

**Table S1: Protein identification with estimated and predicted molecular mass (kDa), isoelectric point (pI), GenBank identifier, MASCOT score, number of peptides matched, sequence coverage, and putative functional category.**

Spot ID	Protein ID	A	HS	I	Estimated MW	Estimated pI	Predicted MW	Predicted pI	GenBank ID	Mascot Score	Peptide Matches	Sequence Coverage	Functional Category
3	Paramyosin (long form)	✓			69	6.40	103.02	5.46	isotig00035	77	3	1%	Thick filament
4	Arginine kinase	✓			35	5.93	39.96	6.05	gi 170186144	170	5	20%	Phosphotransfer
5	Arginine kinase		✓		31	6.47	39.96	6.05	gi 170187671	391	8	42%	Phosphotransfer
6	Cardiac-like muscle actin	✓			31	6.03	41.65	5.23	gi 170182268	167	3	14%	Thin filament
7	Arginine kinase	✓			28	6.58	39.96	6.05	gi 170186144	294	7	29%	Phosphotransfer
8	Glyceraldehyde-3-phosphate dehydrogenase	✓			28	6.24	18.66	5.58	gi 170197231	86	3	21%	Energy metabolism
9	Phosphatidylethanolamine-binding protein	✓			28	6.00	20.36	6.07	gi 170189936	127	3	11%	Signaling
10	Hemocyanin	✓			27	6.94	76.32	5.83	gi 170187274	201	5	17%	Respiratory
11	Peroxiredoxin 5 isoform B	✓			25	6.78	19.88	8.88	gi 170265337	205	3	28%	Signaling
12	Hemocyanin	✓			25	6.76	76.32	5.83	gi 170187274	275	6	26%	Respiratory
13	αβ-Actin	✓			23	5.78	41.91	5.16	gi 170182624	321	5	24%	Thin filament
17	Gelsolin	✓			18	5.67	81.77	4.79	gi 170227754	273	3	20%	Actin-binding
18	Gelsolin	✓			18	5.38	81.77	4.79	gi 170227754	358	4	25%	Actin-binding
21	FK506-binding protein	✓			12	6.76	11.69	7.87	gi 170246946	102	1	23%	Signaling
22	Profilin	✓			9	6.76	13.89	6.27	gi 170182510	279	4	34%	Actin-binding
23	Arginine kinase	✓			46	6.66	39.96	6.05	gi 170186144	385	9	35%	Phosphotransfer
25	Paramyosin	✓			16	5.94	103.02	5.46	isotig00035	38	2	0%	Thick filament
26	Myosin heavy chain type B	✓			14	6.09	218.87	6.00	gi 170270277	158	3	13%	Thick filament
27	Myosin heavy chain type B	✓			13	6.08	218.87	6.00	gi 170270277	100	2	5%	Thick filament
29	Cardiac-like muscle actin	✓			12	6.27	41.65	5.23	gi 170182268	172	2	11%	Thin filament
30	Prostaglandin reductase	✓			19	5.84	36.49	8.31	gi 170218863	68	2	7%	Signaling
32	Phosphohistidine phosphatase 1	✓			11	6.39	13.82	5.34	gi 170217426	155	2	13%	Signaling
33	Cofilin	✓			19	6.45	19.34	8.50	isotig01165	201	5	11%	Actin-binding
34	αβ-Actin	✓			17	6.27	41.91	5.16	gi 170182624	184	4	20%	Thin filament
35	αβ-Actin	✓			17	6.29	41.91	5.16	gi 170182624	193	3	16%	Thin filament
36	Glyceraldehyde-3-phosphate dehydrogenase	✓			15	6.44	18.66	5.58	gi 170197231	336	5	29%	Energy metabolism
37	Hemocyanin	✓			24	6.30	75.27	5.52	gi 170187274	109	2	9%	Respiratory
38	Myosin heavy chain type B	✓			16	6.10	218.87	6.00	gi 170270277	99	2	5%	Thick filament
39	αβ-Actin	✓			14	6.26	41.91	5.16	gi 170182624	270	3	16%	Thin filament
40	Cardiac-like muscle actin	✓			21	6.22	41.65	5.23	gi 170182268	96	2	8%	Thin filament
42	Cardiac-like muscle actin	✓			13	6.31	41.65	5.23	gi 170182268	191	2	11%	Thin filament
46	Filamin-A	✓			68	6.87	267.69	5.81	isotig02107	54	2	3%	Actin-binding
49	Filamin-C	✓			63	6.68	262.65	5.90	gi 170202097	98	2	8%	Actin-binding
50	Enolase	✓			55	6.68	39.85	5.45	gi 170254092	181	3	16%	Energy metabolism
51	Enolase	✓			54	6.79	47.24	6.18	gi 170237664	202	3	14%	Energy metabolism
52	αβ-Actin	✓			36	5.76	41.91	5.16	gi 170182624	390	6	27%	Thin filament
53	Myosin regulatory light chain	✓			24	4.19	22.58	4.70	gi 170184074	281	5	11%	Thick filament
57	Hemocyanin	✓			79	6.01	75.27	5.52	gi 170278434	153	3	15%	Respiratory
58	Hemocyanin	✓			78	6.06	77.54	5.37	gi 170185161	122	3	14%	Respiratory
59	Hemocyanin	✓			79	6.10	75.27	5.52	gi 170278434	128	2	10%	Respiratory
62	Pseudohemocyanin-1	✓			56	5.27	79.57	5.69	gi 170189674	60	2	9%	Respiratory
67	Proteasome β-subunit type-6-like	✓			24	6.71	25.10	5.41	gi 170204742	46	2	6%	Signaling
70	Glyceraldehyde-3-phosphate dehydrogenase	✓			15	6.79	35.54	6.54	gi 170198680	147	3	15%	Energy metabolism
71	Myosin heavy chain type B	✓			13	6.68	218.87	6.00	gi 170270277	82	2	5%	Thick filament
73	Glyceraldehyde-3-phosphate dehydrogenase	✓			17	6.52	18.66	5.58	gi 170197231	318	5	29%	Energy metabolism
74	Glyceraldehyde-3-phosphate dehydrogenase	✓			16	6.45	18.66	5.58	gi 170197231	48	2	15%	Energy metabolism
75	Glyceraldehyde-3-phosphate dehydrogenase	✓			23	6.56	18.66	5.58	gi 170197231	253	3	18%	Energy metabolism
78	αβ-Actin	✓			57	4.62	41.91	5.16	gi 170190957	77	2	5%	Thin filament
79	αβ-Actin	✓			51	5.28	41.91	5.16	gi 170190957	390	7	21%	Thin filament
80	αβ-Actin	✓			53	5.12	41.91	5.16	gi 170190957	172	4	12%	Thin filament
81	αβ-Actin	✓			45	4.97	41.91	5.16	gi 170190957	439	7	21%	Thin filament
82	αβ-Actin	✓			54	6.64	41.91	5.16	gi 170190957	419	6	18%	Thin filament
83	Farnesoic acid O-methyltransferase	✓			43	4.56	31.45	4.56	gi 170188611	178	3	14%	Signaling
84	αβ-Actin	✓			39	4.85	41.91	5.16	gi 170190957	132	2	9%	Thin filament
85	αβ-Actin	✓			37	4.84	41.91	5.16	gi 170190957	400	6	21%	Thin filament
86	Sarcomeric α-actinin	✓			35	4.84	97.75	6.04	gi 170222152	132	6	30%	Actin-binding
87	Glycogen phosphorylase	✓			33	5.46	97.96	6.82	gi 170202348	147	5	17%	Energy metabolism
88	αβ-Actin	✓			32	5.56	41.91	5.16	gi 170182624	210	4	20%	Thin filament

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89	Arginine kinase	✓	31	5.71	40.34	6.34	gj 170183164	258	5	18%	Phosphotransfer
90	Arginine kinase	✓	29	5.45	40.34	6.34	gj 170183164	221	5	18%	Phosphotransfer
91	Arginine kinase	✓	29	5.42	40.34	6.34	gj 170183164	81	2	6%	Phosphotransfer
92	$\alpha/\beta$ -Actin	✓	28	5.43	41.91	5.16	gj 170182624	198	4	18%	Thin filament
94	Sarcoplasmic calcium-binding protein	✓	22	4.68	21.93	4.60	gj 170182977	168	3	14%	Signaling
95	Sarcoplasmic calcium-binding protein	✓	21	4.70	21.93	4.60	gj 170182977	161	3	14%	Signaling
96	Myosin regulatory light chain	✓	46	6.86	22.58	4.70	gj 170184074	273	5	11%	Thick filament
99	$\alpha/\beta$ -Actin	✓	46	5.22	41.91	5.16	gj 170190957	257	4	9%	Thin filament
100	Arginine kinase	✓	17	5.23	46.00	4.90	gj 170183164	283	5	23%	Phosphotransfer
101	Arginine kinase	✓	22	5.39	46.00	4.90	gj 170183164	202	4	15%	Phosphotransfer
102	Arginine kinase	✓	19	5.48	46.00	4.90	gj 170183164	135	3	11%	Phosphotransfer
103	14-3-3 $\zeta$	✓	36	4.66	27.96	4.65	gj 170194925	42	3	15%	Signaling
105	Myosin regulatory light chain	✓	21	4.20	22.58	4.70	gj 170184074	206	3	8%	Thick filament
106	Glyceraldehyde-3-phosphate dehydrogenase	✓	40	6.88	18.66	5.58	gj 170197231	344	3	24%	Energy metabolism
107	Arginine kinase	✓	38	6.86	46.00	4.90	gj 170186144	263	7	30%	Phosphotransfer
108	Arginine kinase	✓	35	6.64	46.00	4.90	gj 170186144	457	9	30%	Phosphotransfer
109	Arginine kinase	✓	35	6.80	46.00	4.90	gj 170186144	241	6	29%	Phosphotransfer
110	Arginine kinase	✓	35	6.66	46.00	4.90	gj 170186144	386	9	30%	Phosphotransfer
111	Arginine kinase	✓	35	6.84	46.00	4.90	gj 170186144	153	4	19%	Phosphotransfer
112	Triose-phosphate isomerase	✓	34	6.87	28.99	5.83	gj 170207221	119	3	16%	Energy metabolism
113	Arginine kinase	✓	33	6.79	46.00	4.90	gj 170186144	341	8	34%	Phosphotransfer
114	Arginine kinase	✓	33	6.63	46.00	4.90	gj 170186144	298	8	30%	Phosphotransfer
115	Arginine kinase	✓	31	6.63	46.00	4.90	gj 170186144	277	7	29%	Phosphotransfer
116	Arginine kinase	✓	40	6.81	46.00	4.90	gj 170186144	382	9	30%	Phosphotransfer
118	Paramyosin	✓	44	6.68	103.69	5.55	gj 170186119	142	3	18%	Thick filament
119	Muscle myosin heavy chain	✓	95	5.53	135.52	5.49	gj 170208087	113	3	21%	Thick filament
120	Muscle myosin heavy chain	✓	95	5.49	135.52	5.49	gj 170208087	70	2	10%	Thick filament
123	Myosin heavy chain type 1	✓	75	5.50	219.58	5.76	gj 170219699	65	2	10%	Thick filament
125	Gelsolin-like isoform 1	✓	90	5.03	44.36	7.68	gj 170227754	44	2	12%	Actin-binding
126	Muscle myosin heavy chain	✓	20	5.36	135.52	5.49	gj 170208087	110	3	15%	Thick filament
127	Sarcomeric $\alpha$ -actinin	✓	63	5.21	97.75	6.04	gj 170222152	295	6	30%	Actin-binding
128	$\alpha/\beta$ -Actin	✓	50	6.09	41.91	5.16	gj 170190957	374	6	18%	Thin filament
129	Enolase	✓	43	6.30	47.24	6.18	gj 170237664	321	7	38%	Energy metabolism
130	Glyceraldehyde-3-phosphate dehydrogenase	✓	40	6.56	18.66	5.58	gj 170197231	348	4	24%	Energy metabolism
131	Fast myosin heavy chain	✓	41	6.40	47.85	5.24	gj 170220415	146	2	26%	Thick filament
132	$\alpha/\beta$ -Actin	✓	53	6.11	41.91	5.16	gj 170190957	400	7	21%	Thin filament
133	Troponin T	✓	53	6.15	45.88	4.97	gj 170228768	120	2	15%	Thin filament
134	Arginine kinase	✓	37	6.63	46.00	4.90	gj 170186144	366	9	30%	Phosphotransfer
135	$\alpha/\beta$ -Actin	✓	50	6.27	41.91	5.16	gj 170190957	226	5	12%	Thin filament
136	$\alpha/\beta$ -Actin	✓	50	6.19	41.91	5.16	gj 170190957	388	6	18%	Thin filament
137	Pyruvate dehydrogenase E1 $\alpha$ -subunit	✓	45	6.23	43.20	7.58	gj 170183821	49	2	10%	Energy metabolism
138	Hemocyanin	✓	45	6.28	75.27	5.52	gj 170187274	209	4	18%	Respiratory
139	Notch-type protein	✓	67	6.62	44.88	7.22	gj 170248782	130	6	28%	Signaling
141	Filamin-C	✓	66	6.53	249.86	6.12	gj 170202097	80	2	9%	Actin-binding
142	Filamin-A	✓	61	6.65	287.86	6.61	gj 170203114	76	2	8%	Actin-binding
143	Phosphoglycerate kinase-like	✓	54	6.61	53.54	9.17	gj 170203088	229	6	27%	Energy metabolism
145	Arginine kinase	✓	46	6.57	46.00	4.90	gj 170186144	151	4	16%	Phosphotransfer
146	Filamin	✓	83	6.82	249.86	6.12	gj 170220786	86	2	11%	Actin-binding
148	Cardiac-like muscle actin	✓	53	6.21	41.65	5.23	gj 170182268	169	2	11%	Thin filament
149	Enolase	✓	53	6.72	39.85	5.45	gj 170254092	161	4	19%	Energy metabolism
150	Cardiac-like muscle actin	✓	41	5.75	41.65	5.23	gj 170182268	162	3	14%	Thin filament
153	Arginine kinase	✓	31	5.93	46.00	4.90	gj 170186144	264	7	33%	Phosphotransfer
154	Arginine kinase	✓	32	6.86	46.00	4.90	gj 170200859	391	8	29%	Phosphotransfer
155	Triose-phosphate isomerase	✓	31	6.85	26.98	5.87	gj 170254610	233	4	26%	Energy metabolism
156	Arginine kinase	✓	29	6.17	46.00	4.90	gj 170186144	88	3	14%	Phosphotransfer
157	Troponin T	✓	28	5.82	45.58	4.97	gj 170228768	96	2	11%	Thin filament
158	Adenylylate kinase	✓	28	6.65	29.30	8.05	gj 170218197	502	8	27%	Phosphotransfer
159	Arginine kinase	✓	28	5.65	46.00	4.90	gj 170183164	137	3	9%	Phosphotransfer
160	Hemocyanin subunit 1	✓	27	6.15	25.41	5.99	gj 170195414	168	4	17%	Respiratory
161	$\alpha/\beta$ -Actin	✓	25	5.77	41.91	5.16	gj 170182624	217	4	20%	Thin filament

Table S1 continued

162	Arginine kinase	✓	22	5.60	46.00	4.90	gi 170183164	206	4	9%	Phosphotransfer
163	Arginine kinase	✓	21	5.57	46.00	4.90	gi 170183164	353	5	21%	Phosphotransfer
164	Myosin regulatory light chain	✓	21	4.14	22.58	4.70	gi 170184074	176	3	8%	Thick filament
165	Arginine kinase	✓	20	5.21	46.00	4.90	gi 170183164	62	2	6%	Phosphotransfer
167	Glyceraldehyde-3-phosphate dehydrogenase	✓	20	6.55	18.66	5.58	gi 170197231	172	3	21%	Energy metabolism
168	Troponin T	✓	52	6.80	45.88	4.97	gi 170228768	45	2	8%	Thin filament
178	Slow muscle myosin S1 heavy chain	✓	66	5.51	58.53	5.22	gi 170194515	148	4	14%	Thick filament
179	Hemocyanin subunit 4	✓	65	5.47	77.04	5.30	gi 170214816	96	3	13%	Respiratory
180	$\alpha/\beta$ -Actin	✓	53	4.91	41.91	5.16	gi 170190957	223	6	18%	Thin filament
183	Arginine kinase	✓	29	5.69	46.00	4.90	gi 170183164	373	5	22%	Phosphotransfer
184	Arginine kinase	✓	23	5.17	46.00	4.90	gi 170183164	90	3	10%	Phosphotransfer
185	$\alpha/\beta$ -Actin	✓	20	5.10	41.91	5.16	gi 170190957	151	4	6%	Thin filament
187	Hemocyanin	✓	24	6.75	75.27	5.52	gi 170187274	215	5	17%	Respiratory
189	Paramyosin (long form)	✓	67	6.19	103.02	5.83	isotig00035	62	2	0%	Thick filament
192	Tropomyosin (slow muscle isoform)	✓	47	4.48	32.89	4.74	gi 170187278	348	7	26%	Thin filament
193	F1-ATP synthase $\beta$ -subunit	✓	68	6.13	55.80	5.31	gi 170221081	361	7	33%	Energy metabolism
194	Myosin heavy chain type 1	✓	81	5.55	219.58	5.76	gi 170219699	64	2	10%	Thick filament
198	Myosin regulatory light chain	✓	20	4.12	22.58	4.70	gi 170184074	311	6	14%	Thick filament
200	Myosin heavy chain type 1	✓	95	5.63	219.58	5.76	gi 170219699	100	2	9%	Thick filament
203	$\alpha/\beta$ -Actin	✓	50	5.90	41.91	5.16	gi 170190957	380	6	18%	Thin filament
204	Tropomyosin (slow muscle isoform)	✓	47	4.51	32.89	4.74	gi 170187278	407	8	27%	Thin filament
320	Fructose 1,6-bisphosphate aldolase	✓	15	5.44	25.64	5.47	gi 170216091	287	5	31%	Energy metabolism
387	$\alpha/\beta$ -Actin	✓	58	5.28	41.91	5.16	gi 170190957	193	6	15%	Thin filament
439	Myosin heavy chain type B	✓	108	6.10	218.87	6.00	gi 170211824	42	2	8%	Thick filament