

Supplementary Materials: A Review and Database of Snake Venom Proteomes

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Table S1. Elapid species with unusual venom composition.

SPECIES	PLA ₂	β-B	SVMP	LAAO	3FT	OHN	CRiSP	MT	CYS	PDE	% WV	REFERENCE
<i>Bungarus multicinctus</i> China	8.1	58.3		0.2	32.6						99.2	[1]
<i>B.multicinctus</i> Vietnam	15.3	40.8	0.8	2.1	27.5		2.4				88.9	[2]
<i>Calliophis bivirgata flaviceps</i>	41.1		18.7			14.4		22.6	0.6	1.3	98.7	[3]

Abbreviations: **PLA₂**, phospholipase A₂, **β-B**, β-bungarotoxin (PLA₂ linked with a KUN), **SVMP**, snake venom metalloprotease, **LAAO**, L-amino acid oxidase, **3FT**, three-finger toxin, **OHN**, Ohanin, **CRiSP**, Cysteine-Rich Secretary Protein, **MT**, maticotoxin, **CYS**, Cystatin **PDE**, phosphodiesterase, **% WV**, percentage of whole venom.

Table S2. The unusual venom composition of *Tropidolaemus wagleri* (Temple Pit Viper[4]).

SPECIES	PLA ₂	SVSP	SVMP	LAAO	LMMNLP	PDE	CTL	WAGLERIN	CYT	% WV	REF
<i>Tropidolaemus wagleri</i>	7.3	5.5	1.7	1.7	34.5	1	3.5	38.2	0.9	94.3	[4]

Abbreviations: **PLA₂**, phospholipase A₂, **SVSP**, snake venom serine protease, **SVMP**, snake venom metalloprotease, **LAAO**, L-amino acid oxidase, **LMMNLP**, low molecular mass non-lethal peptide, **PDE**, phosphodiesterase, **CTL**, C-type lectin, **WAGLERIN**, waglerin, **CYT**, cytotoxin, **% WV**, percentage of whole venom.

Table S3. The remaining 36 protein families in viper and elapid venoms have been classed as rare protein families. Most have only been recorded in one or two species of snakes, and always made up less than 10% of the whole venom.

Quantitatively Minor Component Protein Families	Number of Snake Species Possessing the Toxin	Maximum Total Amount (% of WV)	Species
glutamyl cyclase	8	2	<i>Cryptelytrops purpureomaculatus</i>
aminopeptidase	6	0.8	<i>Bothriechis aurifer</i>
endonuclease	6	0.6	<i>Naja mossambica</i>
cobra venom factor	5	1.1	<i>Naja naja/N. kaouthia</i>
transferrin	3	1.8	<i>Hydrophis platurus</i>
waprin	3	1.7	<i>Naja nigricollis</i>
endopeptidase	3	1.2	<i>Bungarus fasciatus</i>
glutathione peroxidase	3	0.2	<i>Micrurus clarki</i>
kazal-type inhibitor	2	9	<i>Bothriechis supraciliaris</i>
galactose-binding protein	2	5.5	<i>Bothrops jararaca</i>
trypsinogen	2	1.2	<i>Bungarus fasciatus</i>
albumin	2	1.1	<i>Hydrophis platurus</i>
prokineticin	2	0.4	<i>Dendroaspis polylepis</i>
selectin	1	<0.3	<i>Naja melanoleuca</i>
peroxiredoxin	1	<0.1	<i>Crotalus atrox</i>
protein c activator	1	8.87	<i>Agkistrodon contortrix</i>
cholinesterase	1	6	<i>Naja naja</i>
polyglycine peptides	1	4.1	<i>Bothriechis supraciliaris</i>
Glycine-histidine rich peptide	1	7.5	<i>Viridovipera stejnegeri</i>
flavine monoamine oxidase	1	2.5	<i>Naja melanoleuca</i>
lysosomal acid lipase A	1	2.4	<i>Micrurus altirostris</i>
fibrinogenases	1	2.28	<i>Agkistrodon contortrix</i>
haemoglobins	1	2.1	<i>Hydrophis platurus</i>
neurotrophin	1	1.6	<i>Calloselasma rhodostoma</i>
aspartic protease	1	1.12	<i>Vipera berus</i>
type-B carboxylesterase	1	1.1	<i>Naja melanoleuca</i>

cytotoxin	1	0.9	<i>Tropidolaemus wagleri</i>
neuronal membrane glycoprotein	1	0.8	<i>Micrurus mosquitensis</i>
insulin-like growth factor	1	0.7	<i>Ophiophagus hannah</i>
sulfhydryl oxidase	1	0.4	<i>Calliophis bivirgata flaviceps</i>
aminotransferase	1	0.2	<i>Daboia russelii</i>
complement decay-accelerating factor	1	0.2	<i>Aipysurus laevis</i>
kinesin-like protein	1	0.1	<i>Calloselasma rhodostoma</i>
ribosomal protein	1	0.1	<i>Micrurus alleni</i>
multiple inositol polyphosphate phosphatase	1	0.04	<i>Calliophis bivirgata flaviceps</i>
phospholipase A2 inhibitor	1	0.04	<i>Tropidolaemus wagleri</i>

Table S4. The five non-front fanged snakes included in the study with the proportion of the ten major protein families in each venom (expressed as % of total venom), which make up the majority of their venom proteome.

SPECIES	PLA ₂	SVSP	SVMP	MMP	3FT	CRISP	CTL	V	EGF	DEF	% WV	REFERENCE
<i>Boiga irregularis</i>			24.9		67.5	3.8					96.2	[5]
<i>Cerberus rynchops</i>			30			22	22	26			100	[6]
<i>Dispholidus typus</i>	7.6	5.5	74.6		6.2	5.4	0.4				99.7	[7]
<i>Hypsigena sp</i> Arizona			68.7			16.7					85.4	[5]
<i>Thamnodynastes strigatus</i>		0.7	8.2	76.2	0.2	1.9	5.4		3.9	2.8	99.3	[8]

Abbreviations: PLA₂, phospholipaseA₂, SVSP, snake venom serine protease, SVMP, snake venom metalloprotease. MMP, matrix metalloprotease, 3FT, three-finger toxin, CRISP, cysteine-rich secretory protein, CTL, c-type lectin, V, veficolin, EGF, epidermal growth factor, DEF, defensin, % WV, percentage of whole venom.

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