

Table S2. List of taxon sampling for this study. Abbreviations: MVZ = Museum of Vertebrate Zoology, University of California, Berkeley; MCZ = Museum of Comparative Zoology, Harvard University; AMNH = American Museum of Natural History; NMNH = National Museum of Natural History, Smithsonian Institution.

Classification	Genus	Species	Source
Eutheria			
Rodentia			
Dipodidae	<i>Jaculus</i>	<i>jaculus</i>	Egypt; GenBank
	<i>Jaculus</i>	<i>blanfordi</i>	MVZ192036
	<i>Allactaga</i>	<i>hotsoni</i>	MVZ1992077
	<i>Cardiocranius</i>	<i>paradoxus</i>	MVZ175166
	<i>Eremodipus</i>	<i>lichtensteini</i>	Russia
	<i>Allactaga</i>	<i>major</i>	Russia
	<i>Allactodipus</i>	<i>bobrinskii</i>	Russia
	<i>Alactagulus</i>	<i>pumilio</i>	Xinjiang, China
	<i>Dipus</i>	<i>sagitta</i>	Nei Mongol, China
	<i>Allactaga</i>	<i>sibirica</i>	Nei Mongol, China
	<i>Allactaga</i>	<i>bullata</i>	Xinjiang, China
	<i>Stylodipus</i>	<i>telum</i>	Xinjiang, China
	<i>Euchoreutes</i>	<i>naso</i>	Xinjiang, China
	<i>Allactaga</i>	<i>elater</i>	Xinjiang, China
	<i>Salpingotus</i>	<i>kozlovi</i>	Xinjiang, China
Zapodidae	<i>Zapus</i>	<i>hudsonius</i>	MCZ, Harvard
	<i>Napaeozapus</i>	<i>insignis</i>	MCZ, Harvard
Sicistidae	<i>Sicista</i>	<i>S. tianshanica</i> , Xinjiang, China; <i>S. kazbegica</i> , GenBank	
Muridae	<i>Mus</i>	<i>musculus</i>	GenBank
	<i>Rattus</i>	<i>norvegicus</i>	GenBank
Cricetidae	<i>Peromyscus</i>	<i>polionotus</i>	MCZ64944
	<i>Peromyscus</i>	<i>leucopus</i>	MCZ63171
Heteromyidae	<i>Dipodomys</i>	<i>D. ordii</i> , MCZ; <i>D. spectabilis</i> , <i>D. merriami</i> , <i>D. heermanni</i> , GenBank	
Castoridae	<i>Castor</i>	<i>Canadensis</i>	GenBank
Sciuridae	<i>Tamias</i>	<i>Striatus</i>	MCZ64175; GenBank
	<i>Glaucomys</i>	<i>Volans</i>	MCZ66196; GenBank
Octodontidae	<i>Octodontomys</i>	<i>gliroides</i>	AMCC103810, AMNH; GenBank
Hystricidae	<i>Atherurus</i>	<i>macrourus</i>	AMCC125125, AMNH; GenBank
Erethizontidae	<i>Erethizon</i>	<i>dorsatum</i>	GenBank
Geomyidae	<i>Thomomys</i>	<i>T. bottae</i> , MVZ174912; <i>T. talpoides</i> , GenBank	
Caviidae	<i>Cavia</i>	<i>C. aperea</i> , MVZ183276; <i>C. porcellus</i> , <i>C. tschudii</i> , GenBank	
Ctenodactylidae	<i>Ctenodactylus</i>	<i>C. gundi</i> , MVZ201014; <i>C. vali</i> , GenBank	
Aplodontidae	<i>Aplodontia</i>	<i>rufa</i>	MVZ198835; GenBank
Lagomorpha			
Ochotonidae	<i>Ochotona</i>	<i>O. princeps</i> , USNM568433, NMNH; <i>O. hyperborea</i> , GenBank	
Leporidae	<i>Sylvilagus</i>	<i>floridanus</i>	USNM567962, NMNH; GenBank
Primates			

Lemuridae	<i>Lemur</i>	<i>catta</i>	AMCC100346, AMNH; GenBank
Hominidae	<i>Homo</i>	<i>sapiens</i>	GenBank
Carnivora			
Canidae	<i>Canis</i>	<i>familiaris</i>	GenBank
Felidae	<i>Felis</i>	<i>catus</i>	GenBank
Perissodactyla			
Equidae	<i>Equus</i>	<i>cabailus</i>	GenBank
Marsupialia			
Didelphidae	<i>Monodelphis</i>	<i>domestica</i>	GenBank