

Supplementary Table 1. List of specimens used in this study

Species	Specimen no.	Sex	Locality	Country	Methods	
<i>Enhydra lutris</i>	NSM37707	F ^{a)}	U ^{b)*}	Japan	B ^{c)}	
	ODA20080522-01	M ^{d)}	U*	Japan	B, MM ^{e)}	
	UMUT08392	M	U*	Japan	B, MM	
	UMUT12247	F	U*	Japan	MM	
	UMUT13047	M	U*	Japan	MM	
	USNM271748	M	Alaska	United States	B	
	USNM265075	M	Alaska	United States	B	
	USNM21336	M	Kamchatka	Russia	B	
	USNM49459	U	Kamchatka	Russia	B	
	USNM396641	M	U	U	B	
	USNMA03642	U	Oregon	United States	B	
	USNM49492	U	U	Russia	B	
	USNM13304	U	U	U	B	
	USNM93954	M	Washington	United States	B	
	USNM271749	U	Alaska	United States	B	
<i>Lutra lutra</i>	NSM16201	F	Kochi	Japan	B	
	NSM33858	M	U	U	B	
	NSM33859	F	U	U	B	
	NSM19652	U	U	U	B	
	NSM17237	M	Chiba	Japan	B	
	AKOC10006	M	Gangwon	Korea	B, MM	
	AKOC10020	M	Busan	Korea	B, MM	
	AKOC10039	M	Ulsan	Korea	B, MM	
	AKOC10022	F	Hwacheon	Korea	B, MM	
	AKOC10001	M	U	Korea	B, MM	
<i>Neovison vison</i>	UMUT11026	M	Fukushima	Japan	MM	
	UMUT11027	M	Fukushima	Japan	MM	
	UMUT11028	M	Fukushima	Japan	MM	
	UMUT11029	F	Fukushima	Japan	MM	
	NSM39251	F	Hokkaido	Japan	MM	
	HIR16	M	Kagawa	Japan	B	
	HIR18	M	Kagawa	Japan	B	
	HIR19	M	Kagawa	Japan	B	
	HIR20	M	Kagawa	Japan	B	
	HIR21	M	Kagawa	Japan	B	
	HIR22	M	Kagawa	Japan	B	
	HIR28	M	Kagawa	Japan	B	
	HIR29	M	Kagawa	Japan	B	
	HIR44	M	Kagawa	Japan	B	
	HIR45	M	Kagawa	Japan	B	
	<i>Mustela itatsi</i>	ABE93	M	Hyogo	Japan	B
		ABE94	M	Hyogo	Japan	B
ABE95		M	Hyogo	Japan	B	
ABE96		M	Hyogo	Japan	B	
ABE97		M	Hyogo	Japan	B	
ABE98		M	Hyogo	Japan	B	

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Species	Specimen no.	Sex	Locality	Country	Methods	
<i>Mustela itatsi</i>	ABE100	M	Hyogo	Japan	B	
	ABE101	M	Hyogo	Japan	B	
	ABE102	M	Hyogo	Japan	B	
	ABE129	M	Hyogo	Japan	B	
	ABE131	M	Hyogo	Japan	B	
	ABE132	M	Hyogo	Japan	B	
	ABE133	M	Hyogo	Japan	B	
	ABE134	M	Hyogo	Japan	B	
	ABE135	M	Hyogo	Japan	B	
	ABE136	M	Hyogo	Japan	B	
	ABE138	M	Hyogo	Japan	B	
	ABE139	M	Hyogo	Japan	B	
	ABE141	M	Hyogo	Japan	B	
	ABE142	M	Hyogo	Japan	B	
	ABE143	M	Hyogo	Japan	B	
	ABE144	M	Hyogo	Japan	B	
	ABE145	M	Hyogo	Japan	B	
	ABE146	M	Hyogo	Japan	B	
	KPM-NF1004897	M	Kanagawa	Japan	B, MM	
	KPM-NF1004898	M	Kanagawa	Japan	B, MM	
	SS1001	M	Shizuoka	Japan	MM	
	SS1002	M	Shizuoka	Japan	MM	
	UMUT13044	M	Tokyo	Japan	MM	
	UMUT13045	M	Saitama	Japan	MM	
	UMUT13046	M	Gifu	Japan	MM	
	<i>Mustela sibirica</i>	ABE35	M	Hyogo	Japan	B
		ABE42	M	Hyogo	Japan	B
		ABE117	M	Hyogo	Japan	B
		ABE137	M	Hyogo	Japan	B
		ABE140	M	Hyogo	Japan	B
ABE151		M	Hyogo	Japan	B	
ABE153		M	Hyogo	Japan	B	
ABE173		M	Hyogo	Japan	B	
ABE189		M	Hyogo	Japan	B	
ABE212		M	Hyogo	Japan	B	
ABE213		M	Hyogo	Japan	B	
ABE224		M	Hyogo	Japan	B	
ABE228		M	Hyogo	Japan	B	
ABE285		M	Hyogo	Japan	B	
ABE287		M	Hyogo	Japan	B	
ABE288		M	Hyogo	Japan	B	
ABE294		M	Hyogo	Japan	B	
ABE591		M	Hyogo	Japan	B	
ABE600		M	Hyogo	Japan	B	
ABE662		M	Hyogo	Japan	B	
ABE663		M	Hyogo	Japan	B	
ABE713		M	Hyogo	Japan	B	

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Species	Specimen no.	Sex	Locality	Country	Methods
<i>Mustela sibirica</i>	ABE737	M	Hyogo	Japan	B
	SS5	M	Kyoto	Japan	MM
	SS15	M	Kyoto	Japan	MM
	SS22	M	Kyoto	Japan	MM
	SS27	M	Kyoto	Japan	MM
	SS1003	M	Kyoto	Japan	MM

a) F, female. b) U, unknown. Asterisks indicate the specimens came from aquariums. c) B, bone measurement. d) M, male. e) MM, muscle mass. The prefix abbreviations of specimen numbers mean the following: ABE, Private collection belonging to Mikiko Abe; AKOC, Association of Korean Otter Conservation; HIR, Private collection belonging to Satoshi Kawaguchi; KPM, Kanagawa Prefectural Museum of Natural History; NSM, National Museum of Nature and Science, Tokyo; ODA, Private collection belonging to Sen-ichi Oda; SS, Private collection belonging to Satoshi Suzuki; UMUT, The University Museum, The University of Tokyo; USNM, Smithsonian Institution National Museum of Natural History.

Supplementary Table 2. Nomenclature of hind limb muscles in this and previous studies

Fisher, 1942 (<i>Lontra canadensis</i>) [14]	Howard, 1975 (<i>Enhydra lutris</i>) [16]	Klingener, 1979 (<i>Neovison vison</i>) [21]	Evans, 1993 (<i>Canis lupus</i>) [9]	This study
Gluteus maximus	Gluteus maximus	Gluteus maximus	Gluteus superficialis	Gluteus superficialis
Gluteus medius	Gluteus medius	Gluteus medius	Gluteus medius	Gluteus medius
Gluteus minimus	Gluteus minimus	Gluteus minimus	Gluteus profundus	Gluteus profundus
Piriformis	Piriformis	----	Piriformis	Piriformis
Gemellus superior	(Iliocapsularis)	----	Gluteus profundus	Iliocapsularis
Gemellus medius	Gemelli	Gemellus superior	Gemelli	Gemelli
Gemellus inferior	Gemelli	Gemellus inferior	Gemelli	Gemelli
Quadratus femoris	Iliocapsularis (quadratus femoris)	Quadratus femoris	Quadratus femoris	Quadratus femoris
Obturator externus	Obturator externus	Obturator externus	Obturator externus	Obturator externus
Obturator internus	Obturator internus	Obturator internus	Obturator internus	Obturator internus
Iliopsoas	Iliopsoas	Iliopsoas	Iliopsoas	Iliopsoas
Tensor fasciae latae	----	Tensor fasciae latae	Tensor fasciae latae	Tensor fasciae latae
Biceps femoris	Biceps femoris	Biceps femoris	Biceps femoris	Biceps femoris
Tenuissimus	Tenuissimus	Tenuissimus	Abductor cruris caudalis (tenuissimus)	Tenuissimus
Caudofemoralis	Caudofemoralis	Femorococcygeus (Caudofemoralis)	----	Gluteofemoralis
Semitendinosus	Semitendinosus	Semitendinosus	Semitendinosus	Semitendinosus
Semimembranosus	Semimembranosus	Semimembranosus	Semimembranosus cranial head	Semimembranosus cranialis
----	----	Presemimembranosus	Semimembranosus caudal head	Semimembranosus caudalis
Presemimembranosus	Presemimembranosus	----	----	Presemimembranosus
Sartorius	Sartorius	Sartorius	Sartorius	Sartorius
Gracilis	Gracilis	Gracilis	Gracilis	Gracilis
Adductor femoris	Adductor femoris	Adductor magnus	Adductor magnus et brevis	Adductor
Adductor longus	Adductor longus	Adductor longus	Adductor longus	Adductor
Pectineus	Pectineus	----	Pectineus	Pectineus
Rectus femoris	Rectus femoris	Rectus femoris	Rectus femoris	Rectus femoris
Vastus lateralis	Vastus lateralis	Vastus lateralis	Vastus lateralis	Vastus lateralis
Vastus medialis	Vastus medialis	Vastus medialis	Vastus medialis	Vastus medialis
----	----	Vastus intermedius	Vastus intermedius	Vastus intermedius
Gastrocnemius	Gastrocnemius	Medial head, gastrocnemius	Medial head, gastrocnemius	Gastrocnemius caput medialis
----	----	Lateral head, gastrocnemius	Lateral head, gastrocnemius	Gastrocnemius caput lateralis
Plantaris	Plantaris	Flexor digitorum superficialis	Flexor digitorum superficialis	Plantaris
Soleus	----	----	----	Soleus
Popliteus	Popliteus	Popliteus	Popliteus	Popliteus
Flexor longus digitorum	Flexor digitorum longus	Flexor digitorum longus	Flexor digitorum longus	Flexor digitorum longus
Flexor longus hallucis	Flexor hallucis longus	Flexor hallucis longus	Flexor hallucis longus	Flexor hallucis longus
Tibialis posterior	Tibialis posterior	Tibialis caudalis (Tibialis posterior)	Tibialis caudalis	Tibialis caudalis
Peroneus longus	Peroneus longus	Fibularis longus (Peroneus longus)	Peroneus longus	Peroneus longus
Peroneus digiti quinti	Peroneus digiti quinti	Extensor digitorum lateralis (Peroneus tertius)	Extensor digitorum lateralis	Peroneus digiti quinti
Peroneus brevis	Peroneus brevis	Fibularis brevis	Peroneus brevis	Peroneus brevis
Extensor longus digitorum	Extensor digitorum longus	Extensor digitorum longus	Extensor digitorum longus	Extensor digitorum longus
Tibialis anterior	Tibialis anterior	Tibialis cranialis (Tibialis anterior)	Tibialis cranialis	Tibialis cranialis
Extensor brevis digitorum	Extensor digitorum brevis	----	Extensor digitorum brevis	Extensor digitorum brevis
Flexor brevis digitorum	Flexor digitorum brevis	----	Interflexorii	Flexor digitorum brevis
Quadratus plantae	Quadratus plantae	----	Quadratus plantae	Quadratus plantae
Lumbricales	Lumbricales	----	Lumbricales	Lumbricales
Abductor medius digiti quinti	----	----	Interosseus	Interosseus
Adductor medius digiti quinti	----	----	Adductor digiti quinti	Interosseus
Opponens digiti quinti	Opponens digiti quinti	----	Adductor digiti quinti	Interosseus
Calcaneometatarsalis	Calcaneometatarsalis	----	----	Calcaneometatarsalis
Adductor brevis hallucis	----	----	----	Interosseus
Abductor medius hallucis	----	----	----	Interosseus
Extensor hallucis proprius	Extensor hallucis proprius (longus)	Extensor hallucis longus	Extensor hallucis longus	Extensor hallucis longus
Abductor medius digiti secundi	----	----	Abductor medius digiti secundi	Interosseus
Interosseus	Interosseus	----	Interosseus	Interosseus