Electronic Supplementary Material (ESI) for Biomaterials Science

Integrative and comparative analysis of coiled-coil based marine snail egg cases – a model for biomimetic elastomers

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Supplementary Information

Table S1. Edman sequencing results of PcECP SDS-PAGE bands. Residues highlighted in bold represent direct matches to published N-terminal PcECP sequences.

PcECP-1	D	L	N	T	D	V	L	K	E	A
Band 1	**D**	**L**	**N**	**T**	**D**	**V**	**L**	**K**	**E**	**A**
Band 2	**D**, S	P,**L**,A	K,**N**	**T**,I	**D**,S	**V**,A	Q,**L**,E	**K**,N	**E**,A	**A**,L
Band 3	**D**,S	K,P	**N**,L	I,**T**	N,S	**V**	E,Q	**K**	V,**E**	**A**
PcECP-2	S	D	F	G	F	D	F	G	S	S
Band 4	**S**	R	L	**G**	**F**	**D**	**F**	**G**	**S**	**S**
Band 5	**S**	**D**	**F**	**G**	**F**	**D**	**F**	**G**	**S**	**S**

Table S2. Amino acid composition of egg case (EC), nidamental gland extract (NG) and ECPs from *P. cochlidium* (Pc) and *B. canaliculatus* (Bc). Bc values are from Ref. (25).

	PcEC	PcNG Extract	PcECP-1	PcECP-2	BcEC	BcNG Extract	BcECP-1a	BcECP-1b	BcECP-2	BcECP-3
Ala	10.5	10.3	10.8	9.2	7.5	7.0	8.5	8.9	5.7	5.6
Arg	4.6	4.7	5.6	3.1	3.7	3.6	4.5	4.5	3.1	3.3
Asn	12.7	12.2	6.6	4.4	13.5	10.1	6.1	6.4	5.9	5.9
Asp			4.7	7.7			5.4	5.2	7.0	6.9
Cys	0.4	0.5	0.7	0.4	0.0	0.0	0.7	0.7	0.4	0.4
Gln	16.3	16.1	11.3	6.5	15.6	16.7	8.7	9.4	7.4	7.4
Glu			6.1	6.9			7.5	7.5	7.4	7.4
Gly	6.4	6.5	7.5	6.3	8.0	5.6	4.9	4.9	5.9	5.9
His	2.7	2.9	1.6	3.1	1.5	3.0	1.9	2.1	3.7	3.7
Ile	5.8	5.9	7.5	6.1	4.9	9.6	7.5	6.8	6.6	6.5
Leu	9.5	9.4	9.4	9.2	9.5	9.6	9.6	9.9	9.4	9.3
Lys	8.5	9.1	7.0	12.5	9.7	10.6	10.6	10.4	11.4	11.5
Met	0.7	0.7	0.7	0.4	0.8	1.2	0.7	0.7	0.7	0.7
Phe	4.5	4.4	1.9	7.1	4.6	4.0	2.1	2.1	5.9	6.3
Pro	0.0	0.0	0.5	0.6	1.9	2.0	0.5	0.2	0.9	0.9
Ser	7.2	6.8	7.0	6.1	8.0	6.6	8.2	7.8	7.9	7.8
Thr	3.7	3.6	3.8	3.5	5.0	4.0	5.4	5.6	3.9	3.9
Trp	-	-	0.0	0.2		-	0.0	0.0	0.2	0.2
Tyr	0.2	0.4	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0
Val	6.5	6.5	7.3	6.7	5.4	6.6	7.1	6.8	6.6	6.5

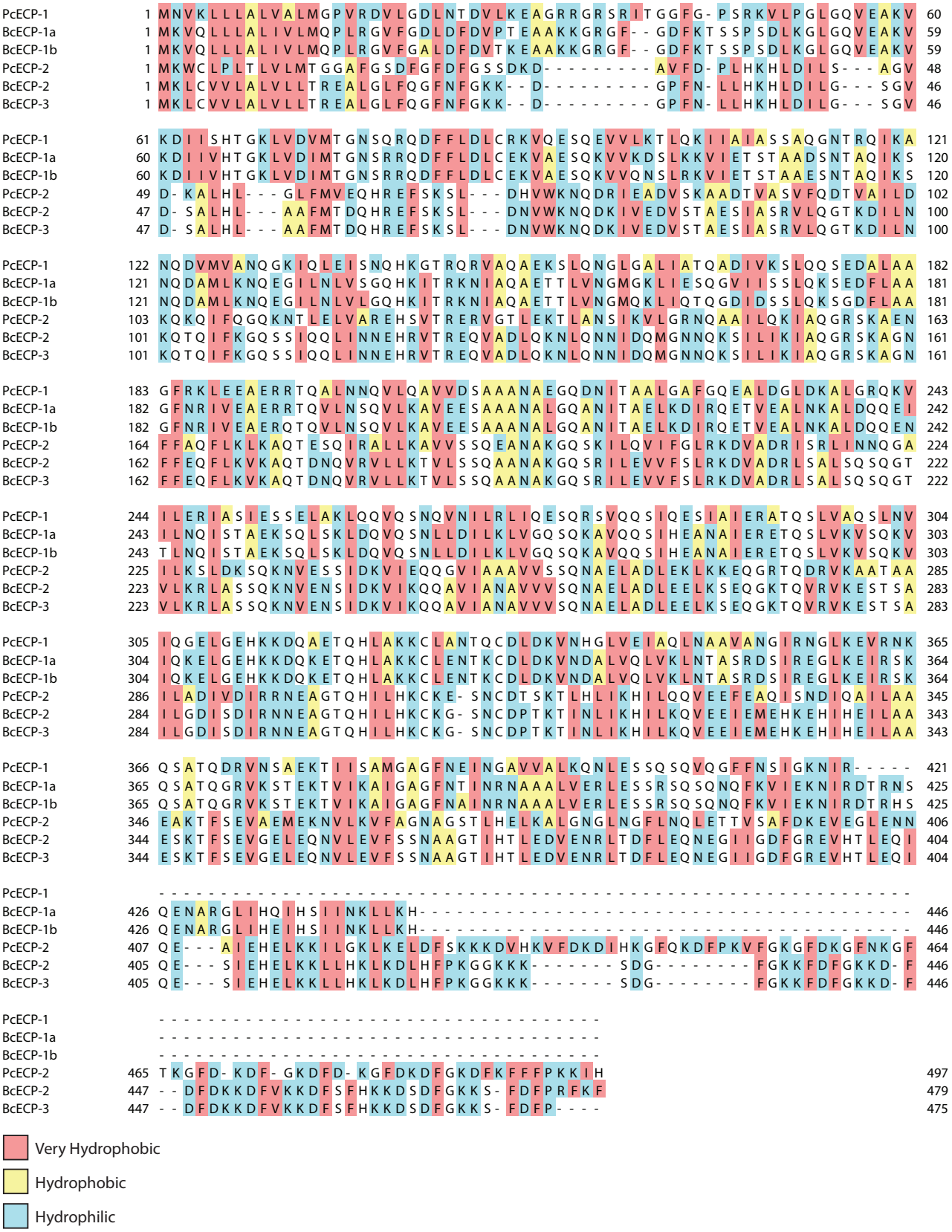

Figure S1. Hydrophobic amino acid residue placement in ClustalW aligned ECP sequences.

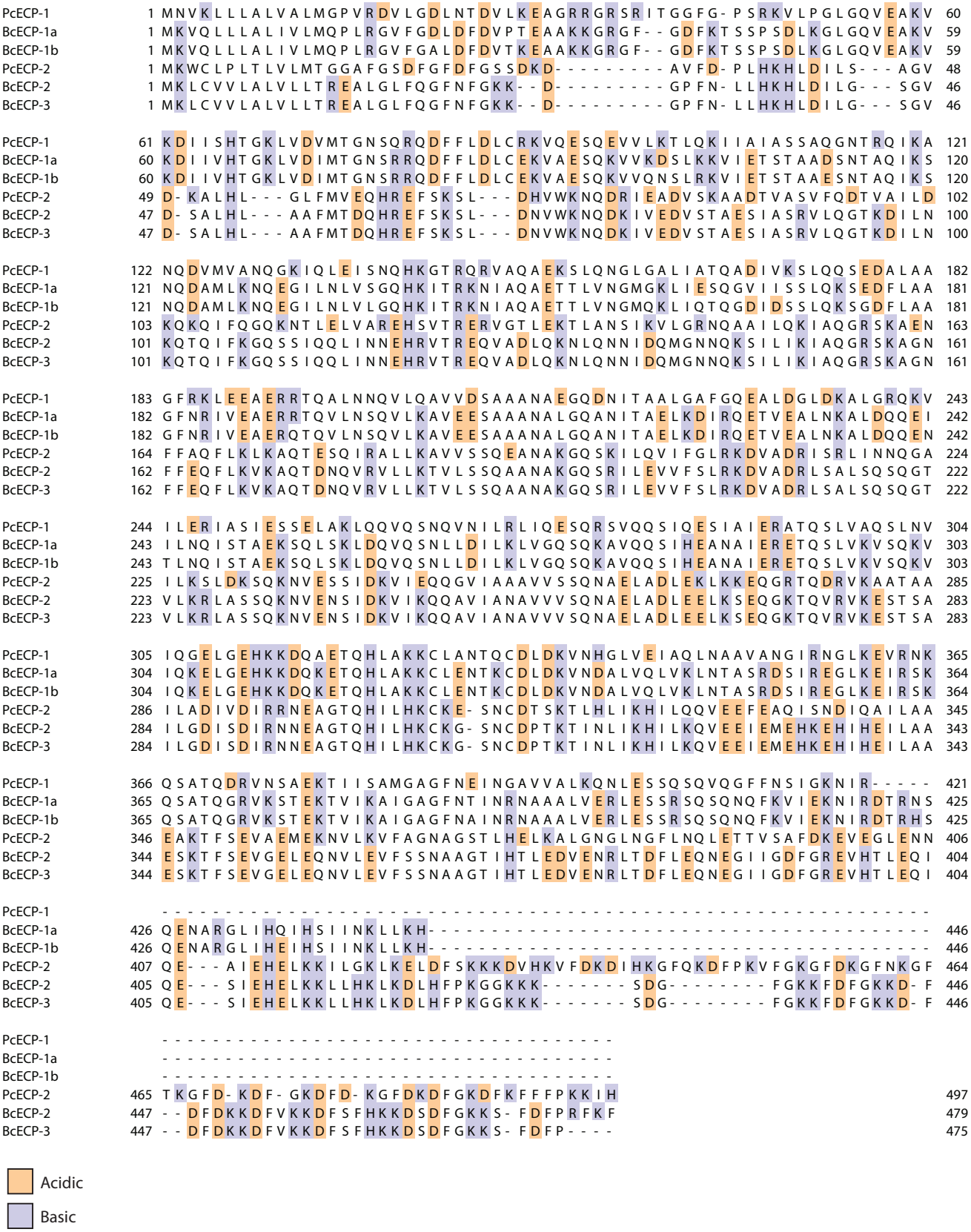

Figure S2. Charged amino acid residue placement in ClustalW aligned ECP sequences.