

Table S3. The relative synonymous codon usage (RSCU) value of 59 codons of 18 amino acids of turnip mosaic virus polyprotein and the RSCU value of different hosts.

.Codon	aa	TuMV-polyprotein											
		<i>Brassica juncea</i>	Pol-B. <i>juncea</i>	<i>Brassica oleracea</i>	Pol-B. <i>oleracea</i>	<i>Brassica rapa</i>	Pol-B. <i>rapa</i>	<i>Raphanus sativus</i>	Pol-R. <i>sativus</i>	<i>Rapistrum rugosum</i>	Pol-R. <i>rugosum</i>	<i>Sisymbrium loeselii</i>	Pol-S. <i>loeselii</i>
TTT	F	<b>1.06*</b>	0.88	0.93	0.83	0.93	0.90	0.91	0.85	<b>1.31</b>	0.98	0.85	0.93
TTC	F	0.94	<b>1.12</b>	<b>1.06</b>	<b>1.17</b>	<b>1.06</b>	<b>1.10</b>	<b>1.08</b>	<b>1.16</b>	0.69	<b>1.02</b>	<b>1.15</b>	<b>1.07</b>
TTA	L	1.02	0.75	0.68	0.71	0.68	0.82	0.64	0.74	<b>1.86</b>	1.05	0.61	1.08
TTG	L	<b>1.22</b>	<b>1.28</b>	1.26	<b>1.28</b>	1.26	<b>1.26</b>	1.27	<b>1.24</b>	1.09	<b>1.15</b>	<b>1.26</b>	<b>1.25</b>
CTT	L	1.22	1.02	<b>1.42</b>	0.94	<b>1.43</b>	1.01	<b>1.37</b>	1.06	1.37	1.12	1.07	1.05
CTC	L	0.96	1.12	1.23	1.19	1.25	1.15	1.28	1.12	0.56	1.05	1.08	1.12
CTA	L	0.83	1.05	0.62	1.05	0.62	1.00	0.6	1.03	0.72	0.99	1.16	0.88
CTG	L	0.75	0.78	0.78	0.83	0.75	0.77	0.82	0.81	0.4	0.65	0.82	0.62
ATT	I	<b>1.19</b>	0.91	1.05	0.87	1.06	0.92	1.02	0.88	<b>1.43</b>	1.00	1.01	1.03
ATC	I	0.96	<b>1.05</b>	<b>1.2</b>	<b>1.09</b>	<b>1.19</b>	<b>1.06</b>	<b>1.23</b>	<b>1.11</b>	0.7	0.90	<b>1.73</b>	0.90
ATA	I	0.85	<b>1.05</b>	0.74	1.04	0.74	1.02	0.74	1.01	0.87	<b>1.10</b>	0.26	<b>1.08</b>
GTT	V	<b>1.23</b>	<b>1.10</b>	<b>1.49</b>	1.04	<b>1.48</b>	1.05	<b>1.46</b>	1.01	<b>1.49</b>	0.99	<b>1.82</b>	1.06
GTC	V	0.79	0.93	0.86	0.96	0.85	0.94	0.88	0.94	0.56	0.94	0.59	0.89
GTA	V	0.97	0.88	0.54	0.81	0.53	0.85	0.53	0.87	1.25	0.88	0.95	0.88
GTG	V	0.96	1.09	1.11	<b>1.19</b>	1.15	<b>1.15</b>	1.13	<b>1.18</b>	0.7	<b>1.19</b>	0.64	<b>1.16</b>
TCT	S	<b>1.41</b>	0.61	<b>1.59</b>	0.58	<b>1.59</b>	0.62	<b>1.56</b>	0.62	<b>1.61</b>	0.73	<b>1.55</b>	0.68
TCC	S	0.98	0.52	0.89	0.53	0.88	0.56	0.9	0.56	0.94	0.50	1.21	0.51
TCA	S	1.05	1.37	1.13	1.30	1.15	1.37	1.1	1.37	1.12	<b>1.49</b>	0.58	<b>1.45</b>
TCG	S	0.71	0.59	0.66	0.63	0.65	0.59	0.69	0.56	0.6	0.50	1.16	0.57
AGT	S	1.06	1.34	0.85	1.37	0.83	1.32	0.85	1.38	1.23	1.40	0.62	1.41
AGC	S	0.79	<b>1.57</b>	0.89	<b>1.59</b>	0.89	<b>1.54</b>	0.91	<b>1.51</b>	0.5	1.38	0.88	1.39
CCT	P	<b>1.33</b>	0.60	<b>1.5</b>	0.60	<b>1.53</b>	0.61	<b>1.53</b>	0.63	<b>1.45</b>	0.53	<b>2.02</b>	0.55
CCC	P	0.8	0.38	0.56	0.36	0.54	0.44	0.53	0.43	0.62	0.51	0.84	0.50
CCA	P	1.16	<b>2.47</b>	1.19	<b>2.54</b>	1.18	<b>2.36</b>	1.18	<b>2.37</b>	1.19	<b>2.37</b>	0.8	<b>2.30</b>
CCG	P	0.72	0.55	0.73	0.50	0.73	0.59	0.75	0.58	0.6	0.59	0.34	0.65
ACT	T	<b>1.34</b>	0.84	<b>1.23</b>	0.82	<b>1.25</b>	0.80	<b>1.27</b>	0.81	<b>1.52</b>	0.81	<b>1.94</b>	0.81
ACC	T	0.95	0.72	0.9	0.73	0.87	0.75	0.89	0.77	0.86	0.75	1.12	0.72
ACA	T	0.98	<b>1.66</b>	1.14	<b>1.68</b>	1.13	<b>1.72</b>	1.08	<b>1.63</b>	1.09	<b>1.75</b>	0.53	<b>1.77</b>
ACG	T	0.73	0.78	0.73	0.76	0.74	0.73	0.76	0.80	0.54	0.69	0.41	0.70
GCT	A	<b>1.5</b>	0.87	<b>1.67</b>	0.84	<b>1.68</b>	0.88	<b>1.65</b>	0.82	<b>1.81</b>	0.93	<b>1.26</b>	0.90
GCC	A	0.97	0.58	0.7	0.64	0.69	0.62	0.72	0.64	0.69	0.56	0.95	0.59
GCA	A	0.96	<b>1.90</b>	0.99	<b>1.86</b>	0.99	<b>1.88</b>	0.98	<b>1.89</b>	1.06	<b>1.99</b>	1.07	<b>1.94</b>
GCG	A	0.51	0.65	0.64	0.66	0.64	0.63	0.65	0.65	0.44	0.52	0.71	0.58
TAT	Y	<b>1.23</b>	0.88	0.9	0.84	0.9	0.93	0.87	0.89	<b>1.48</b>	0.96	<b>1.03</b>	0.89
TAC	Y	0.73	<b>1.12</b>	<b>1.07</b>	<b>1.16</b>	<b>1.07</b>	<b>1.07</b>	<b>1.1</b>	<b>1.11</b>	0.47	<b>1.04</b>	0.97	<b>1.11</b>
CAT	H	<b>1.22</b>	0.86	<b>1.09</b>	0.85	<b>1.08</b>	0.87	<b>1.05</b>	0.88	<b>1.28</b>	0.89	0.84	0.93

CAC	H	0.66	<b>1.14</b>	0.86	<b>1.15</b>	0.87	<b>1.13</b>	0.91	<b>1.12</b>	0.63	<b>1.11</b>	<b>1.17</b>	<b>1.07</b>
CAA	Q	<b>1.21</b>	0.91	<b>1.03</b>	0.87	<b>1.02</b>	<b>1.01</b>	0.98	0.98	<b>1.49</b>	<b>1.22</b>	<b>1.04</b>	<b>1.22</b>
CAG	Q	0.74	<b>1.09</b>	0.96	<b>1.13</b>	0.97	0.99	<b>1.01</b>	<b>1.02</b>	0.5	0.78	0.96	0.78
AAT	N	<b>1.22</b>	0.78	0.86	0.75	0.84	0.82	0.83	0.81	<b>1.32</b>	0.95	0.58	0.97
AAC	N	0.75	<b>1.22</b>	<b>1.13</b>	<b>1.25</b>	<b>1.15</b>	<b>1.18</b>	<b>1.16</b>	<b>1.19</b>	0.65	<b>1.05</b>	<b>1.42</b>	<b>1.03</b>
AAA	K	<b>1.13</b>	0.89	0.89	0.87	0.87	0.91	0.89	0.91	<b>1.41</b>	<b>1.00</b>	<b>1.11</b>	0.97
AAG	K	0.87	<b>1.11</b>	<b>1.11</b>	<b>1.13</b>	<b>1.12</b>	<b>1.09</b>	<b>1.1</b>	<b>1.09</b>	0.56	<b>1.00</b>	0.89	<b>1.03</b>
GAT	D	<b>1.31</b>	<b>1.09</b>	<b>1.23</b>	<b>1.04</b>	<b>1.23</b>	<b>1.07</b>	<b>1.22</b>	<b>1.04</b>	<b>1.45</b>	<b>1.14</b>	<b>1.39</b>	<b>1.11</b>
GAC	D	0.69	0.91	0.76	0.96	0.77	0.93	0.78	0.96	0.55	0.86	0.61	0.89
GAA	E	<b>1.13</b>	0.94	0.93	0.95	0.92	<b>1.05</b>	0.92	0.96	<b>1.45</b>	<b>1.25</b>	<b>1.17</b>	<b>1.22</b>
GAG	E	0.83	<b>1.06</b>	<b>1.07</b>	<b>1.05</b>	<b>1.08</b>	0.95	<b>1.08</b>	<b>1.04</b>	0.55	0.75	0.83	0.78
TGT	C	<b>1</b>	<b>1.13</b>	<b>1.02</b>	<b>1.16</b>	<b>1.03</b>	<b>1.15</b>	<b>1.01</b>	<b>1.12</b>	<b>1.27</b>	<b>1.10</b>	<b>1.18</b>	<b>1.06</b>
TGC	C	0.89	0.87	0.9	0.84	0.89	0.85	0.89	0.88	0.54	0.90	0.82	0.94
CGT	R	0.9	0.61	0.95	0.64	0.97	0.61	0.93	0.67	1.49	0.72	<b>1.61</b>	0.67
CGC	R	0.61	0.76	0.53	0.74	0.51	0.78	0.52	0.78	0.53	0.70	0.64	0.67
CGA	R	1.02	1.09	0.61	1.05	0.59	1.09	0.57	1.08	1.31	1.11	1.39	1.14
CGG	R	0.73	0.46	0.51	0.46	0.5	0.41	0.49	0.43	0.48	0.34	0.24	0.29
AGA	R	<b>1.6</b>	<b>1.92</b>	<b>2.01</b>	<b>2.03</b>	<b>2.04</b>	<b>1.94</b>	<b>2.07</b>	<b>1.88</b>	<b>1.54</b>	<b>2.02</b>	1.12	<b>2.06</b>
AGG	R	1.14	1.16	1.38	1.09	1.38	1.16	1.41	1.16	0.66	1.11	1	1.18
GGT	G	1.17	1.06	1.23	1.02	1.25	1.05	1.25	1.01	1.28	1.09	1.25	1.04
GGC	G	0.64	0.77	0.65	0.79	0.64	0.81	0.64	0.88	0.42	0.80	0.32	0.85
GGA	G	<b>1.29</b>	<b>1.56</b>	<b>1.39</b>	<b>1.63</b>	<b>1.4</b>	<b>1.56</b>	<b>1.38</b>	<b>1.51</b>	<b>1.55</b>	<b>1.57</b>	<b>1.53</b>	<b>1.59</b>
GGG	G	0.85	0.61	0.72	0.56	0.71	0.57	0.73	0.60	0.74	0.54	0.9	0.52

\* The most frequently used codons are shown in bold