Table S2. Analysis of multiple sequence alignment of crystallins and crystallin-like proteins of molluscs

Crystallins	Number of analyzed sequences	The length of the analyzed sequences, in amino acid residues	Normalized conservation index by Mirny, Mean ± SD	Number of identical amino acids	Number of conservative substitutions	Number of semi-conservative substitutions
α-crystallins	23	Minimum: 87 Maximum: 233 Average: 156	0.83±0.26	**2**: P214 L232	**19**: D169 / N / E F173 / Y E176 / D / Q V178 / I / L I180 / V / L I187 / L / V I189 / V K192/ R H193 / R V203 / I E206 / Q R209 / K L213 / M / I D218 / N / E V222 / I / L / M L256 / M / V I234 / M / V I250 / V / L I252 / V	**7**: L168/ M / V / F E177 / D / N / H A191 / G E195 / S / Q S224 / C / A D229 / N / H / E G230 / N
J1A-crystallins	19	Minimum: 298 Maximum: 333 Average: 320	0.65±0.29	**30**: R29 A33 G36 V39 A40 D41 A42 A43 P46 H48 W49 Y51	**32**: L26 / V / I V34 / I V35 / I /L A37 / S L47 / I / V L56 / M L59 / I / V I60 / L E63/ D / Q / N S86 / T D90 / E	**20**: G32 / A A44 / V N52 / D / K E64 / S / Q T82 / N N102 / S K103 / S / E K111 / T K112 / D E116 / D/ k P120 / A D159 / H / E

F69	F93 / Y	S173 / K
S73	V95 / L / I /	H195 / Q / D
P76	M	P196 / T
F77	K97 / N	V203 / A
Y78	L99 / M	E212 / N / S
G83	L105 / I / V	N 213 / S / D
Y88	N106 / D	A216 / T / S / P
Q91	Y115 / F	G220 / A
V94	S122 / T	A224 / V
L96	E125 / D	P250 / S / A
S98	L146 / M / I /	G254 / S
V100	F	V269 / A
E101	I157 / L / V	V281 / A
G104	L161 / I	N288 / C
F118	Q169 / E / D	
G119	/ N	
Y124	T171 / S	
P147	T175 / S	
I148	R184 / K	
W152	V185 / I / M	
R153	V188 / L	
F160	L191 / M	
N163	L199 / M / F	
G172	E204 / D	
D176	V207 / L / I	
Q178	V209 / L / I	
D180	D214 / N	
P187	V217 / I	
A190	I231 / V	
Y192	V240 / L / I	
A193	N249 / D	
G194	V262 / L / M	
L200	L266 / I	
R208	Q267 / R	
Q211		
L221		
A223		
L227		
E228		
L232		
P266		
V280		

λ-crystallins	19	Minimum: 298 Maximum: 333 Average: 320	0.65±0.29	**30:** V43 L64 G71 G75 P107 K113 V116 S134 S141 P161 E169 P172 W175 T176 G192 P195 E201 G204 F205 R209 Q211 G242 G244 Y247 A248 G251 G262 Y270 P307	**52:** L35 / I / V F36 / Y L45 / I / V / M I60 / V / M / L R74 / K I86 / V V96 / L / I A98 / S V102 / I E104 / D V 106 / I / L E108 / D D121 / E I130 / V / L S133 / T S135 / T / A S136 / T L138 / I F143 / L / I L147 / M H149 / N K150 / R V155 / I H157 / N N160 / D L170 / I / V V171 / I T184 / A/ S L187 / I V191 / I / L L198 / I I210 / V W219 / Y / F M221 / L / I L227 / V / M / I D236 / N / E L243 / V / I F249 / L	**20:** S39 / A / G D47 / G E94 / D / S / Q G98 / D C105 / S E111 / D/ H D128 / E / S / Q R152 / Q / N L154 / V / I / F A173 / G / S D179 / K / E / S E190 / S / Q / K G225 / D N241 / E / Q / D P252 / A E254 / S D265 / S / N E268 / K / D / S A271 / G D309 / E / S

					I250 / M / L	
					H257 / Y	
					L258 / I	
					N259 / D	
					R269 / K	
					D272 / Q / E	
					V297 / I / L / M	
					L301 / M / I / F	
					R314 / K	
					D319 / E	
					L322 / M / V	
					L325 / F	
					L328 / F	
				72:	**46**:	**27**:
				M64	D71 / Q	F81 / V
				P65	N72 / D / E	K86 / T
				Y67	I74 / L	P89 / S
				S68	L78 / M / I	N102 / T / S
				T76	V79 / L	V122 / A / T
				K77	T80 / S	V124 / A / T
				F82	Q84 / K / N	K159 / T / S
				P83	D87 / N S90	S161 / Q / K
				N85	/ T	N164 / K / R
				H91	V96 / L	S167 / N
				A93	V79/ L	A177 / G
		Minimum: 250		I95	V97 / M	G181 / N
μ-crystallins	9	Maximum: 312	0.72±0.27	F98	V108 / I / L	A186 / V
		Average: 287		G103	M109 / I / L	E191 / K / S
				D110	S123 / T	V203 / A
				G111	I140 / L	K207 / S / D
				V113	L141 / I	D214 / S / E
				I114	S143 / A	R241 / N / H / Q
				T115	L154 / F / I	S242 / Q / N
				R118	F158 / Y	S243 / A / G
				T119	Q162 / K / E	E248 / D / K
				A120	V165 / I	E259 / D / S
				A121	R168 / H / K	L260 / V / I / F
				A126	L176 / F	F268 / Y / H
				T127	E179 / D	A269 / G
				K128	V194 / I	G277 / N / D

	L130	K195 / Q / R	K307 / D / N
	P135	D196 / N	
	L138	V199 / I	
	A139	V201 / I	
	G142	S206 / A	
	G144	V210 / L	
	Q146	A220 / T]	
	A147	Y246 / F	
	R148	A253 / S	
	S149	V267 / I	
	H150	I271 / L	
	A153	V274 / M	
	F160	I275 / V	
	W166	K285 / E	
	A173	M288 / V / I	
	A193	/ L	
	A197	M294 / V / L	
	D198	I296 / V	
	I200	S301 / T / A	
	T202	K303 / N	
	T204	L304 / I	
	P209	I309 / L	
	L211		
	W215		
	V216		
	K217		
	G219		
	H221		
	I222		
	N223		
	S257		
	G258		
	A265		
	E270		
	G272		
	E273		
	T287		
	F289		
	S291		
	L292		
	G293		
	A295		

				E297		
				D298		
				A302		
				V305		
Ω-crystallins	3	Minimum: 492 Maximum: 495 Average: 494	0.85±0.25	**274**: P7 K9 N10 P11 E12 I13 F19 I20 N21 N22 V25 A28 G30 K31 T32 P34 V35 I36 N37 P38 T40 K42 K43 I44 D46 Q58 E49 G50 K52 D54 D56 K57 A58 V59 A61 K63 A65	**117**: I4 / M K14 / R F15 / Y K17 / Q I18 / L Q23 / E Q24 / E D26 / N S27 / N Y33 / F V47 / I A53 / T I55 / V K67 / P T70 / S H82 / R R86 / K F91 / I H97 / Y L98 / Y S99 / A T103 / S N105 / D Y110 / F N112 / D Y114 / F Q115 / N Q123 / K F128 / Y A132 / T Q138 / K V142 / M D145 / N I155 / V Y166 / F M168 / L / I V169 / L	**33**: P5 / S P6 / T T16 / K N29 / S S51 / D C62 / A R74 / N T106 / N K111 / S N139 / T S148 / C A176 / G V204 / T T222 / P C224 / A S230 / E G254 / A S266 / G C269 / S P275 / S A286 / C A289 / G G301 / A S309 / D T323 / K E334 / R K354 / D A356 / G C416 / A N440 / S A462 / C S473 / G A480 / G

F66	M171 / L
G69	T172 / A
W72	M175 / I
R73	L179 / I
D76	S180 / A
A77	V185 / I
S78	I187 / L
R80	Y199 / H
G81	S202 / A
L83	V216 / M
L84	V217 / I
L87	S227 / A
A88	I234 / V
D89	N235 / D
L90	S238 / A
E92	K247 / Q
R93	L248 / I
D94	S256 / T
S100	S262 / T
L101	T277 / A
E102	F281 / A
L104	Q284 / E
G107	E288 / N
K108	S300 / A
P109	A302 / S
S113	H307 / Q
D117	E312 / D
M118	R317 / K
V119	I327 / V
L125	Y331 / F
R126	E332 / D
Y127	T335 / S
A129	I341 / V
G130	E343 / Q
W131	Y346 / F
D133	N347 / D
K134	V349 / I
G135	I350 / L
I140	E358 / Q
P141	K364 / E
D143	N368 / K
G144	K369 / R

	F146	D372 / N
	F147	Y376 / F
	T150	I377 / V
	K151	E378 / Q
	E153	S386 / T
	P154	D387 / E
	V155	N388 / D
	G156	K390 / R
	C158	L403 / I
	G159	M404 / I
	I161	R407 / K
	I162	L409 / M
	P163	D410 / E
	W164	I413 / V
	N165	D414 / Q
	P167	Q418 / K
	M170	S419 / T
	K174	M423 / L
	P177	N430 / K
	A178	V432 / I
	C181	N433 / D
	G182	K434 / R
	N183	I435 / V
	V186	F438 / Y
	K188	T439 / S
	P189	N443 / K
	A190	T444 / A
	E191	T451 / S
	Q192	Y452 / F
	T193	H453 / N
	P194	Y467 / F
	L195	M476 / L
	T196	K478 / E
	A197	R482 / Q
	L198	E483 / Q
	A201	T485 / S
	L203	S489 / T
	K205	R493/ K
	E206	
	A207	
	G208	
	F209	

	P210
	P211
	G212
	V213
	V214
	N215
	P218
	G219
	Y220
	G221
	T223
	G225
	I228
	S229
	H233
	K236
	V237
	F239
	T240
	G241
	S242
	T243
	E244
	V245
	G246
	V249
	M250
	Q251
	A252
	A253
	N257
	L258
	K259
	R260
	L263
	E264
	L265
	G267
	K268
	P270
	V272
	V273

F274
D276
D278
L279
D280
A282
V283
H287
F291
N293
M294
G295
Q296
C297
R303
T304
Y305
V306
E308
I310
Y311
F314
K316
V319
E320
A322
R325
G328
D329
P330
F338
P339
Q340
D342
E344
Q345
K348
I353
S355
Q359
G360
A361

	K362
	L363
	G366
	G367
	H370
	G371
	G374
	Y375
	P379
	T380
	V381
	F382
	S383
	V385
	M389
	I391
	K393
	E394
	E395
	I396
	F397
	G398
	P399
	V400
	Q401
	K405
	F406
	E411
	V412
	R415
	N417
	Y421
	G422
	A424
	A425
	A426
	I427
	T429
	D431
	M436
	T437
	V442

				G445 T446 V447 W448 V449 N450 P463 F464 G465 G466 K468 S470 G471 I472 R474 E475 L481 Y484 E486 V487 K488 I490 I491 P495 K497	
S-crystallins	51	Minimum: 182 Maximum: 318 Average: 220	0.75±0.25	**1:** G96	**4:** Y16 / F D45 / N / E E94 / Q / K D109 / E	**6:** F17 / L / V P71 / A L73 / V / F / I D84 / E / S D117 / E / S M291 / I / L / V
ζ-crystallins	3	Minimum: 105 Maximum: 323 Average: 239	0.64±0.20	**34**: V131 L132 V133 G139 N141 P142 D144 I147 G150	**25**: I133 / V K134 / Q A138 / S V140 / I T145 / A S149 / A F152 / M M164 / I E172 / K	**9**: P154 / T P157 / T G176 / N K178 / T G183 / N S193 / T / N K207 / S S215 / N A223 / G

	P159	K181 / N
	G163	T191 / A
	D165	A199 / S
	A167	Q200 / E
	G168	Y201 / F
	V173	A204 / T
	G174	L224 / V / I
	D184	V226 / I
	R185	T230 / S
	V186	W232 / H
	Y187	K233 / R
	G196	A234 / S
	Y198	L235 / I
	V203	Y236 / F
	L212	F237 / M
	L216	
	T217	
	F218	
	Q220	
	G221	
	A222	
	G225	
	P227	
	Y228	
	Y229	