-Col-ABD  
Sequence34-NP-UD-Jp-ABDD  
Sequence21-P-CG-Jp-ABD  
Sequence32-NP-GA-Jp-ABD  
Sequence116-NP-UD-Jp-ABC  
Sequence8-NP-GCA-Jp-ABD  
Sequence83-P-CG-EA-ABD  
Sequence48-NP-UD-OCC-ABC  
Sequence120-NP-G-Jp-ABC  
Sequence187-NP-UG-Jp-ABCCC  
Sequence118-NP-G-Jp-ABD  
Sequence87-NP-UG-Vit-ABD

D	P	K	-	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	V	K	T	T	L	Q	-	-	G	S	L	K
D	P	K	-	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	T	K	T	T	L	Q	-	-	G	S	L	K
D	P	K	-	-	-	-	H	L	A	L	V	T	E	F	S	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	T	K	T	T	L	Q	-	-	G	S	L	K
D	P	K	-	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	T	K	T	T	L	Q	-	-	G	S	L	K
D	N	K	-	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	I	M	G	K	N	K	I	K	L	S	D	G	G	G	K	N	H	S	S	-	-	R	L	P	K
D	N	K	-	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	V	K	T	T	L	Q	-	-	G	N	L	K
D	P	K	-	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	Q	D	Y	G	K	N	K	I	K	P	L	D	G	E	V	K	T	T	L	Q	-	-	G	S	L	K
D	P	K	-	-	-	-	H	S	A	L	I	T	E	F	G	K	G	D	L	S	Y	T	L	K	D	Y	G	K	K	A	D	K	A	L	D	R	E	K	N	V	T	L	Q	-	-	G	N	L	K
D	K	K	-	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	L	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	R	E	T	K	T	T	L	Q	-	-	G	N	L	K
D	P	K	-	-	-	-	H	S	A	L	I	T	E	F	G	N	G	D	L	S	Y	T	L	K	D	Y	G	K	K	A	D	K	A	L	D	R	E	K	N	V	T	L	Q	-	-	G	S	L	K
D	Q	K	-	-	-	-	H	L	A	L	V	T	E	F	G	N	G	G	S	E	L	H	S	Q	R	L	W	E	K	Q	D	K	A	L	D	G	E	V	K	T	T	L	Q	-	-	G	S	L	K
D	P	K	-	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	V	K	T	T	L	Q	-	-	G	N	L	E
D	P	K	-	-	-	-	H	S	A	L	I	T	E	F	G	K	G	D	L	S	Y	T	L	K	D	Y	G	K	K	A	D	K	A	L	D	R	E	K	N	V	T	L	Q	-	-	G	N	L	K
D	P	K	-	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	A	D	K	A	L	D	R	E	K	N	V	T	L	Q	-	-	G	S	L	K
D	T	K	-	-	-	-	H	S	A	L	I	T	E	F	G	K	G	D	L	S	Y	T	L	K	D	Y	G	K	K	A	D	K	A	L	D	R	E	K	N	L	T	L	Q	-	-	G	N	L	K
D	T	K	-	-	-	-	H	S	A	L	I	T	E	F	G	K	G	D	L	S	Y	T	L	K	D	Y	G	K	K	A	D	K	A	L	D	R	E	K	N	V	T	L	Q	-	-	G	N	L	K
D	T	K	-	-	-	-	H	S	A	L	I	T	E	F	G	N	G	D	L	S	Y	T	L	K	D	Y	G	K	K	A	D	K	A	L	D	R	E	K	N	V	T	L	Q	-	-	G	S	L	K
D	T	K	-	-	-	-	H	L	A	L	I	T	E	F	G	N	G	D	L	S	Y	T	L	K	D	Y	G	K	K	A	D	K	A	L	D	G	E	K	N	V	T	L	Q	-	-	G	S	L	K
D	K	K	-	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	L	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	R	E	T	K	T	T	L	Q	-	-	G	N	L	K
D	P	K	-	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	T	K	T	T	L	Q	-	-	G	S	L	K
D	P	K	-	-	-	-	H	S	A	L	I	T	E	F	G	K	G	D	L	S	Y	T	L	K	D	Y	G	K	K	A	D	K	A	L	D	R	E	K	N	V	T	L	Q	-	-	G	N	L	K
D	P	K	-	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	T	K	T	T	L	Q	-	-	G	N	L	K
D	P	K	-	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	T	K	T	T	L	Q	-	-	G	S	L	K
D	P	K	-	-	-	-	H	S	A	L	I	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	R	E	K	N	V	T	L	Q	-	-	G	N	L	K
D	P	K	-	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	T	K	T	T	L	Q	-	-	G	S	L	K
D	K	K	-	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	G	E	T	K	T	T	L	Q	-	-	G	N	L	K
D	P	K	-	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	K	K	Q	D	K	A	L	D	R	E	T	K	T	T	L	Q	-	-	G	N	L	K
D	P	K	-	-	-	-	H	S	A	L	I	T	E	F	G	N	G	D	L	S	Y	T	L	K	D	Y	G	K	K	A	D	K	A	L	D	R	E	K	N	V	T	L	Q	-	-	G	N	L	K
D	P	K	-	-	-	-	H	S	A	L	I	T	E	F	G	K	G	D	L	S	Y	T	L	K	D	Y	G	K	K	A	D	R	A	L	D	R	E	K	N	V	T	L	Q	-	-	G	N	L	K
D	P	K	-	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	K	D	Y	G	T	S	Q	D	K	A	L	D	G	E	T	K	T	T	L	Q	-	-	G	S	L	K
D	P	K	-	-	-	-	H	L	A	L	V	T	E	F	G	N	G	E	V	S	Y	T	L	Q	D	Y	G	K	K	Q	D	K	A	L	D	G	E	V	K	T	T	L	Q	-	-	G	S	L	N

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Sequence140-NP-GA-Col-ABABC  
Sequence123-NP-UD-Jp-ABD  
Sequence111-NP-G-Jp-ABD  
Sequence57-NP-GA-OCC-AB  
Sequence172-P-CG-Col-ABCC  
Sequence110-NP-UD-Jp-ABD  
Sequence95-NP-UD-Vit-ABD  
Sequence107-P-CG-Vit-ABD  
Sequence106-P-CG-Vit-ABD  
Sequence105-NP-UD-Vit-ABD  
Sequence126-NP-UG-Jp-ABC  
Sequence135-P-CG-Col-ABCCC  
Sequence138-NP-GA-Col-ABC  
Sequence13-NP-UP-Jp-ABD  
Sequence11-NP-UP-Jp-ABD  
Sequence50-NP-GA-OCC-ABC  
Sequence26-NP-GA-Jp-ABD  
Sequence55-NP-UD-OCC-ABCCC  
Sequence178-NP-M-Col-ABCC  
Sequence40-NP-GA-Jp-ABD  
Sequence43-NP-GA-Jp-ABD  
Sequence139-NP-UD-Col-ABCC  
Sequence7-P-CG-Jp-ABBD  
Sequence91-P-CG-Vit-ABD  
Sequence29-NP-GA-Jp-ABABD  
Sequence78-P-CG-EA-ABD  
Sequence188-NP-GCA-Jp-AB

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Sequence72-P-CG-EA-ABD	Y	D	G	V	-	M	F	V	N	Y	S	N	F	K	Y	T	-	D	A	S	K	S	P	N	K	G	L	G	A	T	N	G	-	V	S	H	L	E	A	N	-	F	S	K	V	A	V	F	-	N
Sequence79-P-CG-EA-ABD	Y	D	G	V	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	N	K	G	L	G	T	T	N	G	-	V	S	H	L	E	A	N	-	F	S	K	V	A	V	F	-	N
Sequence61-NP-UD-OCC-ABC	H	D	G	V	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	V	S	K	S	P	N	K	G	L	G	T	T	N	G	-	V	S	H	L	E	A	N	-	F	S	K	V	A	V	F	-	N
Sequence125-NP-UG-Jp-ABCC	H	D	G	V	-	M	F	V	D	Y	S	N	F	K	Y	T	-	N	A	S	K	N	P	N	K	G	V	G	T	T	N	G	-	V	S	H	L	E	A	G	-	F	S	K	V	A	V	F	-	N
Sequence175-NP-G-Col-ABCC	H	D	G	V	-	M	F	V	D	Y	S	N	F	K	Y	T	-	N	A	S	K	N	P	N	K	G	V	G	V	T	N	G	-	V	S	H	L	E	A	G	-	F	N	K	V	A	V	F	-	N
Sequence122-NP-G-Jp-ABCC	H	D	G	V	-	M	F	V	D	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	N	K	G	V	G	T	T	N	G	-	V	S	H	L	E	A	G	-	F	S	K	V	A	V	F	-	N
Sequence36-NP-GA-Jp-ABD	Y	D	G	V	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	N	K	G	L	G	A	T	N	G	-	V	S	H	L	E	A	N	-	F	S	K	V	A	V	F	-	N
Sequence58-NP-UD-OCC-ABC	H	D	G	V	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	D	K	G	V	G	A	T	N	G	-	V	S	H	L	E	A	N	-	L	S	K	V	A	V	F	-	N
Sequence27-NP-GA-Jp-ABBD	Y	D	G	V	-	M	F	V	D	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	N	K	G	L	G	A	T	N	G	-	V	S	H	L	E	A	N	-	F	S	K	V	A	V	F	-	N
Sequence93-P-CG-Vit-ABD	Y	D	G	V	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	D	K	G	V	S	A	T	N	G	-	V	S	H	L	E	A	N	-	F	S	K	V	A	V	F	-	N
Sequence177-NP-M-Col-ABCC	H	D	G	V	-	M	F	V	D	Y	S	N	F	K	Y	T	-	N	A	S	K	N	P	N	K	G	V	G	A	T	N	G	-	V	S	H	L	E	A	G	-	F	N	K	V	A	V	F	-	N
Sequence182-NP-UD-Col-ABCC	H	D	G	V	-	M	F	V	D	Y	S	N	F	K	Y	T	-	N	A	S	K	N	P	N	K	G	V	G	V	T	N	G	-	V	S	H	L	E	A	G	-	F	S	K	V	A	V	F	-	N
Sequence114-NP-GA-Jp-ABC	H	D	G	V	-	M	F	V	D	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	N	K	G	V	G	V	T	N	G	-	V	S	H	L	E	A	G	-	F	N	K	V	A	V	F	-	N
Sequence74-P-CG-EA-ABD	Y	D	G	V	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	N	K	G	L	G	T	T	N	G	-	V	S	H	L	E	A	N	-	F	S	K	V	A	V	F	-	N
Sequence20-P-CG-Jp-ABD	Y	D	G	V	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	D	K	G	V	G	A	T	N	G	-	V	S	H	L	E	A	N	-	F	S	K	V	A	V	F	-	N
Sequence14-NP-GCA-Jp-ABD	Y	D	G	V	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	D	K	G	V	G	A	T	N	G	-	V	S	H	L	E	A	N	-	F	S	K	V	A	V	F	-	N
Sequence39-NP-GA-Jp-ABC	H	D	G	V	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	N	K	G	V	G	V	T	N	G	-	V	S	H	L	E	A	G	-	F	S	K	V	A	V	F	-	N
Sequence170-NP-UD-Col-ABCC	H	D	G	V	-	M	F	V	D	Y	S	N	F	K	Y	T	-	N	A	S	K	N	P	N	K	G	V	G	A	T	N	G	-	V	S	H	L	E	A	G	-	F	N	K	V	A	V	F	-	N
Sequence76-P-CG-EA-ABD	Y	D	G	V	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	N	K	G	L	G	A	T	N	G	-	V	S	H	L	E	A	N	-	F	S	K	V	A	V	F	-	N
Sequence53-NP-GA-EA-ABD	Y	D	G	V	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	N	K	G	L	G	A	T	N	G	-	V	S	H	L	E	A	N	-	F	S	K	V	A	V	F	-	N
Sequence174-P-CG-Jp-ABCC	H	D	G	V	-	M	F	V	D	Y	S	N	F	K	Y	T	-	N	A	S	K	N	P	N	K	G	V	G	V	T	N	G	-	V	S	H	L	E	A	G	-	F	S	K	V	A	V	F	-	N
Sequence33-NP-UG-Jp-ABD	Y	D	G	V	-	M	F	V	D	Y	S	N	F	K	Y	T	-	N	A	S	K	N	P	N	K	G	V	G	A	T	N	G	-	V	S	H	L	E	A	G	-	F	N	K	V	A	V	F	-	N
Sequence60-NP-GA-EA-ABD	Y	D	G	V	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	N	K	G	L	G	A	T	N	G	-	V	S	H	L	E	A	N	-	F	S	K	V	A	V	F	-	N
Sequence38-NP-GA-Jp-ABD	Y	D	G	V	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	N	K	G	V	G	A	T	N	G	-	V	S	H	L	E	A	N	-	F	S	K	V	A	V	F	-	N
Sequence1-NP-EG-Jp-ABCCC	H	D	S	V	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	D	K	G	V	G	V	T	N	G	-	V	S	H	L	E	A	G	-	F	S	K	V	A	V	F	-	N
Sequence101-P-CG-Vit-ABD	Y	D	G	V	-	M	F	V	D	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	D	K	G	V	S	A	T	N	G	-	V	S	H	L	E	A	N	-	F	S	K	V	A	V	F	-	N
Sequence64-NP-UD-OCC-ABC	H	D	G	V	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	D	K	G	V	G	A	T	N	G	-	V	S	H	L	E	A	N	-	L	S	K	V	A	V	F	-	N
Sequence81-P-CG-EA-ABD	Y	D	G	V	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	D	K	G	V	G	A	T	N	G	-	V	S	H	L	E	A	N	-	F	S	K	V	A	V	F	-	N
Sequence150-NP-DA-Sen-BC	H	D	G	V	-	M	F	V	D	Y	S	N	F	K	Y	T	-	N	A	S	K	N	P	N	K	G	V	G	V	T	N	G	-	V	S	H	L	E	A	G	-	F	D	K	V	A	V	F	-	N
Sequence90-NP-UD-Vit-ABD	Y	D	G	V	-	M	F	V	N	Y	S	N	S	N	T	P	-	T	P	P	R	V	L	I	K	G	V	G	T	T	N	G	-	V	S	H	L	E	A	N	-	F	S	K	V	A	V	F	-	Y
Sequence136-P-CG-Col-AACC	H	D	G	V	-	M	F	V	D	Y	S	N	F	K	Y	T	-	N	A	S	K	N	P	N	K	G	V	G	V	T	N	G	-	V	S	H	L	E	A	G	-	F	S	K	V	A	V	F	-	N
Sequence15-NP-UP-Jp-ABD	Y	D	G	V	-	M	F	V	D	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	D	K	G	V	G	A	T	N	G	-	V	S	H	L	E	A	N	-	F	S	K	V	A	V	F	-	N
Sequence108-NP-UD-Vit-ABD	Y	D	G	M	-	M	F	V	D	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	D	K	G	V	S	A	T	N	G	-	V	S	H	L	E	A	N	-	F	S	K	V	A	V	F	-	N
Sequence104-P-CG-OCC-ABCC	H	D	G	R	G	W	F	V	N	Y	S	Y	F	P	N	T	P	T	A	P	R	V	L	I	R	V	V	G	A	T	N	G	-	V	S	H	L	G	S	K	V	L	T	K	E	A	V	F	-	D
Sequence179-NP-UD-Col-ABCC	H	D	G	V	-	M	F	V	D	Y	S	N	F	K	Y	T	-	N	A	S	K	N	P	N	K	G	V	G	A	T	N	G	-	V	S	H	L	E	A	G	-	F	D	K	V	A	I	F	-	N
Sequence37-NP-GA-Jp-ABCCC	H	D	G	V	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	D	K	G	V	G	A	T	N	G	-	C	F	P	L	E	A	N	-	L	S	K	V	A	V	F	-	N
Sequence89-NP-UD-Vit-ABD	Y	D	G	V	-	M	F	V	D	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	D	K	G	V	G	A	T	N	G	-	V	S	H	L	E	A	N	-	F	S	K	V	A	V	F	-	N
Sequence92-P-CG-Vit-ABD	Y	D	G	V	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	D	K	G	L	G	A	T	N	G	-	V	S	H	L	E	A	N	-	F	S	K	V	A	V	F	-	N
Sequence49-NP-GA-Jp-ABC	H	D	G	V	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	D	K	G	V	G	A	T	N	G	-	V	S	H	L	E	A	N	-	L	S	K	V	A	V	F	-	N
Sequence181-P-CG-Col-ABCC	H	D	G	V	-	M	F	V	D	Y	S	N	F	K	Y	T	-	N	A	S	K	N	P	N	K	G	V	G	A	T	N	G	-	V	S	H	L	E	A	G	-	F	S	K	V	A	V	F	-	N
Sequence25-NP-GA-Jp-ABD	Y	D	G	V	-	M	F	V	D	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	N	K	G	L	G	A	T	N	G	-	V	S	H	L	E	V	N	-	F	S	K	V	A	V	F	-	N
Sequence4-P-CG-Jp-ABD	Y	D	G	V	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	N	K	G	L	G	T	T	N	G	-	V	S	H	L	E	A	N	-	F	S	K	V	A	V	F	-	N
Sequence121-NP-G-Jp-ABCC	H	D	G	V	-	M	F	V	D	Y	S	N	F	K	Y	T	-	N	A	S	K	N	P	N	K	G	V	G	V	T	N	G	-	V	S	H	L	E	A	G	-	F	N	K	M	A	V	F	-	N
4dvy	H	D	G	V	-	M	F	V	D	Y	S	N	F	K	Y	T	-	N	A	S	K	N	P	N	K	G	V	G	A	T	N	G	-	V	S	H	L	E	A	G	-	F	N	K	V	A	V	F	-	N
Sequence186-NP-UP-Jp-ABD	Y	D	G	L	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	D	K	G	V	G	A	T	N	G	-	V	S	H	L	E	A	N	-	F	S	K	V	A	V	F	-	N
Sequence62-NP-UD-OCC-ABD	H	D	G	V	-	M	F	V	N	Y	S																																							



Sequence97-P-CG-Vit-ABD  
Sequence94-NP-UD-Vit-ABD  
Sequence176-NP-GA-Col-ABCC  
Sequence68-NP-D-Am-ABBC  
Sequence47-NP-GA-Jp-ABD  
Sequence56-NP-UD-OCC-ABC  
Sequence31-NP-GA-Jp-ABD  
Sequence46-NP-UD-Jp-ABD  
Sequence102-NP-UG-Vit-ABD  
Sequence71-P-CG-EA-ABD  
Sequence30-NP-GA-Jp-ABBD  
Sequence28-NP-GA-Jp-AABD  
Sequence98-P-CG-Vit-AD  
Sequence99-P-CG-Vit-ABD  
Sequence24-NP-UD-USA-ABD  
Sequence124-NP-G-Jp-ABC  
Sequence77-P-CG-OCC-ABCC  
Sequence113-NP-UG-Jp-ABC  
Sequence88-NP-UD-Vit-ABD  
Sequence100-NP-UD-Vit-ABD  
Sequence137-NP-UG-Col-ABCC  
Sequence117-NP-G-Jp-ABC  
Sequence171-NP-UD-Col-ABCC  
Sequence180-P-CG-Col-ABC  
Sequence112-P-CG-Jp-ABCC  
Sequence127-NP-UD-Jp-ABC  
Sequence51-NP-GA-OCC-ABC  
Sequence73-P-CG-EA-ABD  
Sequence183-NP-UD-Col-ABD  
Sequence34-NP-UD-Jp-ABDD  
Sequence21-P-CG-Jp-ABD  
Sequence32-NP-GA-Jp-ABD  
Sequence116-NP-UD-Jp-ABC  
Sequence8-NP-GCA-Jp-ABD  
Sequence83-P-CG-EA-ABD  
Sequence48-NP-UD-OCC-ABC  
Sequence120-NP-G-Jp-ABC  
Sequence187-NP-UG-Jp-ABCCC  
Sequence118-NP-G-Jp-ABD  
Sequence87-NP-UG-Vit-ABD

Y	D	G	V	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	D	K	G	L	G	A	T	N	G	-	V	S	H	L	E	A	N	-	F	S	K	V	A	V	F	-	N
A	C	C	L	-	L	I	I	L	I	S	N	T	P	T	P	-	-	-	P	R	V	L	I	R	V	Q	A	L	R	M	A	-	F	P	I	W	K	R	I	-	L	A	R	Q	L	S	F	I	C
H	D	G	V	-	M	F	V	D	Y	S	N	F	K	Y	T	-	N	A	S	K	N	P	N	K	G	V	G	V	T	N	G	-	V	S	H	L	D	A	G	-	F	S	K	V	A	V	F	-	N
H	D	G	V	-	M	F	V	D	Y	S	N	F	K	Y	T	-	N	A	S	K	N	P	N	K	G	V	G	A	T	N	G	-	V	S	H	L	D	A	G	-	F	S	K	V	A	V	F	-	N
Y	D	G	V	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	D	K	G	V	G	A	A	N	G	-	V	S	H	L	E	A	N	-	F	S	K	V	A	V	F	-	N
H	D	G	V	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	D	K	G	V	G	A	T	N	G	-	V	S	H	L	E	A	N	-	L	S	K	V	A	V	F	-	N
Y	D	G	V	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	D	K	G	V	G	A	T	N	G	-	V	S	H	L	E	A	N	-	F	S	K	V	A	V	F	-	N
H	D	G	V	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	V	S	K	S	P	D	K	G	V	G	T	T	N	G	-	V	S	H	L	E	A	N	-	F	S	K	V	A	V	F	-	N
Y	D	G	V	-	M	F	V	D	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	D	K	G	V	S	A	T	N	G	-	V	S	H	L	E	A	I	-	L	A	K	V	A	V	F	-	Y
Y	D	G	V	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	N	K	G	L	G	A	T	N	G	-	V	S	H	L	E	A	N	-	F	S	K	V	A	V	F	-	N
Y	D	G	V	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	D	K	G	V	G	A	T	N	G	-	V	S	H	L	E	A	N	-	F	S	K	V	A	V	F	-	N
Y	D	G	V	-	M	F	V	D	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	D	K	G	V	G	A	T	N	G	-	V	S	H	L	E	A	N	-	F	S	K	V	A	V	F	-	N
Y	D	G	V	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	D	K	G	V	G	T	T	N	G	-	V	S	H	L	E	A	N	-	F	S	K	V	A	V	F	-	N
Y	D	G	V	-	M	F	V	D	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	D	K	G	V	D	T	T	N	G	-	V	S	P	L	E	A	N	-	F	S	K	V	A	V	F	-	N
H	D	G	V	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	N	K	G	V	G	V	T	N	G	-	V	S	H	L	E	A	G	-	F	S	K	V	A	V	F	-	N
H	D	G	V	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	D	K	G	V	G	A	T	N	G	-	V	S	H	L	E	A	N	-	F	S	K	V	A	V	F	-	N
H	D	G	V	-	I	F	V	D	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	N	K	G	V	G	V	T	N	G	-	V	S	H	L	E	A	G	-	F	N	K	V	A	V	F	-	N
Y	D	G	V	-	M	F	V	D	Y	S	N	F	K	Y	T	-	N	A	S	Q	S	P	D	K	G	V	S	A	T	N	G	-	V	S	H	L	E	A	N	-	F	S	K	G	A	V	L	-	N
Y	D	G	V	-	M	F	V	N	Y	S	H	F	K	Y	T	-	N	A	S	K	S	P	D	K	G	V	G	T	T	N	G	-	V	S	H	L	E	A	N	-	F	S	K	V	A	V	F	-	N
H	D	G	V	-	M	F	V	D	Y	S	N	F	K	Y	T	-	N	A	S	K	N	P	D	K	G	V	G	V	T	N	G	-	V	S	H	L	E	A	G	-	F	N	K	V	A	V	F	-	N
H	D	G	V	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	A	S	K	N	P	N	K	G	V	G	V	T	N	G	-	V	S	H	L	E	A	G	-	F	N	K	V	A	V	F	-	N
H	D	G	V	-	M	F	V	D	Y	S	N	F	K	Y	T	-	N	A	S	K	N	P	N	K	G	V	G	A	T	N	G	-	V	S	H	L	D	A	G	-	F	S	K	V	A	V	F	-	N
H	D	G	V	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	A	S	K	N	P	N	K	G	V	G	V	T	N	G	-	V	S	H	L	D	A	G	-	F	S	K	V	A	V	F	-	N
H	D	G	V	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	A	S	K	N	P	N	K	G	V	G	V	T	N	G	-	V	S	H	L	E	A	G	-	F	N	K	V	A	V	F	-	N
H	D	G	V	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	D	K	G	V	G	T	T	N	G	-	V	S	H	L	E	A	N	-	F	S	K	V	A	V	F	-	N
Y	D	G	V	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	D	K	G	V	G	A	T	N	G	-	V	S	H	L	E	A	N	-	F	S	K	I	A	V	F	-	N
H	D	G	V	-	M	F	V	D	Y	S	N	F	K	Y	T	-	N	A	S	K	N	P	D	K	G	V	G	V	T	N	G	-	V	S	H	L	D	A	G	-	F	S	K	V	A	V	F	-	N
Y	D	G	V	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	N	K	G	V	G	A	T	N	G	-	V	S	H	L	E	A	N	-	F	S	K	V	A	V	F	-	N
Y	D	G	V	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	D	K	G	V	G	T	T	N	G	-	V	S	H	L	E	A	N	-	F	S	K	V	A	V	F	-	N
Y	D	G	V	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	D	K	G	V	G	A	T	N	G	-	V	S	H	L	E	A	N	-	F	S	K	V	A	V	F	-	N
H	D	G	V	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	D	K	G	V	G	A	T	N	G	-	V	S	H	L	E	A	N	-	F	S	K	V	A	V	F	-	N
H	D	G	V	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	D	K	G	V	G	A	T	N	G	-	V	S	H	L	E	A	N	-	L	S	K	V	A	V	F	-	N
H	D	G	V	-	M	F	V	D	Y	S	N	F	K	Y	T	-	N	A	S	Q	N	P	D	K	G	V	G	A	T	N	G	-	V	S	H	L	D	A	G	-	F	S	K	V	A	V	F	-	N
H	D	S	V	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	D	K	G	V	G	V	T	N	G	-	V	S	H	L	D	A	G	-	F	S	K	V	A	V	F	-	N
Y	D	G	V	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	D	K	G	V	G	T	T	N	G	-	V	S	H	L	E	A	N	-	F	S	K	V	A	V	F	-	N
Y	D	G	M	-	M	F	V	N	Y	S	N	F	K	Y	T	-	N	A	S	K	S	P	D	K	G	V	G	A	P	N	G	R	F	P	I	W	E	Q	N	-	F	S	K	V	A	V	F	-	Y

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Sequence140-NP-GA-Col-ABABC  
Sequence123-NP-UD-Jp-ABD  
Sequence111-NP-G-Jp-ABD  
Sequence57-NP-GA-OCC-AB  
Sequence172-P-CG-Col-ABCC  
Sequence110-NP-UD-Jp-ABD  
Sequence95-NP-UD-Vit-ABD  
Sequence107-P-CG-Vit-ABD  
Sequence106-P-CG-Vit-ABD  
Sequence105-NP-UD-Vit-ABD  
Sequence126-NP-UG-Jp-ABC  
Sequence135-P-CG-Col-ABCCC  
Sequence138-NP-GA-Col-ABC  
Sequence13-NP-UP-Jp-ABD  
Sequence11-NP-UP-Jp-ABD  
Sequence50-NP-GA-OCC-ABC  
Sequence26-NP-GA-Jp-ABD  
Sequence55-NP-UD-OCC-ABCCC  
Sequence178-NP-M-Col-ABCC

L	P	D	L	N	N	L	A	I	T	S	F	V	R	R	N	L	E	D	K	L	I	A	-	K	G	L	-	S	L	Q	E	V	N	K	L	I	K	D	-	-	F	L	S	S	N	K	E	L	V
L	P	N	L	N	N	L	A	I	T	N	Y	I	R	R	D	L	E	D	K	L	W	A	-	K	G	L	-	S	S	Q	E	A	N	K	L	I	K	D	-	-	F	L	N	S	N	K	E	M	V
L	P	N	L	N	N	L	A	I	T	N	Y	I	R	R	D	L	E	D	K	L	L	A	-	K	G	L	-	S	P	Q	E	A	N	K	L	I	K	D	-	-	F	L	N	S	N	K	E	L	V
L	P	D	L	N	N	L	A	I	T	S	F	V	R	R	N	L	E	D	K	L	I	A	-	K	G	L	-	T	P	Q	E	A	N	K	L	I	K	D	-	-	F	L	S	S	N	K	E	L	V
L	P	N	L	N	N	L	A	I	T	N	Y	I	R	R	D	L	E	D	K	L	W	V	-	K	G	L	-	S	P	Q	E	A	S	K	L	I	K	D	-	-	F	L	N	S	N	K	E	M	V
L	P	N	L	N	N	L	A	I	T	N	Y	I	R	R	D	L	E	D	N	C	-	-	-	-	G	L	-	K	D	C	P	H	K	K	L	I	S	S	R	L	F	E	Q	H	Q	D	W	L	
L	P	N	L	N	N	L	A	I	T	N	Y	I	R	R	D	L	E	D	K	L	W	A	-	K	G	L	-	S	S	Q	E	A	N	K	L	I	K	D	-	-	F	L	N	S	N	K	E	L	V
L	P	K	L	N	N	L	A	I	T	N	F	I	R	Q	D	L	E	D	K	L	V	A	-	K	G	L	-	S	L	Q	E	T	N	K	L	I	K	D	-	-	F	L	S	N	N	K	E	L	V
C	P	N	L	N	N	L	A	I	T	N	S	I	R	R	D	L	E	D	K	L	W	A	-	K	G	L	-	S	P	Q	E	A	N	K	L	I	K	D	-	-	F	L	N	S	N	K	E	L	V
L	P	N	L	N	N	L	A	I	T	S	S	V	R	R	N	L	E	D	K	L	I	A	-	K	G	L	-	P	P	Q	D	A	N	K	L	V	K	D	-	-	F	L	S	S	N	K	E	L	V
L	P	D	L	N	N	L	A	I	T	S	F	V	R	R	H	L	E	D	K	L	V	V	-	K	G	L	-	S	L	Q	E	T	N	K	L	I	K	D	-	-	F	L	S	S	N	K	E	L	V
L	P	D	L	N	N	L	A	I	T	S	F	V	R	R	N	L	E	D	K	L	I	A	-	K	G	L	-	S	L	R	E	A	N	K	L	I	K	D	-	-	F	L	S	S	N	K	E	L	V
L	P	N	L	N	N	L	A	I	T	N	Y	I	R	R	D	L	E	D	K	L	L	A	-	K	G	L	-	S	P	Q	E	A	N	K	L	I	I	D	-	-	F	L	N	S	N	K	E	L	V
L	P	N	L	N	N	L	A	I	T	N	Y	I	R	R	D	L	E	D	K	L	W	A	-	K	G	L	-	S	P	Q	E	A	N	K	L	I	K	D	-	-	F	L	N	S	N	K	E	M	V
L	P	N	L	N	N	L	A	I	T	S	Y	I	R	R	D	L	E	D	K	L	W	A	-	K	G	L	-	S	P	Q	E	T	N	K	L	I	K	D	-	-	F	L	N	S	N	K	E	L	V
L	P	N	L	N	N	L	A	I	T	N	Y	I	R	R	D	L	E	D	K	L	W	A	-	K	G	L	-	S	R	Q	E	S	N	K	L	I	K	D	-	-	F	L	N	S	N	K	E	M	V
L	P	N	L	N	N	L	A	I	T	S	Y	I	R	R	D	L	E	D	K	L	W	A	-	K	G	L	-	S	P	Q	E	V	N	K	L	I	K	D	-	-	F	L	N	S	N	K	E	L	V
L	S	D	L	N	N	L	A	I	T	S	F	V	R	R	N	L	E	D	K	L	V	A	-	K	G	L	-	S	L	Q	E	V	N	K	L	I	K	D	-	-	F	L	S	S	N	K	E	L	V

Sequence40-NP-GA-Jp-ABD	L	P	N	L	N	N	L	A	I	T	N	Y	I	R	R	D	L	E	D	K	L	W	A	-	K	G	L	-	S	P	Q	E	A	N	K	L	I	K	D	-	-	F	L	N	S	N	K	G	L	V	
Sequence43-NP-GA-Jp-ABD	L	P	N	L	N	N	L	A	I	T	N	Y	I	R	R	D	L	E	A	N	L	W	A	-	K	G	L	-	S	P	Q	E	A	N	K	L	L	K	G	-	-	F	L	N	S	N	K	E	M	V	
Sequence139-NP-UD-Col-ABCC	L	P	D	L	N	N	L	A	I	T	S	F	V	R	R	N	L	E	D	K	L	V	T	-	K	G	L	-	S	L	Q	D	V	N	K	L	I	K	D	-	-	F	L	S	S	N	K	E	L	V	
Sequence7-P-CG-Jp-ABBD	L	P	N	L	N	N	L	A	I	T	N	Y	I	R	R	D	L	E	D	K	L	W	A	-	K	G	L	-	S	P	Q	E	A	D	K	L	I	K	D	-	-	F	L	N	S	N	K	E	M	V	
Sequence91-P-CG-Vit-ABD	L	I	Q	I	I	S	L	S	L	I	-	I	I	R	R	D	L	E	D	N	L	W	A	-	K	G	L	-	S	P	Q	Q	E	A	N	K	L	I	K	V	-	-	F	L	S	T	N	K	E	L	V
Sequence29-NP-GA-Jp-ABABD	L	P	N	L	N	N	L	A	I	T	N	Y	I	R	R	D	L	E	D	K	L	L	A	-	K	G	L	-	S	P	Q	E	A	N	K	L	I	K	D	-	-	F	L	N	S	N	K	E	M	V	
Sequence78-P-CG-EA-ABD	L	P	N	L	N	N	L	A	I	T	N	Y	I	R	R	D	L	E	D	K	L	F	A	-	R	G	L	-	S	P	Q	E	A	N	K	L	I	K	D	-	-	F	L	N	S	N	K	E	L	L	
Sequence188-NP-GCA-Jp-AB	L	P	D	L	N	N	L	A	I	T	S	F	V	R	R	N	L	E	D	K	L	T	T	-	K	G	L	-	S	P	Q	E	A	N	K	L	I	K	D	-	-	F	L	N	S	N	K	E	L	V	
Sequence72-P-CG-EA-ABD	L	P	N	L	N	N	L	A	I	T	N	Y	I	R	R	D	L	E	D	K	L	L	A	-	K	G	L	-	S	P	Q	Q	E	A	N	K	L	I	K	D	-	-	F	L	N	S	N	K	E	M	V
Sequence79-P-CG-EA-ABD	L	P	N	L	N	N	L	A	I	T	N	Y	I	R	R	D	L	E	D	K	L	W	A	-	K	G	L	-	S	P	Q	Q	E	A	N	K	L	I	K	D	-	-	F	L	N	S	N	K	E	L	L
Sequence61-NP-UD-OCC-ABC	L	P	N	L	N	N	L	A	I	T	N	Y	I	R	R	D	L	E	D	K	L	W	A	-	K	G	L	-	S	P	Q	Q	E	A	N	K	L	I	K	D	-	-	F	L	N	S	N	K	E	L	L
Sequence125-NP-UG-Jp-ABCC	L	S	D	L	N	N	L	A	I	T	S	F	V	R	R	N	L	E	D	K	L	I	A	-	K	G	L	-	S	P	Q	Q	E	A	N	K	L	I	K	D	-	-	F	L	S	S	N	K	E	L	V
Sequence175-NP-G-Col-ABCC	L	S	D	L	N	N	L	A	I	T	S	F	V	R	R	H	L	E	D	K	L	I	A	-	K	G	L	-	S	P	Q	Q	E	A	N	K	L	I	K	D	-	-	F	L	S	S	N	K	E	L	V
Sequence122-NP-G-Jp-ABCC	L	P	D	L	N	N	L	A	I	T	S	L	V	R	R	N	L	E	D	K	L	I	A	-	K	G	L	-	S	P	Q	Q	D	A	N	K	L	I	K	D	-	-	F	L	S	S	N	K	E	L	V
Sequence36-NP-GA-Jp-ABD	L	P	N	L	N	N	L	A	I	T	N	Y	I	R	R	D	L	E	D	K	L	L	A	-	K	G	L	-	S	P	Q	Q	E	A	N	K	L	I	K	D	-	-	F	L	N	S	N	K	E	L	L
Sequence58-NP-UD-OCC-ABC	L	P	N	L	N	N	L	A	I	N	S	Y	I	R	R	D	L	E	D	K	L	W	A	-	K	G	L	-	S	P	Q	Q	E	V	N	K	L	I	K	D	-	-	F	L	N	S	N	K	E	L	V
Sequence27-NP-GA-Jp-ABBD	L	P	N	L	N	N	L	A	I	T	N	Y	I	R	R	D	L	E	D	K	L	W	A	-	K	G	L	-	S	P	Q	Q	E	A	N	K	L	I	K	D	-	-	F	L	N	S	N	K	E	M	V
Sequence93-P-CG-Vit-ABD	L	P	N	L	N	N	L	A	I	T	N	Y	I	R	R	D	L	E	D	K	L	W	S	-	K	G	L	-	S	P	Q	Q	E	A	N	K	L	I	K	D	-	-	F	L	N	S	N	K	E	L	V
Sequence177-NP-M-Col-ABCC	L	P	D	L	N	N	L	A	I	T	S	F	V	R	R	N	L	E	D	K	L	T	T	-	K	G	L	-	S	L	Q	Q	E	V	N	K	L	I	K	D	-	-	F	L	S	S	N	K	E	L	V
Sequence182-NP-UD-Col-ABCC	L	P	D	L	N	N	L	A	I	T	S	F	V	R	R	D	L	E	N	K	L	I	A	-	K	G	L	-	P	P	Q	Q	E	A	N	K	L	I	K	D	-	-	F	L	S	S	N	K	E	L	V
Sequence114-NP-UG-Jp-ABC	L	P	D	L	N	N	L	A	I	T	S	F	V	R	R	N	L	E	D	K	L	V	A	-	K	G	L	-	S	P	Q	Q	E	A	N	K	L	I	K	D	-	-	F	L	T	S	N	K	E	L	V
Sequence74-P-CG-EA-ABD	L	P	N	L	N	N	L	A	I	T	N	Y	I	R	R	D	L	E	D	K	L	L	A	-	K	G	L	-	S	P	Q	Q	E	A	N	K	L	I	K	D	-	-	F	L	N	S	N	K	E	M	L
Sequence20-P-CG-Jp-ABD	L	P	N	L	N	N	L	A	I	T	N	Y	I	R	R	D	L	E	D	K	L	W	A	-	K	G	L	-	S	P	Q	Q	E	S	N	K	L	I	K	D	-	-	F	L	N	S	N	K	E	M	V
Sequence14-NP-GCA-Jp-ABD	L	P	N	L	N	N	L	A	I	T	N	Y	I	R	R	D	L	E	D	K	L	W	A	-	R	G	L	-	S	P	Q	Q	E	A	S	K	L	I	K	D	-	-	F	L	N	S	N	K	E	L	V
Sequence39-NP-GA-Jp-ABC	L	P	N	L	N	N	L	A	I	T	G	V	V	R	R	D	L	E	D	K	L	I	A	-	K	G	L	-	S	P	Q	Q	E	A	N	K	L	V	K	D	-	-	F	L	S	S	N	K	E	L	V
Sequence170-NP-UD-Col-ABCC	L	P	D	L	N	N	L	A	I	T	S	L	V	R	R	N	L	E	D	K	L	T	I	-	K	G	L	-	S	L	Q	Q	E	A	N	K	L	I	K	D	-	-	F	L	S	S	N	K	E	L	V
Sequence76-P-CG-EA-ABD	L	P	N	L	N	N	L	A	I	T	N	Y	I	R	R	D	L	E	D	K	L	W	A	-	K	G	L	-	S	P	Q	Q	E	T	N	K	L	I	K	D	-	-	F	L	N	S	N	K	G	L	V
Sequence53-NP-GA-EA-ABD	L	P	N	L	N	N	L	A	I	T	N	Y	I	R	R	D	L	E	D	K	L	L	A	-	K	G	L	-	S	P	Q	Q	E	A	N	K	L	I	K	D	-	-	F	L	N	S	N	K	E	L	L
Sequence174-P-CG-Col-ABCC	L	P	D	L	N	N	L	A	I	T	S	L	V	R	R	N	L	E	N	K	L	T	T	-	K	G	L	-	S	L	Q	Q	E	A	N	K	L	I	K	D	-	-	F	L	S	S	N	K	E	L	V
Sequence33-NP-UG-Jp-ABD	L	P	D	L	N	N	L	A	I	T	S	F	V	R	R	N	L	E	D	K	L	T	T	-	K	G	L	-	S	L	Q	Q	E	A	N	K	L	I	K	D	-	-	F	L	S	S	N	K	E	L	V
Sequence60-NP-GA-EA-ABD	L	P	N	L	N	N	L	A	I	T	N	Y	I	R	R	D	L	E	D	K	L	W	A	-	K	G	L	-	S	S	Q	Q	E	A	N	K	L	I	K	D	-	-	F	L	N	S	N	K	E	L	L
Sequence38-NP-GA-Jp-ABD	L	P	N	L	N	N	L	A	I	T	N	Y	I	R	R	D	L	E	D	K	L	W	A	-	R	G	L	-	S	P	Q	Q	E	A	N	K	L	I	K	D	-	-	F	L	N	S	N	K	E	M	V
Sequence1-NP-EG-Jp-ABCCC	L	P	D	L	N	N	L	A	I	T	S	F	V	R	R	N	L	E	N	K	L	V	T	-	E	G	L	-	S	L	Q	Q	E	A	N	K	L	I	K	D	-	-	F	L	S	S	N	K	E	L	V
Sequence101-P-CG-Vit-ABD	L	P	N	L	N	N	L	A	I	T	N	H	I	R	R	D	L	E	D	K	L	W	A	-	K	G	L	-	S	P	Q	Q	E	A	N	K	L	I	K	D	-	-	F	L	N	S	N	K	E	L	V
Sequence64-NP-UD-OCC-ABC	L	P	N	L	N	N	L	A	I	T	S	Y	I	R	R	D	L	E	D	K	L	C	A	-	K	G	L	-	S	P	Q	Q	E	V	N	K	L	I	K	D	-	-	F	L	N	S	N	K	E	L	V
Sequence81-P-CG-EA-ABD	L	P	N	L	N	N	L	A	I	T	N	Y	I	R	R	D	L	E	D	K	L	W	A	-	K	G	L	-	S	S	Q	Q	E	A	N	K	L	I	K	D	-	-	F	L	N	S	N	K	E	M	V
Sequence150-NP-DA-Sen-BC	L	S	N	L	N	N	L	A	I	T	S	F	I	R	Q	D	L	E	D	K	L	V	A	-	K	G	L	-	S	L	Q	Q	E	A	N	K	L	I	K	D	-	-	F	L	N	S	N	K	E	L	V
Sequence90-NP-UD-Vit-ABD	L	P	N	L	N	N	L	A	I	T	N	Y	I	R	R	D	L	Q	D	K	L	W	S	-	K	G	L	-	S	P	S	E	A	N	K	L	I	K	D	-	-	F	L	N	S	N	K	E	L	V	
Sequence136-P-CG-Col-AACC	L	P	D	L	N	N	L	A	I	T	S	F	V	R	R	N	L	E	D	K	L	I	A	-	K	G	L	-	S	L	Q	Q	E	V	N	K	L	I	R	D	-	-	F	L	S	S	N	K	E	L	V
Sequence15-NP-UP-Jp-ABD	L	P	K	L	N	N	L	A	I	T	N	Y	I	R	R	D	L	E	D	K	L	W	A	-	K	G	L	-	S	P	Q	Q	E	A	N	K	L	I	K	D	-	-	F	L	N	G	N	K	E	M	A
Sequence108-NP-UD-Vit-ABD	L	P	N	L	N	N	L	A	I	T	N	Y	I	R	R	D	L	E	D	K	L	W	A	-	K	G	L	-	S	P	Q	Q	E	A	N	K	L	I	K	D	-	-	F	L	N	S	N	K	E	L	V
Sequence104-P-CG-OCC-ABCC	L	P	K	L	N	N	L	A	I	T	N	F	I	R	Q	D	L	E	D	K	L	V	A	-	K	G	L	-	S	L	P	E	T	N	K	L	I	K	D	-	-	F	L	S	T	T	K	N	W	V	
Sequence179-NP-UD-Col-ABCC	L	P	D	L	N	N	L	A	I	T	S	F	V	R	R	N	L	E	D	K	L	I	T	-	K	G	L	-	S	I	Q	Q	E	A	N	K	L	I	K	D	-	-	F	L	S	S	N	K	E	L	V
Sequence37-NP-GA-Jp-ABCCC	L	P	N	L	N	N	L	A	I	T	S	Y	I	R	R	D	L	E	D	K	L	W	A	-	K	G	L	-	S	P	Q	Q	E	V	N	K	L	I	K	D	-	-	F	L	N	S	N	K	E	L	V
Sequence89-NP-UD-Vit-ABD	L	P	N	L	N	N	L	A	I	T	N	Y	I	R	R	D	L	E	D	N	L	W	A	-	K	G																									

Sequence82-P-CG-EA-ABD  
Sequence10-NP-GCA-Jp-ABD  
Sequence19-NP-UP-Jp-ABBD  
Sequence115-NP-UG-Jp-ABC  
Sequence45-NP-GA-Jp-ABCC  
Sequence119-NP-UG-Jp-ABC  
Sequence70-NP-GA-Ch-ABD  
Sequence52-NP-UD-EA-ABD  
Sequence97-P-CG-Vit-ABD  
Sequence94-NP-UD-Vit-ABD  
Sequence176-NP-GA-Col-ABCC  
Sequence68-NP-D-Am-ABBC  
Sequence47-NP-GA-Jp-ABD  
Sequence56-NP-UD-OCC-ABC  
Sequence31-NP-GA-Jp-ABD  
Sequence46-NP-UD-Jp-ABD  
Sequence102-NP-UG-Vit-ABD  
Sequence71-P-CG-EA-ABD  
Sequence30-NP-GA-Jp-ABBD  
Sequence28-NP-GA-Jp-AABD  
Sequence98-P-CG-Vit-AD  
Sequence99-P-CG-Vit-ABD  
Sequence24-NP-UD-USA-ABD  
Sequence124-NP-G-Jp-ABC  
Sequence77-P-CG-OCC-ABCC  
Sequence113-NP-UG-Jp-ABC  
Sequence88-NP-UD-Vit-ABD  
Sequence100-NP-UD-Vit-ABD  
Sequence137-NP-G-Col-ABCC  
Sequence117-NP-G-Jp-ABC  
Sequence171-NP-UD-Col-ABCC  
Sequence180-P-CG-Col-ABC  
Sequence112-P-CG-Jp-ABCC  
Sequence127-NP-UD-Jp-ABC  
Sequence51-NP-GA-OCC-ABC  
Sequence73-P-CG-EA-ABD  
Sequence183-NP-UD-Col-ABD  
Sequence34-NP-UD-Jp-ABDD  
Sequence21-P-CG-Jp-ABD  
Sequence32-NP-GA-Jp-ABD  
Sequence116-NP-UD-Jp-ABC  
Sequence8-NP-GA-Jp-ABD  
Sequence83-P-CG-EA-ABD  
Sequence48-NP-UD-OCC-ABC  
Sequence120-NP-G-Jp-ABC  
Sequence187-NP-UG-Jp-ABCCC  
Sequence118-NP-G-Jp-ABD  
Sequence87-NP-UG-Vit-ABD

L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
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Sequence135-P-CG-Col-ABCCC	G	K	A	L	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	K	V	A	K	N	L	-	E	S	
Sequence138-NP-GA-Col-ABC	G	K	A	L	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	E	K	K	L	-	E	S	
Sequence13-NP-UP-Jp-ABD	G	K	A	L	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	V	G	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	T	K	K	L	-	E	S	
Sequence11-NP-UP-Jp-ABD	G	K	V	L	S	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	K	L	-	E	S	
Sequence50-NP-GA-OCC-ABC	E	K	A	L	N	F	N	K	T	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	T	K	K	L	-	E	R	
Sequence26-NP-GA-Jp-ABD	G	K	V	S	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	G	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	K	L	-	E	S	
Sequence55-NP-UD-OCC-ABCCC	E	K	A	L	N	F	N	K	T	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	T	K	K	L	-	E	R	
Sequence178-NP-M-Col-ABCC	G	K	A	L	N	F	N	K	A	V	A	D	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	E	K	K	L	-	E	S	
Sequence40-NP-GA-Jp-ABD	G	K	V	S	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	K	L	-	E	S	
Sequence43-NP-GA-Jp-ABD	G	K	V	S	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	K	L	-	E	S	
Sequence139-NP-UD-Col-ABCC	G	K	A	L	N	F	N	K	A	V	A	D	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	E	K	K	L	-	E	S	
Sequence7-P-CG-Jp-ABBD	G	K	V	S	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	T	K	K	L	-	E	S	
Sequence91-P-CG-Vit-ABD	G	K	V	S	N	F	N	K	A	V	A	E	A	K	N	S	G	N	Y	V	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	K	L	-	E	S	
Sequence29-NP-GA-Jp-ABABD	G	K	V	L	N	F	N	K	A	V	A	G	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	K	L	-	E	S	
Sequence78-P-CG-EA-ABD	G	K	V	S	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	K	L	-	E	S	
Sequence188-NP-GCA-Jp-AB	G	K	T	L	N	F	N	K	A	V	A	D	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	E	K	K	L	-	E	S	
Sequence72-P-CG-EA-ABD	G	K	V	S	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	G	E	V	K	K	A	Q	K	D	L	D	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	K	L	-	E	S	
Sequence79-P-CG-EA-ABD	G	K	V	S	N	F	N	K	A	V	A	E	A	K	T	A	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	K	L	-	E	S	
Sequence61-NP-UD-OCC-ABC	G	K	V	S	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	K	L	-	E	S	
Sequence125-NP-UG-Jp-ABCC	G	K	A	L	N	F	N	K	A	V	A	D	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	N	L	-	E	S	
Sequence175-NP-G-Col-ABCC	G	K	A	L	N	F	N	K	A	V	A	D	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	E	K	K	L	-	E	S	
Sequence122-NP-G-Jp-ABCC	G	K	A	L	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	Q	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	E	K	K	L	-	E	S	
Sequence36-NP-GA-Jp-ABD	G	K	V	S	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	K	L	-	E	S	
Sequence58-NP-UD-OCC-ABC	E	K	A	L	N	F	N	K	T	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	K	L	-	E	R	
Sequence27-NP-GA-Jp-ABBD	G	K	V	L	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	K	L	-	E	S	
Sequence93-P-CG-Vit-ABD	G	K	V	S	N	F	I	K	L	I	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	V	K	K	L	-	E	S	
Sequence177-NP-M-Col-ABCC	G	K	A	L	N	F	N	K	A	V	A	E	A	K	S	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	E	K	K	L	-	E	S	
Sequence182-NP-UD-Col-ABCC	G	K	A	L	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	K	L	-	E	S	
Sequence114-NP-UG-Jp-ABC	G	K	A	L	N	F	N	K	A	V	V	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	E	K	K	L	-	E	S	
Sequence74-P-CG-EA-ABD	G	K	V	S	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	K	L	-	E	S	
Sequence20-P-CG-Jp-ABD	G	K	V	S	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	K	L	-	E	S	
Sequence14-NP-GCA-Jp-ABD	G	K	A	L	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	G	V	K	K	A	Q	K	D	F	E	K	F	L	R	K	R	E	H	L	E	K	E	V	A	K	K	L	-	E	S	
Sequence39-NP-GA-Jp-ABC	G	K	A	L	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	R	T	Q	K	D	L	E	K	S	L	K	K	R	E	H	L	E	K	G	V	V	K	N	L	-	E	S	
Sequence170-NP-UD-Col-ABCC	G	K	A	L	N	F	N	K	A	V	A	D	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	E	K	K	L	-	E	S	
Sequence76-P-CG-EA-ABD	G	K	V	S	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	K	L	-	E	S	
Sequence53-NP-GA-EA-ABD	G	K	V	S	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	K	L	-	E	S	
Sequence174-P-CG-Col-ABCC	G	K	A	L	N	F	N	K	A	V	A	E	A	K	S	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	E	K	K	L	-	E	S	
Sequence33-NP-UG-Jp-ABD	G	K	A	L	N	F	N	K	A	V	A	D	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	E	K	K	L	-	E	S	
Sequence60-NP-GA-EA-ABD	G	K	V	S	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	G	H	L	E	K	E	V	A	K	K	L	-	E	S
Sequence38-NP-GA-Jp-ABD	G	K	V	S	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	K	L	-	E	S	
Sequence1-NP-EG-Jp-ABCCC	G	K	A	L	N	F	N	K	A	V	A	D	A	K	N	T	G	D	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	E	K	K	L	-	E	T	
Sequence101-P-CG-Vit-ABD	V	K	V	S	T	S	I	K	L	S	L	K	L	N	T	Q	A	I	M	I	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	K	M	-	E	S	
Sequence64-NP-UD-OCC-ABC	E	K	A	L	N	F	N	K	T	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	T	K	K	L	-	E	R	
Sequence81-P-CG-EA-ABD	G	K	F	S	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	K	L	-	E	S	
Sequence150-NP-DA-Sen-BC	G	K	A	S	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	E	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	N	L	-	E	S	
Sequence90-NP-UD-Vit-ABD	G	K	V	S	N	F	N	K	A	I	A	E	A	K	N	T	G	N	Y																																

Sequence62-NP-UD-OCC-ABD  
Sequence9-NP-GCA-Jp-ABD  
Sequence12-NP-UP-Jp-ABD  
Sequence35-NP-GA-Jp-ABABD  
Sequence54-NP-GA-OCC-ABC  
Sequence109-P-CG-Jp-ABD  
Sequence96-NP-UD-Vit-ABD  
Sequence80-P-CG-EA-ABD  
Sequence82-P-CG-EA-ABD  
Sequence10-NP-GCA-Jp-ABD  
Sequence19-NP-UP-Jp-ABBD  
Sequence115-NP-UG-Jp-ABC  
Sequence45-NP-GA-Jp-ABCC  
Sequence119-NP-UG-Jp-ABC  
Sequence70-NP-GA-Ch-ABD  
Sequence52-NP-UD-EA-ABD  
Sequence97-P-CG-Vit-ABD  
Sequence94-NP-UD-Vit-ABD  
Sequence176-NP-GA-Col-ABCC  
Sequence68-NP-D-Am-ABBC  
Sequence47-NP-GA-Jp-ABD  
Sequence56-NP-UD-OCC-ABC  
Sequence31-NP-GA-Jp-ABD  
Sequence46-NP-UD-Jp-ABD  
Sequence102-NP-G-Vit-ABD  
Sequence71-P-CG-EA-ABD  
Sequence30-NP-GA-Jp-ABBD  
Sequence28-NP-GA-Jp-AABD  
Sequence98-P-CG-Vit-AD  
Sequence99-P-CG-Vit-ABD  
Sequence24-NP-UD-USA-ABD  
Sequence124-NP-G-Jp-ABC  
Sequence77-P-CG-OCC-ABCC  
Sequence113-NP-UG-Jp-ABC  
Sequence88-NP-UD-Vit-ABD  
Sequence100-NP-UD-Vit-ABD  
Sequence137-NP-G-Col-ABCC  
Sequence117-NP-G-Jp-ABC  
Sequence171-NP-UD-Col-ABCC  
Sequence180-P-CG-Col-ABC  
Sequence112-P-CG-Jp-ABCC  
Sequence127-NP-UD-Jp-ABC  
Sequence51-NP-GA-OCC-ABC  
Sequence73-P-CG-EA-ABD  
Sequence183-NP-UD-Col-ABD  
Sequence34-NP-UD-Jp-ABDD  
Sequence21-P-CG-Jp-ABD  
Sequence32-NP-GA-Jp-ABD  
Sequence116-NP-UD-Jp-ABC  
Sequence8-NP-GCA-Jp-ABD  
Sequence83-P-CG-EA-ABD  
Sequence48-NP-UD-OCC-ABC  
Sequence120-NP-G-Jp-ABC  
Sequence187-NP-UG-Jp-ABCCC  
Sequence118-NP-G-Jp-ABD  
Sequence87-NP-UG-Vit-ABD

E	K	A	L	N	F	N	K	T	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	I	R	K	R	E	H	L	E	K	E	V	M	K	K	L	-	E	N
G	K	V	S	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	V	K	K	L	-	E	S
G	K	V	S	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	V	K	K	L	-	E	S
E	I	A	L	N	F	N	K	T	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	I	R	K	R	E	H	L	E	K	E	V	T	K	K	L	-	E	N
G	K	V	-	Q	L	H	K	A	V	A	E	A	K	-	T	Q	A	I	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	K	L	-	E	S
G	K	V	S	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	K	L	-	E	S
G	K	V	S	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	K	L	-	E	S
G	K	V	S	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	K	L	-	E	S
G	K	A	L	N	F	N	K	A	V	A	D	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	N	L	-	E	S
G	K	A	L	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	E	K	K	L	-	E	S
G	K	A	L	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	K	K	R	E	H	L	E	K	E	V	A	K	N	L	-	E	S
G	K	V	S	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	K	L	-	E	S
G	K	V	S	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	K	L	-	E	S
G	K	V	S	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	K	L	-	E	S
G	K	V	S	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	K	L	-	E	S
G	K	V	S	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	K	L	-	E	S
G	K	V	S	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	K	L	-	E	S
G	K	V	S	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	F	E	K	E	V	A	K	K	L	-	E	S
G	K	A	L	N	F	N	K	A	V	A	D	A	K	N	T	G	N	Y	D	E	V	K	R	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	E	K	K	L	-	E	S
E	K	A	L	N	F	N	K	T	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	I	R	K	R	E	H	L	E	K	E	V	T	K	K	M	-	E	N
G	K	A	L	N	F	N	K	A	V	V	E	A	K	N	S	G	N	Y	V	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	E	K	K	L	-	E	S
G	K	V	L	N	F	N	Q	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	K	L	-	E	S
E	K	A	L	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	E	K	K	L	-	E	S
G	K	A	L	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	N	L	-	E	S
G	K	A	L	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	E	K	K	L	-	E	S
G	K	A	L	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	N	L	-	E	S
E	K	A	L	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	T	K	K	M	-	E	S
R	K	V	L	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	K	L	-	E	S
E	K	A	L	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	D	V	A	K	K	L	-	E	S
G	K	T	L	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	I	R	K	R	E	H	L	E	K	E	V	A	K	K	L	-	E	S
G	K	V	S	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	K	L	-	E	S
G	K	V	S	N	F	N	K	A	V	A	D	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	N	L	-	E	S
G	K	V	S	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	K	L	-	E	S
E	K	A	L	N	F	N	K	T	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	T	K	K	L	-	E	R
G	K	A	L	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	E	K	K	L	-	E	S
G	K	A	L	N	F	N	K	A	V	A	D	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	E	K	K	L	-	E	S
G	K	V	S	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	K	L	-	E	S
G	K	V	S	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	K	L	-	E	S
G	K	V	S	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L	E	K	S	L	R	K	R	E	H	L	E	K	E	V	A	K	K	L	-	E	S
G	K	V	S	N	F	N	K	A	V	A	E	A	K	N	T	G	N	Y	D	E	V	K	K	A	Q	K	D	L</																					

Sequence57-NP-GA-OCC-AB	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	Q	E	A	S	K	E	A	R	A	T	A	C	V	Q	N	L	K	G	I	R	S	E	L	S	
Sequence172-P-CG-Col-ABCC	K	S	G	N	K	N	K	M	E	A	K	A	Q	A	N	S	Q	K	D	E	I	F	A	L	I	N	K	E	A	S	K	D	A	R	A	I	T	Y	A	Q	N	L	K	G	I	R	S	E	L	S	
Sequence110-NP-UD-Jp-ABD	R	N	D	N	K	N	G	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	K	E	A	S	K	E	A	R	A	A	A	F	D	P	N	L	K	G	I	V	R	S	E	L	S
Sequence95-NP-UD-Vit-ABD	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	K	E	A	S	K	E	A	R	A	A	A	F	D	P	N	L	K	G	V	R	S	E	L	S	
Sequence107-P-CG-Vit-ABD	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	K	E	A	S	K	E	A	R	A	A	A	F	D	P	N	L	K	G	V	R	S	E	L	S	
Sequence106-P-CG-Vit-ABD	R	S	N	N	K	N	K	M	E	A	K	S	Q	A	N	S	Q	K	D	E	I	F	A	L	I	N	K	E	A	N	K	D	A	R	A	I	A	Y	A	S	N	L	K	G	I	K	R	E	L	S	
Sequence105-NP-UD-Vit-ABD	N	T	T	T	K	I	E	W	K	Q	K	L	K	L	T	A	K	K	I	R	F	L	H	L	S	I	K	R	L	V	R	K	Q	E	R	P	L	L	I	R	I	L	K	A	S	G	A	N	C	L	
Sequence126-NP-UG-Jp-ABC	K	S	G	N	K	N	K	M	E	A	K	A	Q	A	N	S	Q	K	D	E	I	F	A	L	I	N	K	E	A	N	R	D	A	R	A	I	A	Y	A	Q	N	L	K	G	I	E	R	E	L	S	
Sequence135-P-CG-Col-ABCCC	K	S	G	N	K	N	K	M	E	A	K	A	Q	A	N	S	Q	K	D	E	I	F	A	L	I	N	K	E	A	N	R	D	A	R	A	I	A	Y	S	Q	N	L	K	G	I	K	R	E	L	S	
Sequence138-NP-GA-Col-ABC	K	S	G	N	K	N	K	M	E	A	K	A	Q	A	N	S	Q	K	D	E	I	F	A	L	I	N	K	E	A	N	R	D	A	R	A	I	A	Y	A	Q	N	L	K	G	I	K	R	E	L	S	
Sequence13-NP-UP-Jp-ABD	R	N	E	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	K	E	A	S	K	E	A	R	A	A	S	F	D	P	N	L	K	G	I	R	S	E	L	S	
Sequence11-NP-UP-Jp-ABD	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	K	E	A	S	K	E	A	R	A	A	A	F	D	P	S	F	K	G	I	R	S	E	L	S	
Sequence50-NP-GA-OCC-ABC	K	S	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	I	I	N	E	E	A	G	K	E	A	R	V	A	A	C	V	Q	N	L	K	G	I	R	M	E	L	S	
Sequence26-NP-GA-Jp-ABD	R	N	D	N	K	N	R	M	E	V	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	Q	E	A	S	K	E	A	R	A	A	A	F	D	P	N	L	K	G	I	R	S	E	L	S	
Sequence55-NP-UD-OCC-ABCCC	K	S	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	I	I	N	E	E	A	G	K	E	A	R	V	V	A	C	V	Q	N	L	K	G	I	R	M	E	L	S	
Sequence178-NP-M-Col-ABCC	K	S	G	N	K	N	K	M	E	A	K	A	Q	A	N	S	Q	K	N	E	I	F	A	L	I	N	K	E	A	N	R	D	T	R	A	I	A	Y	A	Q	N	L	K	G	I	K	R	E	L	S	
Sequence40-NP-GA-Jp-ABD	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	Q	E	A	S	K	E	A	R	A	A	A	F	D	P	N	L	K	G	I	R	S	E	L	S	
Sequence43-NP-GA-Jp-ABD	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	Q	E	A	S	K	E	A	R	A	A	A	F	D	P	N	L	K	G	I	R	S	E	L	S	
Sequence139-NP-UD-Col-ABCC	K	S	G	N	K	N	K	M	E	A	K	A	Q	A	N	S	Q	K	D	E	I	F	A	L	I	N	K	E	A	N	R	D	A	R	A	I	A	Y	A	Q	N	L	K	G	I	K	R	E	L	S	
Sequence7-P-CG-Jp-ABBD	R	N	E	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	K	E	A	S	K	E	A	R	A	A	S	F	D	P	N	L	K	G	I	R	S	E	L	S	
Sequence91-P-CG-Vit-ABD	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	K	E	A	S	K	E	A	R	A	A	A	F	D	P	N	L	K	G	I	R	S	E	L	S	
Sequence29-NP-GA-Jp-ABABD	R	N	N	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	Q	E	A	S	K	E	A	R	A	A	A	F	D	P	S	L	K	G	I	R	S	E	L	S	
Sequence78-P-CG-EA-ABD	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	Q	E	A	S	K	E	A	R	A	A	A	F	D	P	N	L	K	G	I	R	N	E	L	S	
Sequence188-NP-GCA-Jp-AB	K	S	G	N	K	N	K	M	E	A	K	A	Q	A	N	S	Q	K	D	E	I	F	A	L	I	N	K	E	A	N	R	D	A	R	A	I	A	Y	A	Q	N	L	K	G	I	K	R	E	L	S	
Sequence72-P-CG-EA-ABD	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	K	E	A	S	K	E	A	R	A	A	A	F	D	P	N	L	K	G	I	R	S	E	L	S	
Sequence79-P-CG-EA-ABD	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	Q	E	A	G	K	E	A	R	A	A	A	F	D	P	S	L	K	G	I	R	S	E	L	S	
Sequence61-NP-UD-OCC-ABC	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	Q	E	A	S	K	E	A	R	A	A	A	F	D	P	S	L	K	G	I	R	S	E	L	S	
Sequence125-NP-UG-Jp-ABCC	K	S	G	N	K	N	K	M	E	A	K	S	Q	A	N	S	Q	K	D	G	I	F	A	L	I	N	K	E	A	T	R	E	A	R	A	I	A	Y	A	Q	N	L	K	G	I	R	R	E	L	S	
Sequence175-NP-G-Col-ABCC	K	S	G	N	K	N	K	M	E	A	K	A	Q	A	N	S	Q	K	D	E	I	F	A	L	I	N	K	E	A	N	R	D	A	R	A	I	A	Y	S	Q	N	L	K	G	I	K	R	E	L	S	
Sequence122-NP-G-Jp-ABCC	K	S	G	N	K	N	K	M	E	A	K	A	Q	A	N	S	Q	K	D	E	I	F	T	L	I	N	K	E	A	N	R	D	A	R	A	I	A	Y	A	Q	N	L	K	G	I	K	R	E	L	S	
Sequence36-NP-GA-Jp-ABD	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	Q	E	A	S	K	E	A	R	A	A	A	F	D	P	N	L	K	G	I	R	N	E	L	S	
Sequence58-NP-UD-OCC-ABC	K	S	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	I	I	N	E	E	A	G	K	E	A	R	V	A	A	C	V	Q	N	L	K	G	I	R	M	E	L	S	
Sequence27-NP-GA-Jp-ABBD	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	T	E	A	S	K	E	A	R	V	A	A	F	D	P	N	L	K	S	T	R	S	E	L	S	
Sequence93-P-CG-Vit-ABD	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	K	E	A	S	K	E	A	R	A	A	A	F	D	P	N	L	K	G	I	R	S	E	L	S	
Sequence177-NP-M-Col-ABCC	K	S	G	N	K	N	K	M	E	A	K	S	Q	A	N	S	Q	K	D	E	I	F	A	L	I	N	K	E	A	N	R	D	A	R	A	I	A	Y	A	Q	N	L	K	G	I	K	R	E	L	S	
Sequence182-NP-UD-Col-ABCC	K	S	G	N	K	N	K	M	E	A	K	S	Q	A	N	S	Q	K	D	E	I	F	A	L	I	N	K	E	A	N	R	D	A	R	A	I	A	Y	A	Q	N	L	K	G	I	K	R	E	L	S	
Sequence114-NP-UG-Jp-ABC	K	S	G	N	K	N	K	M	E	A	K	S	Q	A	N	S	Q	K	D	E	I	F	M	L	I	N	K	E	A	N	R	D	A	R	A	I	A	Y	A	Q	N	L	K	G	I	K	R	E	L	S	
Sequence74-P-CG-EA-ABD	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	Q	E	A	S	K	E	A	R	A	A	A	F	D	P	N	L	K	G	I	R	N	E	L	S	
Sequence20-P-CG-Jp-ABD	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	Q	E	A	S	K	E	A	R	A	A	A	F	D	P	S	L	K	G	I	R	S	E	L	S	
Sequence14-NP-GCA-Jp-ABD	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	Q	E	A	S	K	E	A	R	A	A	A	F	D	P	N	L	K	G	I	R	S	E	L	S	
Sequence39-NP-GA-Jp-ABC	K	S	G	N	K	N	K	M	E	A	K	S	Q	A	N	S	Q	K	D	E	I	F	A	L	I	N	K	E	A	N	R	D	A	R	A	I	T	Y	A	Q	N	L	K	G	I	K	R	E	L	S	
Sequence170-NP-UD-Col-ABCC	K	S	G	N	K	N	K	M	E	A	K	A	Q	A	N	S	Q	K	D	E	I	F	A	L	I	N	K	E	A	N	R	D	A	R	A	I	A	Y	A	Q	N	L	K	G	I	K	R	E	L	S	
Sequence76-P-CG-EA-ABD	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	Q	E	A	S	K	E	A	R	A	A	A	F	D	P	N	L	K	G	I	R	S	E	L	S	
Sequence53-NP-GA-EA-ABD	S	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	Q	E	A	S	K	E	A	R	A	A	A	F	D	P	N	L	K	G	I	R	N	E	L	S	
Sequence174-P-CG-Col-ABCC	K	S	G	N	K	N	K	M	E	A	K	A	Q	A	N	S	Q	K	D	E	I	F	A	L	I	N	K	E	A	N	R	D	A	R	A	I	A	Y	S	Q	N	L	K	G	I	K	R	E	L	S	
Sequence33-NP-UG-Jp-ABD	K	S	G																																																



Sequence92-P-CG-Vit-ABD	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	K	E	A	S	K	E	A	R	A	A	A	F	D	P	N	L	K	G	I	R	S	E	L	S				
Sequence49-NP-GA-Jp-ABC	R	N	G	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	E	E	A	G	K	E	A	R	V	A	P	C	V	Q	N	L	K	G	I	R	M	E	L	S				
Sequence181-P-CG-Col-ABCC	K	S	G	N	K	N	K	M	E	A	K	A	Q	A	N	S	Q	K	D	E	I	F	A	L	I	N	K	E	A	N	R	D	A	R	V	I	A	Y	S	Q	N	L	K	G	I	R	R	E	L	S				
Sequence25-NP-GA-Jp-ABD	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	Q	E	A	S	K	E	A	R	A	T	A	F	D	P	N	L	K	G	I	R	I	E	L	S				
Sequence4-P-CG-Jp-ABD	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	S	Q	E	A	S	K	E	A	R	V	A	T	F	D	P	Y	L	K	G	V	R	I	E	L	S				
Sequence121-NP-G-Jp-ABCC	K	S	G	N	K	N	K	M	E	A	K	S	Q	A	N	S	Q	K	D	E	I	F	A	L	I	N	K	E	A	S	R	E	A	R	A	V	A	Y	A	S	N	L	K	G	I	K	R	E	L	S				
4dvy	K	S	G	N	K	N	K	M	E	A	K	A	Q	A	N	S	Q	K	D	E	I	F	A	L	I	N	K	E	A	N	R	D	A	R	A	I	A	Y	T	Q	N	L	K	G	I	K	R	E	L	S				
Sequence186-NP-UP-Jp-ABD	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	Q	E	A	S	K	E	A	R	A	A	A	F	D	P	N	L	K	G	I	R	S	E	L	S				
Sequence62-NP-UD-OCC-ABD	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	E	E	A	G	K	E	A	R	A	A	A	C	V	Q	N	L	K	G	I	R	M	E	L	S				
Sequence9-NP-GCA-Jp-ABD	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	Q	E	A	S	K	E	A	R	A	V	A	F	D	P	S	L	K	G	I	R	S	E	L	S				
Sequence12-NP-UP-Jp-ABD	R	N	D	N	K	N	R	M	E	A	K	T	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	Q	E	A	S	K	E	A	R	A	T	A	F	D	P	N	L	K	G	I	R	S	E	L	S				
Sequence35-NP-GA-Jp-ABABD	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	K	E	A	S	K	E	A	R	A	A	A	F	D	P	N	L	K	G	I	R	S	E	L	S				
Sequence54-NP-GA-OCC-ABC	R	N	G	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	E	E	A	G	K	E	A	R	A	V	A	C	V	Q	N	L	K	G	I	R	M	E	L	S				
Sequence109-P-CG-Jp-ABD	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	K	E	A	S	K	E	A	R	A	A	A	F	D	P	N	L	K	G	I	R	S	E	L	S				
Sequence96-NP-UD-Vit-ABD	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	Q	E	A	S	K	E	A	R	A	A	A	F	D	P	N	L	K	G	V	R	R	E	L	S				
Sequence80-P-CG-EA-ABD	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	Q	E	A	S	K	E	A	R	A	A	A	F	D	P	N	L	K	G	I	R	S	E	L	S				
Sequence82-P-CG-EA-ABD	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	K	E	A	S	K	E	A	R	A	A	A	F	D	P	N	L	K	G	I	R	N	E	L	S				
Sequence10-NP-GCA-Jp-ABD	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	Q	E	A	S	K	E	A	R	A	A	A	F	D	P	S	F	K	G	I	R	S	E	L	S				
Sequence19-NP-UP-Jp-ABBD	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	Q	E	A	S	K	E	A	R	A	A	T	F	D	P	S	L	K	G	I	R	S	E	L	S				
Sequence115-NP-UG-Jp-ABC	K	S	G	N	K	N	K	M	E	A	K	S	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	K	E	A	N	R	D	A	R	A	I	T	Y	A	Q	N	F	K	G	I	G	R	E	L	S				
Sequence45-NP-GA-Jp-ABCC	K	S	G	N	K	N	K	M	E	A	K	S	Q	A	N	S	Q	K	D	G	I	F	M	L	I	N	K	E	A	N	R	D	A	R	A	I	A	Y	A	Q	N	L	K	G	I	K	R	E	L	S				
Sequence119-NP-UG-Jp-ABC	K	S	D	N	K	N	K	M	E	A	K	S	Q	A	N	S	Q	K	D	E	I	F	A	L	I	N	K	E	A	S	R	E	A	R	A	V	I	Y	A	S	N	L	K	G	I	K	R	E	L	S				
Sequence70-NP-GA-Ch-ABD	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	Q	E	A	S	K	E	A	R	A	A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sequence52-NP-UD-EA-ABD	R	N	D	S	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	M	L	I	N	Q	E	A	S	K	E	A	R	A	A	A	F	D	P	N	L	K	G	I	R	N	E	L	S				
Sequence97-P-CG-Vit-ABD	R	D	D	N	K	N	R	M	E	A	K	A	Q	A	H	S	Q	K	D	K	I	S	A	L	I	N	K	E	A	S	K	E	A	R	S	A	A	F	D	P	N	L	K	G	I	R	S	E	L	S				
Sequence94-NP-UD-Vit-ABD	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	K	E	A	S	K	E	A	R	V	A	A	F	D	P	N	L	K	G	I	R	S	E	L	S				
Sequence176-NP-GA-Col-ABCC	K	S	G	N	K	N	K	I	E	A	K	S	Q	A	N	S	Q	K	D	E	I	F	A	L	I	N	K	E	A	N	R	D	A	R	A	I	A	Y	S	Q	N	L	K	G	I	K	R	E	L	S				
Sequence68-NP-D-Am-ABBC	K	S	G	N	K	N	K	M	E	A	K	A	Q	A	N	S	Q	K	D	E	I	F	A	L	I	N	K	E	A	N	R	D	A	R	A	I	A	Y	T	Q	N	L	K	G	I	K	R	E	L	S				
Sequence47-NP-GA-Jp-ABD	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	Q	E	A	S	K	E	A	R	A	A	A	F	D	P	N	L	K	G	I	R	S	E	L	F				
Sequence56-NP-UD-OCC-ABC	K	S	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	I	I	N	E	E	A	G	K	E	A	R	V	A	A	C	V	Q	N	L	K	G	I	R	M	E	L	S				
Sequence31-NP-GA-Jp-ABD	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	Q	E	A	S	K	E	A	R	A	T	A	F	D	P	N	L	K	G	V	R	G	E	L	S				
Sequence46-NP-UD-Jp-ABD	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	Q	E	A	S	K	E	A	R	A	V	A	F	D	P	N	L	K	S	I	R	S	E	L	F				
Sequence102-NP-UG-Vit-ABD	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	S	A	L	I	N	K	E	A	S	K	E	A	R	A	A	A	F	D	Q	N	L	K	G	V	R	S	E	L	S				
Sequence71-P-CG-EA-ABD	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	Q	E	A	S	K	E	A	R	A	A	A	F	D	P	N	L	K	G	I	R	N	E	L	S				
Sequence30-NP-GA-Jp-ABBD	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	K	E	A	S	K	E	A	R	A	A	A	F	D	P	N	L	K	G	I	R	S	E	L	F				
Sequence28-NP-GA-Jp-AABD	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	Q	E	A	S	K	E	A	R	A	A	A	F	D	P	N	L	K	G	I	R	S	E	L	S				
Sequence98-P-CG-Vit-AD	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	K	E	A	S	K	E	A	R	A	V	A	F	D	P	N	L	K	G	I	R	S	E	L	S				
Sequence99-P-CG-Vit-ABD	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	K	E	A	S	K	E	A	R	A	V	A	F	D	P	N	L	K	G	I	R	S	E	L	S				
Sequence24-NP-UD-USA-ABD	R	N	D	N	Q	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	K	E	A	S	K	E	A	R	A	V	A	F	D	P	N	L	K	G	I	R	S	E	L	S				
Sequence124-NP-G-Jp-ABC	K	S	G	N	K	N	K	M	E	A	K	A	Q	A	N	S	Q	K	D	E	I	F	A	L	I	N	K	E	A	N	R	D	A	R	A	I	A	Y	A	Q	N	L	K	G	I	E	R	E	L	S				
Sequence77-P-CG-OCC-ABCC	R	N	G	N	K	N	K	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	I	I	N	E	E	A	G	K	E	A	R	G	A	A	C	V	Q	N	L	K	S	I	R	M	E	L	S				
Sequence113-NP-UD-Jp-ABC	K	S	G	N	K	N	K	M	E	A	K	S	Q	A	N	S	R	K	D	E	I	F	M	L	I	N	K	E	A	N	R	D	A	R	A	I	A	Y	A	Q	N	L	K	G	I	K	R	E	L	S				
Sequence88-NP-UD-Vit-ABD	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	K	E	A	S	K	E	A	R	A	A	A	F	D	P	N	L	K	G	I	R	S	E	L	S				
Sequence100-NP-UD-Vit-ABD	R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	K	E	A	S	K	E	A	R	A	A	A	F	D	P	N	L	K	G	I	R	S	E	L	S				
Sequence137-NP-G-Col-ABCC	K	S	G	N	K	N	K	M	E	A	K	A	Q	A	N	S	Q	K	D	E	I	F	A	L	I	N	K	E	A	N	R	D	A	R	A	I	A	Y	S	Q	N	L	K	G	I	K	R	E	L	S				
Sequence117-NP-G-Jp-ABC	K	S	G	N</																																																		

Sequence187-NP-UG-Jp-ABCCC  
Sequence118-NP-G-Jp-ABD  
Sequence87-NP-UG-Vit-ABD

K	S	G	N	K	N	K	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	K	E	A	N	R	D	A	R	A	I	A	Y	S	Q	N	L	K	G	I	K	R	E	L	S
R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	K	E	A	S	K	E	A	R	A	A	A	F	D	P	N	L	K	G	I	R	S	E	L	S
R	N	D	N	K	N	R	M	E	A	K	A	Q	A	N	S	Q	K	D	K	I	F	A	L	I	N	K	E	A	S	K	E	A	R	V	A	A	F	D	P	N	L	K	G	V	R	S	E	L	S

Sequence140-NP-GA-Col-ABABC  
Sequence123-NP-UD-Jp-ABD  
Sequence111-NP-G-Jp-ABD  
Sequence57-NP-GA-OCC-AB  
Sequence172-P-CG-Col-ABCC  
Sequence110-NP-UD-Jp-ABD  
Sequence95-NP-UD-Vit-ABD  
Sequence107-P-CG-Vit-ABD  
Sequence106-P-CG-Vit-ABD  
Sequence105-NP-UD-Vit-ABD  
Sequence126-NP-UG-Jp-ABC  
Sequence135-P-CG-Col-ABCCC  
Sequence138-NP-GA-Col-ABC  
Sequence13-NP-UP-Jp-ABD  
Sequence11-NP-UP-Jp-ABD  
Sequence50-NP-GA-OCC-ABC  
Sequence26-NP-GA-Jp-ABD  
Sequence55-NP-UD-OCC-ABCCC  
Sequence178-NP-M-Col-ABCC  
Sequence40-NP-GA-Jp-ABD  
Sequence43-NP-GA-Jp-ABD  
Sequence139-NP-UD-Col-ABCC  
Sequence7-P-CG-Jp-ABBD  
Sequence91-P-CG-Vit-ABD  
Sequence29-NP-GA-Jp-ABABD  
Sequence78-P-CG-EA-ABD  
Sequence188-NP-GCA-Jp-AB  
Sequence72-P-CG-EA-ABD  
Sequence79-P-CG-EA-ABD  
Sequence61-NP-UD-OCC-ABC  
Sequence125-NP-UG-Jp-ABCC  
Sequence175-NP-G-Col-ABCC  
Sequence122-NP-G-Jp-ABCC  
Sequence36-NP-GA-Jp-ABD  
Sequence58-NP-UD-OCC-ABC  
Sequence27-NP-GA-Jp-ABBD  
Sequence93-P-CG-Vit-ABD  
Sequence177-NP-M-Col-ABCC  
Sequence182-NP-UD-Col-ABCC  
Sequence114-NP-UG-Jp-ABC  
Sequence74-P-CG-EA-ABD  
Sequence20-P-CG-Jp-ABD  
Sequence14-NP-GCA-Jp-ABD  
Sequence39-NP-GA-Jp-ABC  
Sequence170-NP-UD-Col-ABCC  
Sequence76-P-CG-EA-ABD  
Sequence53-NP-GA-EA-ABD  
Sequence174-P-CG-Col-ABCC  
Sequence33-NP-UG-Jp-ABD  
Sequence60-NP-GA-EA-ABD  
Sequence38-NP-GA-Jp-ABD  
Sequence1-NP-EG-Jp-ABCCC  
Sequence101-P-CG-Vit-ABD  
Sequence64-NP-UD-OCC-ABC  
Sequence81-P-CG-EA-ABD  
Sequence150-NP-DA-Sen-BC

D	K	L	E	N	I	N	K	D	L	K	D	F	N	K	S	F	D	E	F	K	N	G	K	N	K	D	F	S	K	A	E	E	T	L	K	A	L	K	G	S	V	K	D	L	G	I	N	P	-	
D	K	L	E	N	I	N	K	N	L	K	D	F	G	K	S	F	D	E	L	K	N	G	K	N	N	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-	
D	K	L	E	N	I	N	K	N	L	K	D	F	D	K	S	F	D	E	L	K	N	G	K	N	N	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-	
D	K	L	E	N	I	N	K	N	L	K	D	F	G	K	S	F	D	E	L	K	N	G	K	N	N	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-	
D	K	L	E	N	I	N	K	N	L	K	D	F	G	K	S	F	D	E	L	K	N	G	K	N	N	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-	
D	K	L	E	N	V	N	K	N	L	K	D	F	S	K	S	F	D	E	L	K	N	G	K	N	K	D	F	S	K	A	E	E	T	L	K	T	L	K	D	S	V	K	D	L	G	I	N	P	-	
I	N	L	K	I	S	T	R	N	D	L	K	D	F	G	K	S	F	D	E	L	K	N	G	N	N	K	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	L	-
G	K	L	E	K	V	N	K	D	L	K	D	F	S	K	S	F	D	D	F	K	N	G	K	N	K	D	F	S	K	A	E	E	T	L	K	A	L	K	G	S	V	K	D	L	G	I	N	P	-	
D	K	L	E	N	I	N	K	D	L	R	N	F	S	K	S	F	D	E	F	K	N	G	K	N	K	D	F	S	K	A	E	E	T	L	K	A	L	K	G	S	V	K	D	L	G	I	N	P	-	
D	K	L	E	N	I	N	K	N	L	K	D	D	L	G	K	S	F	D	E	L	K	N	G	K	N	N	D	F	S	K	V	E	D	T	F	K	A	L	K	D	S	V	R	D	L	G	I	N	P	-
D	K	L	E	N	I	N	K	N	L	K	D	D	F	G	K	S	F	D	E	F	K	N	G	K	N	K	D	F	S	K	T	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-
D	K	L	E	N	I	N	K	N	L	K	D	D	F	D	K	S	F	D	E	L	K	N	S	K	N	K	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-
D	K	L	E	N	I	N	K	N	L	K	D	N	F	D	K	S	F	D	E	F	K	N	G	K	N	K	D	F	S	K	T	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-
D	K	L	E	N	I	N	K	D	L	R	D	F	G	K	S	F	D	E	F	K	N	G	K	N	N	D	F	S	K	V	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-	
D	K	L	E	N	I	N	K	N	L	K	D	D	F	G	K	S	F	D	E	L	K	N	G	K	N	N	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-
D	K	L	E	N	I	N	K	N	L	K	D	D	F	G	K	S	F	D	E	F	K	N	G	K	N	N	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-
D	K	L	E	N	I	N	K	N	L	K	D	D	F	S	K	S	F	D	E	L	K	N	G	K	N	N	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-
D	K	L	E	N	I	N	K	N	L	K	D	D	F	G	K	S	F	D	E	L	K	N	G	K	N	N	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-
D	K	L	E	N	I	N	K	N	L	K	D	D	F	S	K	S	F	D	E	F	K	N	G	K	N	K	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-
D	K	L	E	N	I	N	K	N	L	K	D	D	F	G	K	S	F	D	E	L	K	N	G	K	N	N	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-
D	K	L	E	N	I	N	K	N	L	K	D	D	F	S	K	S	F	D	E	F	K	N	G	K	N	K	D	F	S	K	A	E	E	T	L	K	A	L	K	N	S	V	K	D	L	G	I	N	P	-
D	K	L	E	N	I	N	K	N	L	K	D	D	F	G	K	S	F	D	E	L	K	N	G	K	N	N	D	F	S	K	A	E	E	T	L	K	A	L	K	D	L	V	K	D	L	G	I	N	P	-
N	K	L	E	N	I	N	K	N	L	K	D	D	F	G	K	S	F	D	E	L	K	N	G	K	N	K	D	F	S	K	A	E	E	T	L	K	A	L	K	D	L	V	K	D	L	G	I	N	P	-
D	K	L	E	N	V	N	K	D	L	K	D	D	F	S	K	S	F	D	E	F	K	N	G	K	N	K	D	F	S	K	T	E	E	T	L	K	A	L	K	G	S	V	K	D	L	G	I	N	P	-
D	K	L	E	N	V	N	K	N	L	K	D	D	F	S	K	S	F	D	E	F	K	N	G	K	N	K	D	F	S	K	T	E	E	T	L	K	A	L	K	G	S	V	K	D	L	G	I	N	P	-
D	K	L	E	N	I	N	K	N	L	K	D	D	F	D	K	S	F	D	E	L	K	N	G	K	N	N	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-
D	K	L	E	N	I	N	K	N	L	K	D	D	F	G	K	S	F	D	E	L	K	N	G	K	N	N	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-
D	K	L	E	N	I	N	K	N	L	K	D	D	F	S	K	S	F	D	E	F	K	N	G	K	N	K	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-
D	K	L	E	N	I	N	K	N	L	K	D	D	F	S	K	S	F	D	E	F	K	N	G	K	N	K	D	F	S	K	A	E	E	T	L	K	A	L	K	G	S	V	K	D	L	G	I	N	P	-
D	K	L	E	N	I	N	K	N	L	K	D	D	F	S	K	S	F	D	E	F	K	N	G	K	N	K	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-
D	K	L	E	N	I	N	K	N	L	K	D	D	F	S	K	S	F	D	E	F	K	N	G	K	N	N	D	F	S	K	A	E	E	T	L	K	A	L	K	G	S	V	K	D	L	G	I	N	P	-
D	K	L	E	N	I	N	K	N	L	K	D	D	F	S	K	S	F	D	E	L	K	N	G	K	N	N	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-
D	K	L	E	N	I	N	K	N	L	K	D	D	F	S	K	S	F	D	E	F	K	N	G	K	N	K	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-
D	K	L	E	N	I	N	K	N	L	K	D	D	F	S	K	S	F	D	E	L	K	N	G	K	N	N	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-
D	K	L	E	N	I	N	K	N	L	K	D	D	F	S	K	S	F	D	E	L	K	N	G	K	N	N	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-
D	K	L	E	N	I	N	K	N	L	K	D	D	F	S	K	S	F	D	E	F	K	N	G	K	N	K	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-
D	K	L	E	N	I	N	K	N	L	K	D	D	F	S	K	S	F	D	E	F	K	N	G	K	N	N	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-
D	K	L	E	N	I	N	K	N	L	K	D	D	F	S	K	S	F	D	E	L	K	N	G	K	N	N	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-
D	K	L	E	N	I	N	K	N	L	K	D	D	F	S	K	S	F	D	E	F	K	N	G	K	N	K	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-
D	K	L	E	N	I	N	K	N	L	K	D	D	F	S	K	S	F	D	E	F	K	N	G	K	N	N	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-
D	K	L	E	N	I	N	K	N	L	K	D	D	F	S	K	S	F	D	E	L	K	N	G	K	N	N	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-
D	K	L	E	N	I	N	K	N	L	K	D	D	F	S	K	S	F	D	E	F	K	N	G	K	N	K	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-
D	K	L	E	N	I	N	K	N	L	K	D	D	F	S	K	S	F	D	E	F	K	N	G	K	N	K	D	F	S	K	A	E	E	T	L</															

Sequence90-NP-UD-Vit-ABD	D	K	L	E	N	I	N	K	N	L	K	D	F	G	K	S	F	D	E	L	K	N	G	N	N	N	D	F	S	K	A	E	E	T	L	K	A	L	Q	D	S	V	K	D	L	G	I	N	P	-		
Sequence136-P-CG-Col-AACC	D	K	L	E	N	I	N	K	D	L	K	D	F	S	K	S	F	D	E	F	K	N	G	K	N	K	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-		
Sequence15-NP-UP-Jp-ABD	D	K	L	E	N	I	N	K	N	L	K	D	F	G	K	S	F	D	E	L	K	N	G	K	N	N	D	F	S	K	A	E	E	T	L	K	A	L	K	D	L	V	K	D	L	G	I	N	P	-		
Sequence108-NP-UD-Vit-ABD	D	K	L	E	N	I	N	K	N	L	K	D	F	G	K	S	F	D	E	L	K	N	G	K	N	N	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-		
Sequence104-P-CG-OCC-ABCC	D	K	L	E	N	V	N	K	N	L	K	D	F	S	K	S	F	D	E	F	K	N	G	K	N	K	D	F	S	K	A	E	E	T	L	K	A	L	K	D	G	L	V	K	D	L	G	I	N	P	-	
Sequence179-NP-UD-Col-ABCC	D	K	L	E	N	I	N	K	D	L	R	N	F	S	K	S	F	D	E	F	K	N	G	K	N	K	D	F	S	K	A	E	E	T	L	K	A	L	K	G	S	V	K	D	L	G	I	N	P	-		
Sequence37-NP-GA-Jp-ABCCC	D	K	L	E	N	I	N	K	N	L	K	D	F	D	K	S	F	D	E	F	K	N	G	K	N	K	D	F	S	K	T	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-		
Sequence89-NP-UD-Vit-ABD	D	K	L	E	N	I	N	K	N	L	K	D	F	G	K	S	F	D	E	L	K	N	G	K	N	N	D	F	S	K	A	E	E	T	L	N	A	L	K	D	S	V	K	D	L	G	I	N	P	-		
Sequence92-P-CG-Vit-ABD	D	K	L	E	N	I	N	K	N	L	K	D	F	G	K	S	F	D	E	L	K	N	G	K	N	N	D	F	S	K	A	E	E	T	L	N	A	L	K	D	S	V	K	D	L	G	I	N	P	-		
Sequence49-NP-GA-Jp-ABC	D	K	L	E	N	I	N	K	N	L	K	D	F	D	K	S	F	D	E	F	K	N	G	K	N	K	D	F	S	K	T	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-		
Sequence181-P-CG-Col-ABCC	D	K	L	E	N	I	N	K	D	L	K	D	F	S	K	S	F	D	E	F	K	N	G	K	N	K	D	F	S	K	A	E	E	T	L	K	A	L	K	G	S	V	K	D	L	G	I	N	P	-		
Sequence25-NP-GA-Jp-ABD	D	K	L	E	N	I	N	K	N	L	K	D	F	G	K	S	F	D	E	L	K	N	G	K	N	N	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-		
Sequence4-P-CG-Jp-ABD	D	K	L	E	N	I	N	K	N	L	K	D	F	G	K	S	F	D	E	L	K	S	G	K	N	N	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-		
Sequence121-NP-G-Jp-ABCC	D	K	L	E	N	V	N	K	N	L	K	D	F	S	K	S	F	D	E	F	K	N	G	K	N	K	D	F	S	K	A	E	E	T	L	K	A	L	K	G	S	V	K	D	L	G	I	N	P	-		
4dvy	D	K	L	E	K	I	S	K	D	L	K	D	F	S	K	S	F	D	E	F	K	N	G	K	N	K	D	F	S	K	A	E	E	T	L	K	A	L	K	G	S	V	K	D	L	G	I	N	P	-		
Sequence186-NP-UP-Jp-ABD	D	K	L	E	N	I	N	K	N	L	K	D	F	G	K	S	F	D	E	L	K	S	G	K	N	K	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-		
Sequence62-NP-UD-OCC-ABD	D	K	L	E	N	I	N	K	N	L	K	D	F	D	K	S	F	D	E	F	K	N	G	K	N	K	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-		
Sequence9-NP-GCA-Jp-ABD	D	K	L	E	N	I	N	K	N	L	K	D	F	G	K	S	F	D	E	L	K	N	G	K	N	N	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	A	I	N	P	-		
Sequence12-NP-UP-Jp-ABD	D	K	L	E	N	I	N	K	N	L	K	D	F	G	K	S	L	D	E	L	K	N	G	K	N	N	D	F	S	K	V	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-		
Sequence35-NP-GA-Jp-ABABD	D	K	L	E	N	I	N	K	N	L	K	D	F	G	K	S	F	D	E	L	K	N	G	K	N	N	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-		
Sequence54-NP-GA-OCC-ABC	D	K	L	E	N	I	N	K	N	L	K	D	F	D	K	S	F	D	E	F	K	N	G	K	N	K	D	F	S	K	T	E	E	T	L	K	A	L	K	S	L	V	K	D	S	G	I	S	L	-	-	
Sequence109-P-CG-Jp-ABD	D	K	L	E	N	I	N	K	N	L	K	D	F	G	K	S	F	D	E	L	K	N	G	K	N	N	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-		
Sequence96-NP-UD-Vit-ABD	D	K	L	E	N	I	S	K	N	L	K	D	F	G	K	S	F	D	E	L	K	N	G	K	N	N	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-		
Sequence80-P-CG-EA-ABD	D	K	L	E	N	I	N	K	N	L	K	D	F	G	K	S	F	D	E	L	K	N	G	K	N	N	D	F	S	K	V	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-		
Sequence82-P-CG-EA-ABD	D	K	L	E	N	I	N	K	N	L	K	D	F	G	K	S	F	D	E	L	K	N	G	K	N	N	D	F	N	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-		
Sequence10-NP-GCA-Jp-ABD	D	K	L	E	N	I	N	K	N	L	K	D	F	G	K	S	F	D	E	L	K	N	G	K	N	N	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-		
Sequence19-NP-UP-Jp-ABBD	D	K	L	E	N	I	N	K	N	L	K	D	F	G	K	S	F	D	E	L	K	N	G	-	N	N	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	A	I	N	P	-		
Sequence115-NP-UG-Jp-ABC	D	K	L	E	N	I	N	K	D	L	K	D	F	D	K	S	F	D	E	F	K	N	G	K	N	K	D	F	S	K	A	E	E	T	L	K	A	L	K	G	S	V	K	D	L	G	I	N	P	-		
Sequence45-NP-GA-Jp-ABCC	D	K	L	E	N	V	N	K	N	L	K	D	F	S	K	S	F	D	E	F	K	N	G	K	N	K	D	F	S	K	A	E	E	T	L	K	A	L	K	G	S	V	K	D	L	G	I	N	P	-		
Sequence119-NP-UG-Jp-ABC	D	K	L	E	N	V	N	K	N	L	K	D	F	N	K	S	F	D	E	F	K	N	G	K	N	K	D	F	S	K	A	E	E	T	L	K	A	L	K	G	S	V	K	D	L	G	I	S	P	-	-	
Sequence70-NP-GA-Ch-ABD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Sequence52-NP-UD-EA-ABD	D	K	L	E	N	I	N	K	N	L	K	D	F	G	K	S	F	D	E	L	K	N	G	K	N	N	D	F	N	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-	-	
Sequence97-P-CG-Vit-ABD	D	K	L	E	N	I	N	K	N	L	K	V	F	G	K	S	F	D	E	L	K	N	G	T	N	S	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-	-	
Sequence94-NP-UD-Vit-ABD	D	K	L	E	N	I	D	K	N	L	K	D	F	G	Q	S	F	D	E	L	K	N	G	K	N	N	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-	-	
Sequence176-NP-GA-Col-ABCC	D	K	L	E	N	I	N	K	D	L	K	D	F	S	K	S	F	D	E	F	K	N	G	K	N	K	D	F	S	K	A	E	E	T	L	K	A	L	K	G	S	V	K	D	L	G	I	N	P	-	-	
Sequence68-NP-D-Am-ABBC	D	K	L	E	N	V	N	K	N	L	K	D	F	S	K	S	F	D	E	F	K	N	G	K	N	K	D	F	S	K	A	E	E	T	L	K	A	L	K	G	S	V	K	D	L	G	I	N	P	-	-	
Sequence47-NP-GA-Jp-ABD	D	K	L	E	N	I	N	K	D	L	K	D	F	G	K	S	F	D	E	L	K	N	G	K	N	N	D	F	N	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-	-	
Sequence56-NP-UD-OCC-ABC	D	K	L	E	N	I	N	K	N	L	K	D	F	D	K	S	F	D	E	F	K	N	G	K	N	K	D	F	S	K	T	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-	-	
Sequence31-NP-GA-Jp-ABD	D	K	L	E	N	I	N	K	N	L	K	D	F	G	K	S	F	D	E	L	K	S	G	K	N	K	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-	-	
Sequence46-NP-UD-Jp-ABD	D	K	L	E	N	I	N	K	N	L	K	N	F	G	K	S	F	D	E	L	K	N	G	K	N	N	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-	-	
Sequence102-NP-UG-Vit-ABD	D	K	L	E	T	I	N	K	N	L	K	D	F	G	N	S	F	D	E	L	K	N	G	K	N	K	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-	-	
Sequence71-P-CG-EA-ABD	D	K	L	E	N	I	N	K	N	L	K	D	F	G	K	S	F	D	E	L	K	N	G	K	N	N	D	F	N	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-	-	
Sequence30-NP-GA-Jp-ABBD	D	K	L	E	N	I	N	K	N	L	K	D	F	G	K	S	F	D	E	L	K	N	G	K	N	N	D	F	S	K	A	E	E	T	L	K	A	L	K	D	L	V	K	D	L	A	I	N	P	-	-	
Sequence28-NP-GA-Jp-AABD	D	K	L	E	N	I	N	K	N	L	K	D	F	G	K	S	F	D	E	L	K	N	G	K	N	N	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-	-	
Sequence98-P-CG-Vit-AD	D	K	L	E	N	I	N	K	N	L	K	D	F	G	K	S	F	D	E	L	K	N	G	K	N	K	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	Q	S	R	-	-
Sequence99-P-CG-Vit-ABD	D	K	L	A	N	I	N	K	N	L	K	D	F	G	K																																					



Sequence34-NP-UD-Jp-ABDD  
Sequence21-P-CG-Jp-ABD  
Sequence32-NP-GA-Jp-ABD  
Sequence116-NP-UD-Jp-ABC  
Sequence8-NP-GCA-Jp-ABD  
Sequence83-P-CG-EA-ABD  
Sequence48-NP-UD-OCC-ABC  
Sequence120-NP-G-Jp-ABC  
Sequence187-NP-UG-Jp-ABCCC  
Sequence118-NP-G-Jp-ABD  
Sequence87-NP-UG-Vit-ABD

D	K	L	E	N	I	N	K	N	L	K	D	F	G	K	S	F	D	E	L	K	N	G	K	N	N	D	F	S	K	A	E	E	T	L	K	V	L	K	D	S	V	K	D	L	A	I	N	P	-
D	K	L	E	N	I	N	K	N	L	K	D	F	G	K	S	F	D	E	L	K	S	G	K	N	N	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-
D	K	L	E	N	I	N	K	N	L	K	D	F	G	K	S	F	D	D	F	K	N	G	K	N	N	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-
D	K	L	E	N	I	N	K	D	L	K	D	F	D	K	S	F	D	E	F	K	N	G	K	N	K	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-
D	K	L	E	N	I	N	K	N	L	K	D	F	G	K	S	F	D	E	L	K	N	G	K	N	N	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-
D	K	L	E	N	I	N	K	N	L	K	D	F	D	K	S	F	D	E	F	K	N	G	K	N	K	D	F	S	K	T	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-
D	K	L	E	N	V	N	K	N	L	K	D	F	S	K	S	F	D	E	F	K	N	G	K	N	K	D	F	S	K	A	E	E	T	L	K	A	L	K	G	S	V	K	D	L	G	I	N	P	-
D	K	L	E	K	I	N	K	D	L	K	D	F	S	K	S	F	D	E	F	K	N	G	K	N	K	D	F	S	K	A	E	E	T	L	K	A	L	K	G	S	V	K	D	L	G	I	N	P	-
D	K	L	E	N	I	N	K	N	L	K	D	F	G	K	S	F	D	D	F	K	N	G	K	N	N	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-
D	K	L	E	N	I	N	K	N	L	K	D	F	G	K	S	F	D	E	L	K	N	D	K	N	K	D	F	S	K	A	E	E	T	L	K	A	L	K	D	S	V	K	D	L	G	I	N	P	-

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Sequence140-NP-GA-Col-ABABC  
Sequence123-NP-UD-Jp-ABD  
Sequence111-NP-G-Jp-ABD  
Sequence57-NP-GA-OCC-AB  
Sequence172-P-CG-Col-ABCC  
Sequence110-NP-UD-Jp-ABD  
Sequence95-NP-UD-Vit-ABD  
Sequence107-P-CG-Vit-ABD  
Sequence106-P-CG-Vit-ABD  
Sequence105-NP-UD-Vit-ABD  
Sequence126-NP-UG-Jp-ABC  
Sequence135-P-CG-Col-ABCCC  
Sequence138-NP-GA-Col-ABC  
Sequence13-NP-UP-Jp-ABD  
Sequence11-NP-UP-Jp-ABD  
Sequence50-NP-GA-OCC-ABC  
Sequence26-NP-GA-Jp-ABD  
Sequence55-NP-UD-OCC-ABCCC  
Sequence178-NP-M-Col-ABCC  
Sequence40-NP-GA-Jp-ABD  
Sequence43-NP-GA-Jp-ABD  
Sequence139-NP-UD-Col-ABCC  
Sequence7-P-CG-Jp-ABBD  
Sequence91-P-CG-Vit-ABD  
Sequence29-NP-GA-Jp-ABABD  
Sequence78-P-CG-EA-ABD  
Sequence188-NP-GCA-Jp-AB  
Sequence72-P-CG-EA-ABD  
Sequence79-P-CG-EA-ABD  
Sequence61-NP-UD-OCC-ABC  
Sequence125-NP-UG-Jp-ABCC  
Sequence175-NP-G-Col-ABCC  
Sequence122-NP-G-Jp-ABCC  
Sequence36-NP-GA-Jp-ABD  
Sequence58-NP-UD-OCC-ABC  
Sequence27-NP-GA-Jp-ABBD  
Sequence93-P-CG-Vit-ABD  
Sequence177-NP-M-Col-ABCC  
Sequence182-NP-UD-Col-ABCC  
Sequence114-NP-UG-Jp-ABC  
Sequence74-P-CG-EA-ABD  
Sequence20-P-CG-Jp-ABD  
Sequence14-NP-GCA-Jp-ABD  
Sequence39-NP-GA-Jp-ABC  
Sequence170-NP-UD-Col-ABCC  
Sequence76-P-CG-EA-ABD  
Sequence53-NP-GA-EA-ABD  
Sequence174-P-CG-Col-ABCC

E	W	I	S	K	V	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	L	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
E	W	I	S	K	I	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
E	W	I	S	K	I	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
E	W	I	S	K	V	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	V	K	D	V	-	I	I	N	Q	K	I	T	
E	W	I	S	K	I	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	N	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
E	W	I	S	K	I	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
E	W	I	S	K	I	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	N	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
E	W	I	S	K	V	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	V	K	D	V	-	I	I	N	Q	K	V	T	
E	W	I	S	K	V	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	A	-	I	F	N	Q	K	I	T	
E	W	I	S	I	I	E	Y	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
E	W	I	S	K	I	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
E	W	I	S	K	V	E	N	L	N	T	A	L	N	E	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
E	W	I	S	K	I	E	N	L	N	A	A	L	N	D	F	K	N	S	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
E	W	I	S	K	V	E	N	L	N	T	A	L	N	E	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
E	W	I	S	K	V	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	L	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	V	K	D	V	-	I	I	N	D	Q	K	I	T
E	W	I	S	K	I	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
E	W	I	S	K	I	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
E	W	I	S	K	I	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
E	W	I	S	K	V	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	V	K	D	V	-	I	I	N	Q	K	V	T	
E	W	I	S	K	I	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
E	W	I	S	K	I	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
E	W	I	S	K	V	E	N	L	N	A	A	L	N	D	F	K	N	S	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
E	W	I	S	K	V	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	V	K	D	A	-	I	F	N	Q	K	I	T	
E	W	I	S	K	V	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	A	-	I	F	N	Q	K	I	T	
E	W	I	S	K	I	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
E	W	I	S	K	I	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
E	W	I	S	K	I	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
E	W	I	S	K	V	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	V	K	D	V	-	I	I	N	Q	K	V	T	
E	W	I	S	K	I	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
E	W	I	S	K	I	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
E	W	I	S	K	V	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
E	W	I	S	K	V	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	V	K	D	A	-	I	F	N	Q	K	I	T	
E	W	I	S	K	V	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	A	-	I	F	N	Q	K	I	T	
E	W	I	S	K	I	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
E	W	I	S	K	I	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
E	W	I	S	K	I	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
E	W	I	S	K	I	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
E	W	I	S	K	V	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
E	W	I	S	K	V	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	A	-	I	F	N	Q	K	I	T	
E	W	I	S	K	V	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
E	W	I	S	K	V	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
E	W	I	S	K	V	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
E	W	I	S	K	V	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
E	W	I	S	K	V	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
E	W	I	S	K	V	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
E	W	I	S	K	V	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
E	W	I	S	K	V	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
E	W	I	S	K	V	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
E	W	I	S	K	V	E	N																																											

Sequence33-NP-UG-Jp-ABD	E	W	I	S	K	V	E	N	L	N	A	A	L	N	E	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	A	-	I	F	N	Q	K	I	T	
Sequence60-NP-GA-EA-ABD	E	W	I	S	K	I	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
Sequence38-NP-GA-Jp-ABD	E	W	I	S	K	I	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
Sequence1-NP-EG-Jp-ABCCC	E	W	I	S	K	V	E	N	L	N	A	A	L	N	E	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
Sequence101-P-CG-Vit-ABD	E	W	I	S	K	I	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	N	D	F	S	K	-	V	T	Q	V	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
Sequence64-NP-UD-OCC-ABC	E	W	I	S	K	V	E	N	L	N	T	A	L	N	E	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
Sequence81-P-CG-EA-ABD	E	W	I	S	K	I	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
Sequence150-NP-DA-Sen-BC	E	W	I	S	K	V	E	N	L	N	A	A	L	N	E	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	V	K	D	V	-	I	I	N	Q	K	V	T	
Sequence90-NP-UD-Vit-ABD	E	W	I	S	K	I	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	N	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
Sequence136-P-CG-Col-AAACC	E	W	I	S	K	V	E	N	L	N	A	A	L	N	E	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
Sequence15-NP-UP-Jp-ABD	E	W	I	S	K	I	E	N	L	N	T	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
Sequence108-NP-UD-Vit-ABD	E	W	I	S	K	I	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
Sequence104-P-CG-OCC-ABCC	E	W	I	S	K	V	K	T	L	M	Q	L	L	N	E	F	K	N	S	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	V	K	D	V	-	I	I	N	Q	K	I	T	
Sequence179-NP-UD-Col-ABCC	E	W	I	S	K	V	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	A	-	I	F	N	Q	K	I	T	
Sequence37-NP-GA-Jp-ABCCC	E	W	I	S	K	V	E	N	L	N	T	A	L	N	E	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
Sequence89-NP-UD-Vit-ABD	E	W	I	S	K	I	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
Sequence92-P-CG-Vit-ABD	E	W	I	S	K	L	K	D	L	N	A	A	L	N	D	F	K	N	G	K	N	S	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
Sequence49-NP-GA-Jp-ABC	E	W	I	S	K	V	E	N	L	N	T	A	L	N	E	F	K	N	G	K	N	K	D	F	S	K	-	V	I	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
Sequence181-P-CG-Col-ABCC	E	W	I	S	K	V	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
Sequence25-NP-GA-Jp-ABD	E	W	I	S	K	I	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
Sequence4-P-CG-Jp-ABD	E	W	I	S	K	I	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
Sequence121-NP-G-Jp-ABCC	E	W	I	S	K	V	E	N	L	N	A	A	L	N	E	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	V	K	D	V	-	I	I	N	Q	K	I	T	
4dvy	E	W	I	S	K	V	E	N	L	N	A	A	L	N	E	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	V	K	D	V	-	I	I	N	Q	K	V	T	
Sequence186-NP-UP-Jp-ABD	E	W	I	S	K	I	E	N	L	N	T	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
Sequence62-NP-UD-OCC-ABD	E	W	I	S	K	V	E	N	L	N	T	A	L	N	E	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	E	I	T	
Sequence9-NP-GCA-Jp-ABD	E	W	I	S	K	I	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
Sequence12-NP-UP-Jp-ABD	E	W	I	S	K	I	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
Sequence35-NP-GA-Jp-ABABD	E	W	I	S	K	I	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
Sequence54-NP-GA-OCC-ABC	E	W	I	S	K	V	E	N	L	N	T	A	L	N	E	F	K	N	G	K	N	K	D	F	S	K	-	V	I	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
Sequence109-P-CG-Jp-ABD	E	W	I	S	K	I	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
Sequence96-NP-UD-Vit-ABD	E	W	I	S	E	I	E	N	L	N	A	A	L	N	D	F	K	N	G	K	Y	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
Sequence80-P-CG-EA-ABD	E	W	I	S	K	I	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	I	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
Sequence82-P-CG-EA-ABD	E	W	I	S	K	I	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
Sequence10-NP-GCA-Jp-ABD	E	W	I	S	K	I	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
Sequence19-NP-UP-Jp-ABBD	E	W	I	S	K	I	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
Sequence115-NP-UG-Jp-ABC	E	W	I	S	K	V	E	N	L	N	A	A	L	N	E	F	K	S	G	K	D	K	D	F	S	K	-	V	T	Q	A	K	R	D	L	E	N	S	G	K	D	V	-	I	I	N	Q	K	I	T	
Sequence45-NP-GA-Jp-ABCC	E	W	I	S	K	V	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	A	-	I	F	N	Q	K	I	T	
Sequence119-NP-UG-Jp-ABC	E	W	I	S	K	V	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	V	K	D	V	-	I	I	N	Q	K	I	T	
Sequence70-NP-GA-Ch-ABD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
Sequence52-NP-UD-EA-ABD	E	W	I	S	K	I	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
Sequence97-P-CG-Vit-ABD	E	W	I	S	K	I	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
Sequence94-NP-UD-Vit-ABD	E	W	I	S	K	I	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	N	G	F	Q	Q	G	-	N	T	S	P	K	A	T	L	K	I	P	L	R	M	C	-	S	L	I	K	K	V	T
Sequence176-NP-GA-Col-ABCC	E	W	I	S	K	V	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	V	K	D	V	-	I	I	N	Q	K	V	T	
Sequence68-NP-D-Am-ABBC	E	W	I	S	K	V	E	N	L	N	A	A	L	N	E	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
Sequence47-NP-GA-Jp-ABD	E	W	I	S	K	I	E	N	L	N	A	A	L	N	E	L	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T	
Sequence56-NP-UD-OCC-ABC	E	W	I	S	K	V	E	N	L																																										

Sequence117-NP-G-Jp-ABC  
Sequence171-NP-UD-Col-ABCC  
Sequence180-P-CG-Col-ABC  
Sequence112-P-CG-Jp-ABCC  
Sequence127-NP-UD-Jp-ABC  
Sequence51-NP-GA-OCC-ABC  
Sequence73-P-CG-EA-ABD  
Sequence183-NP-UD-Col-ABD  
Sequence34-NP-UD-Jp-ABDD  
Sequence21-P-CG-Jp-ABD  
Sequence32-NP-GA-Jp-ABD  
Sequence116-NP-UD-Jp-ABC  
Sequence8-NP-GCA-Jp-ABD  
Sequence83-P-CG-EA-ABD  
Sequence48-NP-UD-OCC-ABC  
Sequence120-NP-G-Jp-ABC  
Sequence187-NP-UG-Jp-ABCCC  
Sequence118-NP-G-Jp-ABD  
Sequence87-NP-UG-Vit-ABD

E	W	I	S	K	V	E	N	L	N	A	A	L	N	E	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	V	K	D	V	-	I	I	N	Q	K	I	T
E	W	I	S	K	V	E	N	L	N	A	A	L	N	E	F	K	N	G	K	N	R	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	V	K	D	V	-	I	I	N	Q	K	I	T
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E	W	I	S	K	I	E	N	L	N	A	A	L	N	D	F	K	N	G	K	N	K	D	F	S	K	-	V	T	Q	A	K	S	D	L	E	N	S	I	K	D	V	-	I	I	N	Q	K	I	T
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Sequence140-NP-GA-Col-ABABC  
Sequence123-NP-UD-Jp-ABD  
Sequence111-NP-G-Jp-ABD  
Sequence57-NP-GA-OCC-AB  
Sequence172-P-CG-Col-ABCC  
Sequence110-NP-UD-Jp-ABD  
Sequence95-NP-UD-Vit-ABD  
Sequence107-P-CG-Vit-ABD  
Sequence106-P-CG-Vit-ABD  
Sequence105-NP-UD-Vit-ABD  
Sequence126-NP-UG-Jp-ABC  
Sequence135-P-CG-Col-ABCCC  
Sequence138-NP-GA-Col-ABC  
Sequence13-NP-UP-Jp-ABD  
Sequence11-NP-UP-Jp-ABD  
Sequence50-NP-GA-OCC-ABC  
Sequence26-NP-GA-Jp-ABD  
Sequence55-NP-UD-OCC-ABCCC  
Sequence178-NP-M-Col-ABCC  
Sequence40-NP-GA-Jp-ABD  
Sequence43-NP-GA-Jp-ABD  
Sequence139-NP-UD-Col-ABCC  
Sequence7-P-CG-Jp-ABBD  
Sequence91-P-CG-Vit-ABD  
Sequence29-NP-GA-Jp-ABABD  
Sequence78-P-CG-EA-ABD  
Sequence188-NP-GCA-Jp-AB  
Sequence72-P-CG-EA-ABD  
Sequence79-P-CG-EA-ABD  
Sequence61-NP-UD-OCC-ABC  
Sequence125-NP-UG-Jp-ABCC  
Sequence175-NP-G-Col-ABCC  
Sequence122-NP-G-Jp-ABCC  
Sequence36-NP-GA-Jp-ABD  
Sequence58-NP-UD-OCC-ABC  
Sequence27-NP-GA-Jp-ABBD  
Sequence93-P-CG-Vit-ABD  
Sequence177-NP-M-Col-ABCC  
Sequence182-NP-UD-Col-ABCC  
Sequence114-NP-UG-Jp-ABC

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Sequence74-P-CG-EA-ABD	D	K	V	D	N	L	N	Q	A	V	S	E	T	K	L	T	G	D	F	S	K	V	E	Q	A	L	A	E	L	K	N	L	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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Sequence122-NP-G-Jp-ABCC  
Sequence36-NP-GA-Jp-ABD  
Sequence58-NP-UD-OCC-ABC  
Sequence27-NP-GA-Jp-ABBD  
Sequence93-P-CG-Vit-ABD  
Sequence177-NP-M-Col-ABCC  
Sequence182-NP-UD-Col-ABCC  
Sequence114-NP-UG-Jp-ABC  
Sequence74-P-CG-EA-ABD  
Sequence20-P-CG-Jp-ABD  
Sequence14-NP-GCA-Jp-ABD  
Sequence39-NP-GA-Jp-ABC  
Sequence170-NP-UD-Col-ABCC  
Sequence76-P-CG-EA-ABD  
Sequence53-NP-GA-EA-ABD  
Sequence174-P-CG-Col-ABCC  
Sequence33-NP-UG-Jp-ABD  
Sequence60-NP-GA-EA-ABD  
Sequence38-NP-GA-Jp-ABD  
Sequence1-NP-EG-Jp-ABCCC  
Sequence101-P-CG-Vit-ABD  
Sequence64-NP-UD-OCC-ABC  
Sequence81-P-CG-EA-ABD  
Sequence150-NP-DA-Sen-BC  
Sequence90-NP-UD-Vit-ABD  
Sequence136-P-CG-Col-AACC  
Sequence15-NP-UP-Jp-ABD  
Sequence108-NP-UD-Vit-ABD  
Sequence104-P-CG-OCC-ABCC  
Sequence179-NP-UD-Col-ABCC  
Sequence37-NP-GA-Jp-ABCCC  
Sequence89-NP-UD-Vit-ABD  
Sequence92-P-CG-Vit-ABD  
Sequence49-NP-GA-Jp-ABC  
Sequence181-P-CG-Col-ABCC  
Sequence25-NP-GA-Jp-ABD  
Sequence4-P-CG-Jp-ABD  
Sequence121-NP-G-Jp-ABCC  
4dvy  
Sequence186-NP-UP-Jp-ABD  
Sequence62-NP-UD-OCC-ABD  
Sequence9-NP-GCA-Jp-ABD  
Sequence12-NP-UP-Jp-ABD  
Sequence35-NP-GA-Jp-ABABD  
Sequence54-NP-GA-OCC-ABC  
Sequence109-P-CG-Jp-ABD  
Sequence96-NP-UD-Vit-ABD  
Sequence80-P-CG-EA-ABD  
Sequence82-P-CG-EA-ABD  
Sequence10-NP-GCA-Jp-ABD  
Sequence19-NP-UP-Jp-ABBD  
Sequence115-NP-UG-Jp-ABC  
Sequence45-NP-GA-Jp-ABCC  
Sequence119-NP-UG-Jp-ABC  
Sequence70-NP-GA-Ch-ABD  
Sequence52-NP-UD-EA-ABD  
Sequence97-P-CG-Vit-ABD  
Sequence94-NP-UD-Vit-ABD  
Sequence176-NP-GA-Col-ABCC  
Sequence68-NP-D-Am-ABBC  
Sequence47-NP-GA-Jp-ABD

K	K	S	E	I	Y	Q	S	V	K	N	G	V	N	G	T	L	V	G	N	G	L	S	G	I	E	A	T	A	L	A	K	N	F	S	D	I	K	K	E	L	N	E	K	F	-	-	-	-	-										
K	N	S	D	L	Q	K	S	V	K	N	G	V	N	G	T	L	V	G	N	G	L	S	K	T	E	E	A	T	A	L	T	K	N	F	S	D	I	I	R	K	K	E	L	N	E	K	-	-	-	-	-								
K	N	S	K	L	Y	Q	S	V	K	N	G	V	N	G	T	L	V	G	N	G	L	S	K	T	E	E	A	T	A	L	T	K	N	F	S	D	I	I	R	K	K	E	L	N	E	K	-	-	-	-	-								
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K	N	S	D	L	Q	K	S	V	K	N	G	V	N	G	T	L	V	G	N	G	L	S	K	T	E	E	A	T	T	L	T	K	N	F	S	D	I	I	R	K	K	E	L	N	E	K	L	F	G	N	S	N	N	N	N				
K	N	S	D	L	Q	K	S	V	K	N	G	V	N	G	T	L	V	G	N	G	L	S	K	A	E	E	A	T	T	L	T	S	K	N	F	S	D	I	I	R	K	K	E	L	N	E	K	L	F	G	N	S	N	N	N				
K	N	S	E	I	Y	Q	S	V	K	N	G	V	N	G	T	L	V	G	N	G	L	S	Q	A	E	E	A	T	T	L	S	K	N	F	S	D	I	I	K	K	E	L	N	-	-	-	-	-	-	-	-	-	-						
K	N	S	D	L	Q	K	S	V	K	N	G	V	N	G	T	L	V	G	N	G	L	S	K	T	E	A	T	T	L	T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-							
K	N	S	E	I	Y	Q	S	V	K	N	G	V	N	G	T	L	V	G	N	G	L	S	G	I	E	A	T	A	L	A	K	N	F	S	D	I	I	R	K	K	E	L	N	E	K	L	-	-	-	-	-	-	-	-	-				
K	N	S	D	L	Q	K	S	V	K	N	G	V	N	G	T	L	V	G	N	G	L	S	K	T	E	A	T	T	L	T	K	N	N	F	S	D	I	I	R	K	K	E	L	N	E	K	L	F	G	N	S	N	N	N					
K	N	S	D	L	Q	-	S	V	R	D	S	V	R	G	T	L	V	G	N	G	L	S	K	T	E	E	A	T	A	L	A	K	N	N	F	S	D	I	I	R	K	K	E	L	N	E	K	L	F	G	N	S	N	N					
K	N	S	K	L	Y	Q	S	V	K	N	G	V	N	G	T	L	V	G	N	G	L	S	G	I	E	E	A	T	A	L	A	K	K	F	S	D	I	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-				
K	N	S	D	L	Q	K	S	V	K	N	G	V	N	G	T	L	V	G	N	G	L	S	K	A	E	E	A	T	T	L	T	S	K	N	N	F	S	D	I	I	R	K	K	E	L	N	E	K	L	F	G	N	S	N	N				
K	N	S	D	L	Q	K	S	V	K	N	G	V	N	G	T	L	V	G	N	G	L	S	K	T	E	E	A	T	T	L	T	S	K	N	N	F	S	D	I	I	R	K	K	E	L	N	E	K	L	F	G	N	S	N	N				
K	N	S	D	L	Q	-	S	V	K	N	G	V	N	G	T	L	V	G	N	G	L	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-							
K	N	S	E	I	Y	Q	S	V	K	N	G	V	N	G	T	L	V	G	N	G	L	S	G	I	E	E	A	T	A	L	A	K	N	N	F	S	D	I	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
K	N	S	D	L	Q	K	S	V	K	N	G	V	N	G	T	L	V	G	N	G	L	S	K	T	E	E	A	T	T	L	T	A	K	N	N	F	S	D	I	I	R	K	K	E	L	N	E	K	L	F	G	N	S	N	N				
K	N	S	D	L	Q	K	S	V	K	N	G	V	N	G	T	L	V	G	N	G	L	S	K	T	E	E	A	T	T	L	T	S	K	N	N	F	S	D	I	I	R	K	K	E	L	N	E	K	L	F	G	N	S	N	N				
K	N	S	D	L	Q	K	S	V	K	N	G	V	N	G	T	L	V	G	N	G	L	S	K	T	E	E	A	T	T	L	T	S	K	N	N	F	S	D	I	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
K	N	S	D	L	Q	K	S	V	K	N	G	V	N	G	T	L	V	G	N	G	L	S	K	T	E	E	A	T	T	L	T	S	K	N	N	F	S	D	I	I	R	K	K	E	L	N	E	K	L	F	G	N	S	N	N				
K	N	S	D	L	Q	K	S	V	K	N	G	V	N	G	T	L	V	G	N	G	L	S	K	T	E	E	A	T	T	L	T	S	K	N	N	F	S	D	I	I	R	K	K	E	L	N	E	K	L	F	G	N	S	N	N				
K	N	S	D	L	Q	K	S	V	K	N	G	V	N	G	T	L	V	G	N	G	L	S	K	T	E	E	A	T	T	L	T	S	K	N	N	F	S	D	I	I	R	K	K	E	L	N	E	K	L	F	G	N	S	N	N				
K	N	S	D	L	Q	K	S	V	K	N	G	V	N	G	T	L	V	G	N	G	L	S	K	T	E	E	A	T	T	L	T	S	K	N	N	F	S	D	I	I	R	K	K	E	L	N	E	K	L	F	G	N	S	N	N				
K	N	S	D	L	Q	K	S	V	K	N	G	V	N	G	T	L	V	G	N	G	L	S	K	T	E	E	A	T	T	L	T	S	K	N	N	F	S	D	I	I	R	K	K	E	L	N	E	K	L	F	G	N	S	N	N				
K	N	S	D	L	Q	K	S	V	K	N	G	V	N	G	T	L	V	G	N	G	L	S	K	T	E	E	A	T	T	L	T	S	K	N	N	F	S	D	I	I	R	K	K	E	L	N	E	K	L	F	G	N	S	N	N				
K	N	S	D	L	Q	K	S	V	K	N	G	V	N	G	T	L	V	G	N	G	L	S	K	T	E	E	A	T	T	L	T	S	K	N	N	F	S	D	I	I	R	K	K	E	L	N	E	K	L	F	G	N	S	N	N				
K	N	S	D	L	Q	K	S	V	K	N	G	V	N	G	T	L	V	G	N	G	L	S	K	T	E	E	A	T	T	L	T	S	K	N	N	F	S	D	I	I	R	K	K	E	L	N	E	K	L	F	G	N	S	N	N				
K	N	S	D	L	Q	K	S	V	K	N	G	V	N	G	T	L	V	G	N	G	L	S	K	T	E	E	A	T	T	L	T	S	K	N	N	F	S	D	I	I	R	K	K	E	L	N	E	K	L	F	G	N	S	N	N				
K	N	S	D	L	Q	K	S	V	K	N	G	V	N	G	T	L	V	G	N	G	L	S	K	T	E	E	A	T	T	L	T	S	K	N	N	F	S	D	I	I	R	K	K	E	L	N	E	K	L	F	G	N	S	N	N				
K	N	S	D	L	Q	K	S	V	K	N	G	V	N	G	T	L	V	G	N	G	L	S	K	T	E	E	A	T	T	L	T	S	K	N	N	F	S	D	I	I	R	K	K	E	L	N	E	K	L	F	G	N	S	N	N				
K	N	S	D	L	Q	K	S	V	K	N	G	V	N	G	T	L	V	G	N	G	L	S	K	T	E	E	A	T	T	L	T	S	K	N	N	F	S	D	I	I	R	K	K	E	L	N	E	K	L	F	G	N	S	N	N				
K	N	S	D	L	Q	K	S	V	K	N	G	V	N	G	T	L	V	G	N	G	L	S	K	T	E	E	A	T	T	L	T	S	K	N	N	F	S	D	I	I	R	K	K	E	L	N	E	K	L	F	G	N	S	N	N				
K	N	S	D	L	Q	K	S	V	K	N	G	V	N	G	T	L	V	G	N	G	L	S	K	T	E	E	A	T	T	L	T	S	K	N	N	F	S	D	I	I	R	K	K	E	L	N	E	K	L	F	G	N	S	N	N				
K	N	S	D	L	Q	K	S	V	K	N	G	V	N	G	T	L	V	G	N	G	L	S	K	T	E	E	A	T	T	L	T	S	K	N	N	F	S	D	I	I	R	K	K	E	L	N	E	K	L	F	G	N	S	N	N				
K	N	S	D	L	Q	K	S	V	K	N	G	V	N	G	T	L	V	G	N	G	L	S	K	T	E	E	A	T	T	L	T	S	K	N	N	F	S	D	I	I	R	K	K	E	L	N	E	K	L	F	G	N	S	N	N				
K	N	S	D	L	Q	K	S	V	K	N	G	V	N	G	T	L	V	G	N																																								





Sequence29-NP-GA-Jp-ABABD	N	N	N	-	-	-	-	-	-	-	-	-
Sequence78-P-CG-EA-ABD	N	N	N	N	G	L	K	N	S	-	-	-
Sequence188-NP-GCA-Jp-AB	-	-	-	-	-	-	-	-	-	-	-	-
Sequence72-P-CG-EA-ABD	N	N	N	N	G	L	K	-	-	-	-	-
Sequence79-P-CG-EA-ABD	N	N	N	N	G	L	K	N	N	-	-	-
Sequence61-NP-UD-OCC-ABC	-	-	-	-	-	-	-	-	-	-	-	-
Sequence125-NP-UG-Jp-ABCC	-	-	-	-	-	-	-	-	-	-	-	-
Sequence175-NP-G-Col-ABCC	-	-	-	-	-	-	-	-	-	-	-	-
Sequence122-NP-G-Jp-ABCC	-	-	-	-	-	-	-	-	-	-	-	-
Sequence36-NP-GA-Jp-ABD	N	N	N	N	G	L	K	-	-	-	-	-
Sequence58-NP-UD-OCC-ABC	-	-	-	-	-	-	-	-	-	-	-	-
Sequence27-NP-GA-Jp-ABBD	N	N	N	-	-	-	-	-	-	-	-	-
Sequence93-P-CG-Vit-ABD	-	-	-	-	-	-	-	-	-	-	-	-
Sequence177-NP-M-Col-ABCC	-	-	-	-	-	-	-	-	-	-	-	-
Sequence182-NP-UD-Col-ABCC	-	-	-	-	-	-	-	-	-	-	-	-
Sequence114-NP-UG-Jp-ABC	-	-	-	-	-	-	-	-	-	-	-	-
Sequence74-P-CG-EA-ABD	N	N	N	N	G	L	K	N	S	-	-	-
Sequence20-P-CG-Jp-ABD	N	N	N	N	G	L	K	-	-	-	-	-
Sequence14-NP-GCA-Jp-ABD	N	N	N	-	-	-	-	-	-	-	-	-
Sequence39-NP-GA-Jp-ABC	-	-	-	-	-	-	-	-	-	-	-	-
Sequence170-NP-UD-Col-ABCC	-	-	-	-	-	-	-	-	-	-	-	-
Sequence76-P-CG-EA-ABD	N	N	N	-	-	-	-	-	-	-	-	-
Sequence53-NP-GA-EA-ABD	N	N	N	N	G	L	K	-	-	-	-	-
Sequence174-P-CG-Col-ABCC	-	-	-	-	-	-	-	-	-	-	-	-
Sequence33-NP-UG-Jp-ABD	-	-	-	-	-	-	-	-	-	-	-	-
Sequence60-NP-GA-EA-ABD	N	N	N	-	-	-	-	-	-	-	-	-
Sequence38-NP-GA-Jp-ABD	N	N	N	-	-	-	-	-	-	-	-	-
Sequence1-NP-EG-Jp-ABCCC	-	-	-	-	-	-	-	-	-	-	-	-
Sequence101-P-CG-Vit-ABD	-	-	-	-	-	-	-	-	-	-	-	-
Sequence64-NP-UD-OCC-ABC	-	-	-	-	-	-	-	-	-	-	-	-
Sequence81-P-CG-EA-ABD	N	N	N	-	-	-	-	-	-	-	-	-
Sequence150-NP-DA-Sen-BC	-	-	-	-	-	-	-	-	-	-	-	-
Sequence90-NP-UD-Vit-ABD	S	N	-	-	-	-	-	-	-	-	-	-
Sequence136-P-CG-Col-AAACC	-	-	-	-	-	-	-	-	-	-	-	-
Sequence15-NP-UP-Jp-ABD	N	N	N	-	-	-	-	-	-	-	-	-
Sequence108-NP-UD-Vit-ABD	-	-	-	-	-	-	-	-	-	-	-	-
Sequence104-P-CG-OCC-ABCC	-	-	-	-	-	-	-	-	-	-	-	-
Sequence179-NP-UD-Col-ABCC	-	-	-	-	-	-	-	-	-	-	-	-
Sequence37-NP-GA-Jp-ABCCC	-	-	-	-	-	-	-	-	-	-	-	-
Sequence89-NP-UD-Vit-ABD	-	-	-	-	-	-	-	-	-	-	-	-
Sequence92-P-CG-Vit-ABD	N	N	N	-	-	-	-	-	-	-	-	-
Sequence49-NP-GA-Jp-ABC	-	-	-	-	-	-	-	-	-	-	-	-
Sequence181-P-CG-Col-ABCC	-	-	-	-	-	-	-	-	-	-	-	-
Sequence25-NP-GA-Jp-ABD	N	N	N	-	-	-	-	-	-	-	-	-
Sequence4-P-CG-Jp-ABD	N	N	N	N	G	L	K	-	-	-	-	-
Sequence121-NP-G-Jp-ABCC	-	-	-	-	-	-	-	-	-	-	-	-
4dvy	-	-	-	-	-	-	-	-	-	-	-	-
Sequence186-NP-UP-Jp-ABD	N	N	N	N	G	L	K	N	N	-	-	-
Sequence62-NP-UD-OCC-ABD	-	-	-	-	-	-	-	-	-	-	-	-
Sequence9-NP-GCA-Jp-ABD	N	N	N	-	-	-	-	-	-	-	-	-
Sequence12-NP-UP-Jp-ABD	N	N	N	N	G	L	K	-	-	-	-	-
Sequence35-NP-GA-Jp-ABABD	N	N	N	-	-	-	-	-	-	-	-	-
Sequence54-NP-GA-OCC-ABC	-	-	-	-	-	-	-	-	-	-	-	-
Sequence109-P-CG-Jp-ABD	-	-	-	-	-	-	-	-	-	-	-	-
Sequence96-NP-UD-Vit-ABD	-	-	-	-	-	-	-	-	-	-	-	-
Sequence80-P-CG-EA-ABD	N	N	N	-	-	-	-	-	-	-	-	-
Sequence82-P-CG-EA-ABD	N	N	N	-	-	-	-	-	-	-	-	-
Sequence10-NP-GCA-Jp-ABD	N	N	N	N	G	L	K	-	-	-	-	-
Sequence19-NP-UP-Jp-ABBD	N	N	N	N	G	L	K	N	-	-	-	-
Sequence115-NP-UG-Jp-ABC	-	-	-	-	-	-	-	-	-	-	-	-
Sequence45-NP-GA-Jp-ABCC	-	-	-	-	-	-	-	-	-	-	-	-

Sequence119-NP-UG-Jp-ABC	-	-	-	-	-	-	-	-	-	-	-
Sequence70-NP-GA-Ch-ABD	-	-	-	-	-	-	-	-	-	-	-
Sequence52-NP-UD-EA-ABD	N	N	N	N	G	L	K	-	-	-	-
Sequence97-P-CG-Vit-ABD	-	-	-	-	-	-	-	-	-	-	-
Sequence94-NP-UD-Vit-ABD	-	-	-	-	-	-	-	-	-	-	-
Sequence176-NP-GA-Col-ABCC	-	-	-	-	-	-	-	-	-	-	-
Sequence68-NP-D-Am-ABBC	-	-	-	-	-	-	-	-	-	-	-
Sequence47-NP-GA-Jp-ABD	N	N	N	-	-	-	-	-	-	-	-
Sequence56-NP-UD-OCC-ABC	-	-	-	-	-	-	-	-	-	-	-
Sequence31-NP-GA-Jp-ABD	N	N	N	N	G	L	K	N	S	-	-
Sequence46-NP-UD-Jp-ABD	-	-	-	-	-	-	-	-	-	-	-
Sequence102-NP-UG-Vit-ABD	-	-	-	-	-	-	-	-	-	-	-
Sequence71-P-CG-EA-ABD	N	N	N	N	G	L	K	-	-	-	-
Sequence30-NP-GA-Jp-ABBD	-	-	-	-	-	-	-	-	-	-	-
Sequence28-NP-GA-Jp-AABD	N	N	N	-	-	-	-	-	-	-	-
Sequence98-P-CG-Vit-AD	-	-	-	-	-	-	-	-	-	-	-
Sequence99-P-CG-Vit-ABD	-	-	-	-	-	-	-	-	-	-	-
Sequence24-NP-UD-USA-ABD	N	N	N	-	-	-	-	-	-	-	-
Sequence124-NP-G-Jp-ABC	-	-	-	-	-	-	-	-	-	-	-
Sequence77-P-CG-OCC-ABCC	-	-	-	-	-	-	-	-	-	-	-
Sequence113-NP-UG-Jp-ABC	-	-	-	-	-	-	-	-	-	-	-
Sequence88-NP-UD-Vit-ABD	-	-	-	-	-	-	-	-	-	-	-
Sequence100-NP-UD-Vit-ABD	S	N	G	L	-	-	-	-	-	-	-
Sequence137-NP-G-Col-ABCC	-	-	-	-	-	-	-	-	-	-	-
Sequence117-NP-G-Jp-ABC	-	-	-	-	-	-	-	-	-	-	-
Sequence171-NP-UD-Col-ABCC	-	-	-	-	-	-	-	-	-	-	-
Sequence180-P-CG-Col-ABC	-	-	-	-	-	-	-	-	-	-	-
Sequence112-P-CG-Jp-ABCC	-	-	-	-	-	-	-	-	-	-	-
Sequence127-NP-UD-Jp-ABC	-	-	-	-	-	-	-	-	-	-	-
Sequence51-NP-GA-OCC-ABC	-	-	-	-	-	-	-	-	-	-	-
Sequence73-P-CG-EA-ABD	N	N	N	-	-	-	-	-	-	-	-
Sequence183-NP-UD-Col-ABD	-	-	-	-	-	-	-	-	-	-	-
Sequence34-NP-UD-Jp-ABDD	-	-	-	-	-	-	-	-	-	-	-
Sequence21-P-CG-Jp-ABD	N	N	N	N	G	L	K	-	-	-	-
Sequence32-NP-GA-Jp-ABD	N	N	-	-	-	-	-	-	-	-	-
Sequence116-NP-UD-Jp-ABC	-	-	-	-	-	-	-	-	-	-	-
Sequence8-NP-GCA-Jp-ABD	N	N	N	-	-	-	-	-	-	-	-
Sequence83-P-CG-EA-ABD	N	N	N	N	G	L	K	-	-	-	-
Sequence48-NP-UD-OCC-ABC	-	-	-	-	-	-	-	-	-	-	-
Sequence120-NP-G-Jp-ABC	-	-	-	-	-	-	-	-	-	-	-
Sequence187-NP-UG-Jp-ABCCC	-	-	-	-	-	-	-	-	-	-	-
Sequence118-NP-G-Jp-ABD	N	N	N	-	-	-	-	-	-	-	-
Sequence87-NP-UG-Vit-ABD	-	-	-	-	-	-	-	-	-	-	-



**X** - Insufficient data - the calculation for this site was performed on less than 10% of the sequences.