

Table S1: Tandem mass spectrometry analysis of the reversed-phase high-performance liquid chromatography fractions in *Crotalus adamanteus*.

Fraction	Protein name	Exclusive UPC	Exclusive USC	TSC	% TSC	Seq Coverage (%)
1a	None	–	–	–	–	–
1b	LAAO	26	35	122	27.92	27.7
	SVMPII-2b	12	17	68	15.56	16.2
	MYO-1a/b	4	5	44	10.07	58.3
	SVMPIII-5	14	17	32	7.32	30.8
	PLA ₂ -1a	6	8	22	5.03	47.5
	PDE	4	9	21	4.81	6.0
	SVMPII-1b/d	6	8	21	4.81	15.6
	SVMPIII-2b	7	8	20	4.58	15.2
2	MYO-1b	3	4	586	100.00	52.1
3	SVMPIII-2b	10	15	816	100.00	18.3
4	SVMPIII-2b	11	18	1073	100.00	22.5
5	SVMPIII-2b	7	9	287	100.00	16.1
6	None	–	–	–	–	–
7	CRISP	14	18	1403	96.23	79.2
8	SVSP-5	5	5	579	80.64	30.8
	CRISP	3	3	139	19.36	17.6
9	None	–	–	–	–	–
10	PLA ₂ -1a/b	3	3	4040	100.00	91.8
11	SVSP-2	2	2	146	86.39	25.7
	SVSP-5	1	1	23	13.61	17.5
12	SVSP-4	7	9	2335	98.77	59.0
13	SVSP-7	4	6	706	76.08	55.1
	SVSP-4	3	4	222	23.92	31.1
14	CTL-10	2	2	1270	68.02	69.2
	SVSP-4	3	3	385	20.62	38.5
	CTL-11a/b/c	3	3	136	7.28	52.3
15a	CTL-10	1	1	1198	42.02	58.1
	CTL-9	1	1	1118	39.21	61.3
	SVSP-4	3	3	325	11.40	38.5
15b	CTL-10	26	55	1420	27.63	100.0
	CTL-13f	26	66	1104	21.48	96.0
	SVSP-7	26	37	377	7.33	89.0
	LAAO	51	101	368	7.16	70.7
	SVSP-4	17	32	342	6.65	85.2
	CTL-11a/b	12	22	258	5.02	99.2

Fraction	Protein name	Exclusive UPC	Exclusive USC	TSC	% TSC	Seq Coverage (%)
16	LAAO	10	12	368	45.21	39.8
	SVSP-7	4	6	211	25.92	55.1
	SVSP-4	4	4	165	20.27	45.1
	CTL-11a/b/c	2	2	38	4.67	32.8
17	SVSP-4	4	4	392	49.68	45.1
	SVSP-7	2	2	205	25.98	42.9
	NUC	2	2	134	16.98	6.6
	HYAL	2	2	45	5.70	10.7
18	SVMPIII-4d/e	14	16	4627	98.01	29.9
19	SVMPIII-3	17	19	1707	80.86	43.6
	CTL-11a	4	4	271	12.84	63.3
20a	SVMPIII-2b	13	15	1553	62.65	35.9
	SVMPII-2c/d	1	2	446	17.99	30.8
	SVMPII-2b	1	4	433	17.47	30.8
20b	SVMPII-2b	48	91	648	17.38	52.8
	LAAO	80	138	472	12.66	87.6
	CTL-10	26	48	301	8.07	100.0
	CTL-11a/b	14	28	200	5.36	99.2
	SVMPIII-2b	31	63	185	4.96	46.9
	CTL-13f	26	54	177	4.75	100.0
	SVSP-4	16	33	168	4.51	96.3
	SVSP-4	16	33	168	4.51	96.3
20c	LAAO	78	145	691	17.24	76.7
	SVMPII-2b	36	62	377	9.40	42.1
	CTL-11a/b	16	26	282	7.03	99.2
	SVMPII-1b/d	21	36	270	6.73	43.3
	CTL-10	21	36	204	5.09	94.0
21	SVMPII-1a/b/c/d	14	17	3141	94.78	46.9

Table S1: Toxin identifications based on peptide spectral evidence of isolated peaks from reversed-phase high-performance liquid chromatography (RP-HPLC). Variable abbreviations: UPC = Unique Peptide Count; USC = Unique Spectrum Count; TSC = Total Spectrum Count. Toxin abbreviations: CTL, C-type lectin; CRISP, Cysteine-rich secretory protein; HYAL, Hyaluronidase; LAAO, L-amino-acid oxidase; MYO, Myotoxin; NUC, Nucleotidase; PDE, Phosphodiesterase; PLA₂, Phospholipase A₂; SVMPI, Snake venom metalloproteinase (types II and III); SVSP, Snake venom serine proteinase.

Table S2: Tandem mass spectrometry analysis of the reversed-phase high-performance liquid chromatography fractions in *Micrurus fulvius*.

Fraction	Protein name	Exclusive UPC	Exclusive USC	TSC	% TSC	Seq Coverage (%)
1	3FTx-8a	1	16	147	47.88	85.2
	KUN-4	2	3	65	21.17	81.4
	KUN-1	3	3	57	18.57	73.3
	KUN-5	3	3	18	5.86	49.2
2	KUN-5	5	5	97	48.50	72.9
	3FTx-5	9	17	50	25.00	59.0
	KUN-4	1	1	21	10.50	72.9
	3FTx-8a	3	4	12	6.00	67.2
	KUN-2a	3	5	10	5.00	52.5
3	LCN-2a	4	6	113	57.36	80.3
	KUN-5	3	3	22	11.17	49.2
	3FTx-5	7	10	20	10.15	59.0
	KUN-2a	3	6	13	6.60	72.9
	KUN-3	3	7	12	6.09	74.6
	3FTx-9b	2	3	12	6.09	81.0
4	LCN-2a	4	6	37	45.68	56.1
	3FTx-9b	2	5	16	19.75	81.0
	KUN-3	2	6	9	11.11	50.8
	KUN-2a	4	5	9	11.11	76.3
	KUN-5	2	2	4	4.94	44.1
5	3FTx-9b	3	18	627	39.43	81.0
	KUN-6a/b	6	16	221	13.90	84.7
	3FTx-9c	1	3	185	11.64	58.7
	LCN-1	7	16	182	11.45	65.2
	KUN-3	5	20	152	9.56	81.4
	KUN-2a	6	14	100	6.29	89.8
6	3FTx-6b	5	11	291	21.91	89.7
	3FTx-11a	6	12	269	20.26	71.6
	3FTx-9b	3	16	218	16.42	81.0
	3FTx-11c	1	5	167	12.58	65.7
	KUN-3	5	18	99	7.45	81.4
	3FTx-13	4	8	91	6.85	100.0
7	PLA ₂ -4b	3	8	946	28.05	82.9
	PLA ₂ -6b	7	15	598	17.73	81.3
	PLA ₂ -3b	4	8	378	11.21	89.4
	PLA ₂ -2aa	1	1	285	8.45	69.9

Fraction	Protein name	Exclusive UPC	Exclusive USC	TSC	% TSC	Seq Coverage (%)
8	PLA ₂ -2v	1	1	278	8.24	82.1
	3FTx-11c	3	9	206	6.11	77.6
	PLA ₂ -7a	7	10	173	5.13	76.8
	3FTx-9b	3	16	263	34.07	81.0
	PLA ₂ -7a	1	22	147	19.04	87.2
	3FTx-11a	6	11	118	15.28	67.2
	3FTx-6b	4	8	49	6.35	89.7
	KUN-3	3	12	46	5.96	57.6
9	3FTx-13	3	7	44	5.70	84.5
	PLA ₂ -8b	7	15	829	38.43	88.8
	PLA ₂ -4b	2	3	389	18.03	74.8
	PLA ₂ -3b	4	8	155	7.19	89.4
	PLA ₂ -2ad	1	1	130	6.03	65.0
	PLA ₂ -2h	2	3	122	5.66	70.7
	PLA ₂ -6b	5	12	120	5.56	75.6
	3FTx-11c	3	6	98	4.54	65.7
10	3FTx-9b	3	16	204	50.50	81.0
	3FTx-11a	5	9	80	19.80	59.7
	PLA ₂ -7a	7	9	29	7.18	76.8
	KUN-3	3	8	19	4.70	57.6
11	PLA ₂ -2m	2	2	1991	19.80	88.6
	PLA ₂ -2v	1	1	1718	17.09	88.6
	PLA ₂ -2ad	1	1	1707	16.98	61.8
	PLA ₂ -3b	5	17	1484	14.76	98.2
	PLA ₂ -2r	1	1	1238	12.31	86.2
	PLA ₂ -2aa	2	3	720	7.16	77.2
	12	PLA ₂ -2h	3	9	1000	20.69
PLA ₂ -3b		4	8	800	16.55	96.5
PLA ₂ -2aa		4	15	734	15.19	77.2
PLA ₂ -2m		2	2	721	14.92	88.6
PLA ₂ -2v		3	4	525	10.86	88.6
PLA ₂ -7a		4	5	291	6.02	63.2
PLA ₂ -6b		1	1	288	5.96	35.0
PLA ₂ -4b		1	1	288	5.96	51.2
13	PLA ₂ -2h	3	8	302	26.24	70.7
	PLA ₂ -2aa	4	10	197	17.12	70.7
	PLA ₂ -3b	2	3	159	13.81	89.4
	3FTx-10a	9	12	152	13.21	78.8
	PLA ₂ -2v	1	1	79	6.86	78.0
	3FTx-9b	3	10	63	5.47	81.0

Fraction	Protein name	Exclusive UPC	Exclusive USC	TSC	% TSC	Seq Coverage (%)
14	PLA ₂ -2h	3	8	126	24.75	87.0
	PLA ₂ -3b	4	4	97	19.06	89.4
	PLA ₂ -2aa	3	7	94	18.47	87.0
	3FTx-9b	3	11	69	13.56	54.0
	3FTx-10a	3	4	32	6.29	37.9
	PLA ₂ -7a	3	4	24	4.72	52.8
15a	3FTx-9b	2	9	81	33.89	54.0
	PLA ₂ -2h	3	7	56	23.43	70.7
	PLA ₂ -2aa	2	2	38	15.90	70.7
	3FTx-11a	5	6	20	8.37	46.3
	PLA ₂ -7a	3	3	16	6.69	52.8
15b1	CTL-2a	21	42	165	21.91	97.8
	PLA ₂ -3b	2	9	151	20.05	89.4
	PLA ₂ -2h	2	3	127	16.87	70.7
	PLA ₂ -2aa	2	2	78	10.36	70.7
	3FTx-10a	4	5	45	5.98	37.9
	NGF-1b	6	12	41	5.44	36.4
	PLA ₂ -4b	3	3	38	5.05	74.8
	PLA ₂ -7a	5	6	35	4.65	53.6
15b2	PLA ₂ -3b	1	1	43	33.08	76.1
	PLA ₂ -2h	1	1	31	23.85	64.2
	CTL-2a	8	10	24	18.46	74.5
	NGF-1b	4	5	14	10.77	31.1
	PLA ₂ -7a	3	3	10	7.69	36.0
	3FTx-10a	3	3	8	6.15	37.9
15b3	CTL-2a	16	34	106	22.94	78.8
	PLA ₂ -2h	3	5	80	17.32	70.7
	PLA ₂ -2v	1	1	73	15.80	82.1
	PLA ₂ -3b	2	7	65	14.07	89.4
	PLA ₂ -2aa	2	2	40	8.66	70.7
	NGF-1b	5	8	28	6.06	33.3
	PLA ₂ -7a	3	3	22	4.76	42.4
16	SVMPIII-1	41	93	1341	82.52	54.8
108 min*	SVMPIII-1	32	67	755	27.44	55.3
	PDE	67	150	559	20.32	69.9
	NUC-1c	2	6	346	12.58	78.7
	NUC-1a	1	1	336	12.21	78.6
	SVMPIII-2a	1	1	237	8.62	31.1
114 min*	LAAO-1a	2	4	1004	32.89	81.7
	LAAO-1c	2	3	995	32.59	81.7

Fraction	Protein name	Exclusive UPC	Exclusive USC	TSC	% TSC	Seq Coverage (%)
122 min*	SVMPIII-1	23	45	335	10.97	45.4
	PDE	33	50	157	5.14	52.5
	LAAO-1a	2	3	377	32.28	70.9
	LAAO-1c	2	2	373	31.93	70.9
	SVMPIII-1	19	27	151	12.93	41.8
	PLB	21	30	76	6.51	36.2
	NUC-1a	1	1	61	5.22	58.9

Table S2: Toxin identifications based on peptide spectral evidence of isolated peaks from reversed-phase high-performance liquid chromatography (RP-HPLC). Peaks that were only analyzed by mass spectrometry (i.e., not included in population comparisons due to extremely low abundance) are indicated by an asterisk and labeled with the retention time in minutes. RP-HPLC peak 15b, a single peak in population-level analyses, contained three peaks that were analyzed independently by means of mass spectrometry. These peaks are indicated by numbers above. Variable abbreviations: UPC = Unique Peptide Count; USC = Unique Spectrum Count; TSC = Total Spectrum Count. Toxin abbreviations: CTL, C-type lectin; KUN, Kunitz-type protease inhibitor; LAAO, L-amino acid oxidase; LCN, Long-chain neurotoxin; NGF, Nerve growth factor; NUC, Nucleotidase; PDE, Phosphodiesterase; PLA₂, Phospholipase A₂; PLB, Phospholipase B; SVMP, Snake venom metalloproteinase; 3FTx, Three-finger toxin.

Tables S3-S4

Available for download as Excel files at <http://www.genetics.org/lookup/suppl/doi:10.1534/genetics.114.172437/-/DC1>

Table S3 Peptide reports for both species

Table S4 Raw, untransformed data for both species