

Table S3.

Gene	Clade	Source	Species	Origin	Motile								Figure	GenBank Accession	Notes								
					LRR1		LRRV		LRRvt		LRRCP												
					Consensus	Entropy	Consensus	Entropy	Consensus	Entropy	Consensus	Entropy											
VLRA	Lamprey	Pooled	All Combined	Blood	G	1.01	G	2.85	K	1.95	S	1.03	Figure S4	KC732889- KC733075 ABO21121- ABO21311 CD543372 EP094706 ACT31446- ACT31458									
					I	0.11	L	0.08	L	0.04	L	0.04											
					P	0.84	T	1.65	V	1.52	T	1.10											
					T	0.55	K	2.11	N	1.80	K	0.61											
					S	0.43	L	0.06	L	0.00	V	0.00											
					T	0.04	T	2.01	E	1.93	E	1.08											
					E	2.10	Y	3.29	T	2.68	M	0.64											
					K	1.93	L	0.00	L	0.09	L	0.12											
					L	0.00	N	3.08	W	3.01	Q	1.91											
					Q	1.60	L	0.42	L	0.17	L	0.00											
					L	0.53	D	3.12	R	3.15	H	2.90											
					N	2.48	S	3.37	E	2.90	N	2.37											
					Y	1.50	N	0.17	N	0.00	N	0.00											
					N	0.92	Q	0.99	K	1.66	P	2.12											
					S	1.88	L	0.43	L	0.00	W	0.77											
					L	1.03	Q	1.96	Q	0.15	D	0.81											
					T	1.86	Y	1.47	S	0.04													
					G	1.65	L	1.11	V	0.04													
					I	0.56	P	0.98	P	0.09													
					P	1.17	V	2.78	D	0.89													
					P	1.95	G	1.17	G	0.00													
					T	1.95	V	1.28	A	0.17													
					A	0.50	F	0.05	F	0.00													
					F	0.00	D	0.66	D	0.38													
					Q	2.06																	
					VLRA	Hagfish	Pooled	E. stoutii	Blood	D	0.00	H				2.60	K	0.94	K	0.68	Figure S4	KF314046- KF314110	
										I	0.00	L				0.09	L	0.00	L	0.34			
										Q	0.00	V				2.25	R	0.51	S	0.00			
K	0.00	K	2.25	E						2.06	K	0.54											
D	0.00	L	0.00	L						0.00	L	0.00											
A	0.00	T	2.05	K						1.85	E	0.99											
E	0.00	Y	3.21	T						2.16	T	1.38											
K	0.59	L	0.09	L						0.00	I	0.32											
L	0.00	S	3.32	Y						2.86	F	2.52											
D	1.17	L	0.49	L						0.47	L	0.00											
L	0.00	N	3.12	Q						3.15	T	2.98											
K	1.48	N	3.37	N						2.55	D	2.47											
Y	0.54	N	0.00	N						0.00	N	0.00											
N	0.00	Q	1.32	Q						0.27	D	1.11											
S	0.27	L	0.00	L						0.00	W	0.00											
L	0.00	Q	1.45	R						0.72	D	0.00											
S	0.00	S	1.98	S						0.74													
K	0.61	L	0.24	V						0.34													
L	0.00	P	0.05	P						0.00													
S	1.24	F	2.97	D						1.03													
P	0.57	G	1.00	K						0.73													
T	0.77	V	0.95	A						0.70													
A	0.27	F	0.00	F						0.00													
F	0.00	D	0.37	D						0.50													
H	0.27																						
VLRA	Hagfish	Pooled	E. burgeri	Blood						N	0.00	H	2.70	K	1.03	S	0.50	Figure S2B (Top) and Figure S3	AY964719- AY964931				
										I	0.00	L	0.23	L	0.00	L	0.04						
										P	0.00	N	2.50	T	0.94	S	0.00						
					P	1.84	K	2.26	E	2.10	S	1.74											
					D	0.73	L	0.21	L	0.07	L	0.94											
					T	0.00	T	2.14	R	1.79	S	2.17											
					T	1.97	Y	3.28	T	2.30	N	3.12											
					Q	2.21	L	0.01	L	0.00	V	1.36											
					L	0.00	S	3.23	D	3.14	T	2.70											
					R	2.60	L	0.30	L	0.45	L	0.04											
					L	0.00	N	3.19	Q	3.15	T	3.04											
					N	2.51	E	3.38	T	2.41	N	2.84											
					F	2.46	N	0.03	N	0.00	N	0.04											
					N	0.00	Q	1.52	Q	0.24	P	0.13											
					S	0.90	L	0.03	L	0.00	W	0.04											
					L	0.04	Q	1.72	R	1.31	D	0.04											
					S	0.75	A	1.50	S	1.54													
					K	1.58	L	0.32	V	0.20													
					L	0.08	F	0.30	P	0.00													
					S	1.70	V	3.35	K	2.16													
					P	2.32	G	0.73	G	1.34													
					K	1.62	V	0.94	A	0.85													
					A	0.47	D	0.01	F	0.00													
					F	0.04	D	0.40	D	0.75													
					H	0.30																	
					VLRA	Hagfish	Pooled	E. stoutii	Blood	N	0.11	G	2.69	K	1.17	S	2.03				Figure S2B (Bottom) and Figure S3	AY964719- AY964931	
										I	0.00	L	0.32	L	0.12	L	0.40						
										P	0.00	N	2.59	T	0.94	S	1.70						
T	1.87	K	2.07	K						2.05	S	1.58											
D	0.83	L	0.26	L						0.06	L	0.98											
T	0.00	T	1.91	T						1.52	N	2.11											
D	1.15	Y	3.34	R						2.22	N	2.94											
R	1.63	L	0.02	L						0.06	I	1.44											
L	0.06	D	3.29	E						3.18	M	2.77											
D	2.78	L	0.37	L						0.44	L	0.00											
L	0.00	N	3.11	G						3.16	T	2.99											
Q	2.47	Y	3.32	S						2.31	N	2.84											
S	2.54	N	0.11	N						0.06	N	0.00											
N	0.00	K	1.47	Q						0.25	P	0.00											
K	0.97	L	0.05	L						0.06	W	0.04											
L	0.11	Q	1.49	R						1.37	D	0.00											
S	0.42	T	1.74	S						1.07													
S	1.41	L	0.11	V						0.06													
L	0.06	F	0.08	P						0.00													
P	1.30	P	3.27	K						1.79													
R	2.19	G	0.72	G						0.25													
T	1.12	V	0.85	A						0.87													
A	0.32	F	0.07	F						0.06													
F	0.00	D	0.37	E						0.68													
H	0.51																						
VLRA	Hagfish	Pooled	Combined	Blood						N	0.05	G	2.71	K	1.13	S	1.59	Figure 4 and Figure S4	AY964719- AY964931				
										I	0.00	L	0.27	L	0.05	L	0.22						
										P	0.00	N	2.59	T	0.95	S	1.71						
					T	1.95	K	2.23	K	2.11	S	1.70											
					D	0.77	L	0.24	L	0.07	L	0.97											
					T	0.00	T	2.08	T	1.73	N	2.18											
					D	2.00	Y	3.33	R	2.30	N	3.13											
					R	2.20	L	0.02	L	0.03	I	1.40											
					L	0.03	D	3.27	E	3.19	M	2.76											
					D	2.71	L	0.33	L	0.47	L	0.03											
					L	0.00	N	3.20	G	3.17	T	3.05											
					Q	2.53	Y	3.38	S	2.40	N	2.88											
					S	2.52	N	0.06	N	0.03	N	0.03											
					N	0.00	K	1.51	Q	0.26	P	0.09											
					K	0.93	L	0.04	L	0.03	W	0.03											
					L	0.07	Q	1.67	R	1.38	D	0.03											
					S	0.64	T	1.60	S	1.43													
					S	1.53	L	0.26	V	0.16													
					L	0.08	P	0.24	P	0.00													
					P	1.59	P	3.35	R	1.79													
					R	2.40	G	0.74	G	1.08													
					T	1.53	V	0.92	A	0.86													
					A	0.42	F	0.04	F	0.03													
					F	0.03	D	0.40	E	0.74													
					H	0.40																	
					VLRA				Monoallelic (Blood)	G	0.00	G	2.54			S	0.68				Figure 5A (Bottom) and Figure 5B (Left)	KJ734027- KJ734078, KJ751404- KJ751454	LRRvt not used in analysis.
										I	0.00	L	0.12			L	0.00						
										P	0.00	T	2.60			A	2.27						
A	0.50	N	2.63								K	2.03											
S	0.00	L	0.12								L	0.90											
T	0.00	T	1.98								E	1.92											
E	0.50	Y	3.24								T	2.55											
K	0.99	L	0.05								L	1.74											
L	0.00	S	3.43								Q	3.00											
Q	1.53	L	0.50								L	0.42											
L	0.00	S	3.14								D	3.13											
H	2.50	-	3.25								N	1.44											
Y	1.35	N	0.50								P	0.00											
N	0.00	N	0.38								W	0.00											
Q	0.00	Q	1.05			D	0.00																
L	0.00	L	0.00																				
T	0.99	Q	1.39																				
S	1.75	S	0.60																				
I	0.50	L	1.14																				

				P	1.74	F	0.42	Y	1.21				
				A	2.54	V	2.50	G	0.00				
				G	1.27	C	0.79	V	0.84				
				V	0.68	V	1.23	F	0.00				
				F	0.21	F	0.00	D	0.12				
				D	1.92	D	0.38						
				G	0.00	G	2.57	K	1.43	S	1.40		
				I	0.25	L	0.10	L	0.00	L	0.00		
				P	0.00	T	2.10	V	1.05	T	2.31		
				T	0.57	K	2.59	N	1.80	K	1.90		
				S	0.81	L	0.09	L	0.00	V	1.18		
				T	0.00	T	2.08	E	1.99	E	1.64		
				E	0.46	Y	3.38	T	2.23	M	2.55		
				K	1.11	L	0.02	L	0.00	L	1.79		
				L	0.00	N	3.39	W	3.09	Q	2.74		
				Q	1.67	L	0.57	L	0.00	L	0.59		
				L	0.06	D	3.19	R	3.25	H	3.22		
				N	2.55	S	3.27	E	2.78	N	1.93		
				Y	1.46	N	0.06	N	0.06	N	0.00		
				N	0.35	Q	0.93	K	1.34	F	0.43		
				Q	0.60	L	0.03	L	0.00	W	0.06		
				L	0.20	Q	1.47	Q	0.13	D	0.00		
				T	1.76	Y	0.73	S	0.03				
				G	2.41	L	1.11	V	0.47				
				I	1.08	P	0.26	P	0.12				
				P	1.69	V	2.88	D	1.36				
				F	2.25	G	0.96	G	0.00				
				T	1.70	V	1.19	A	0.83				
				A	0.67	F	0.00	F	0.00				
				F	0.06	D	0.45	D	0.18				
				Q	2.45								
		All Species Combined	Blood										
										Figure 4 and Figure S4		KC244050- KC244109 AB507269- AB507373 KC733076- KC733164	Note that the "-" in the consensus sequence of other VLRC LRRV columns refer to the fact some internal LRRV modules contain 25 amino acids, compared to the majority that contain 24. Hagfish VLRC and lamprey VLRA do not contain any instances of LRRV with 25 amino acids, thus when comparing the entropies between lamprey and hagfish (Figure 4) or lamprey VLRC with lamprey VLRA (Figure S4) the column containing the gap was removed from analysis. As this group was only used for these analyses, it has not been included in the consensus column for LRRV.