

Table S1: Published mitogenomes used in analyses from Genbank. Includes both equids and non-equid outgroups.

Sample name	Species name	Common name/breed	Location	Genbank acc. no.	Reference
Bel001	<i>Equus caballus</i>	Belgian draft	Europe centre	JN398420	[19]
NoF001	<i>E. caballus</i>	Norwegian fjord	Europe North	JN398398	[19]
CsP001	<i>E. caballus</i>	Caspian pony	Middle East	JN398378	[19]
Sil001	<i>E. caballus</i>	Silensian	Europe centre	JN398431	[19]
Mrm009	<i>E. caballus</i>	Maremmano	Europe south	JN398456	[19]
AkT001	<i>E. caballus</i>	Akhal-Teke	Asia centre	JN398450	[19]
Mrm001	<i>E. caballus</i>	Maremmano	Europe south	JN398437	[19]
Prz002	<i>E. przewalskii</i>	Przewalski	Asia centre	JN398403	[19]
HQ439484	<i>E. przewalskii</i>	Przewalski	East Asia	HQ439484	[17]
AP012269	<i>E. przewalskii</i>	Przewalski	San Diego Zoo	AP012269	[14]
AP012271	<i>E. africanus somalicus</i>	Somalian wild ass	San Diego Zoo Glasgow Vet. Sc.	AP012271	[14]
X97337	<i>E. asinus</i>	Domestic donkey	Sc.	X97337	[25]
HM118851	<i>E. kiang</i>	Kiang	Tibet	HM118851	[24]
FJ905816	<i>Dicerorhinus sumatrensis</i>	Sumatran rhinoceros	Cincinnati Zoo	FJ905816	[90]
FJ905813	<i>Coelodonta antiquitatis</i>	Woolly rhinoceros	Yakutia, Russia	FJ905813	[90]
X97336	<i>Rhinoceros unicornis</i>	Indian rhinoceros	Berlin Zoo NHM, Uni.	X97336	[25]
FJ905815	<i>Rhinoceros sondaicus</i>	Javan rhinoceros	Oxford Uni.	FJ905815	[90]
Y07726	<i>Ceratotherium simum</i>	White rhinoceros	Copenhagen Copenhagen Zoo	Y07726	[91]
FJ905814	<i>Diceros bicornis</i>	Black rhinoceros	Zoo	FJ905814	[90]
AJ428947	<i>Tapirus terrestris</i>	Lowland tapir	Kolmården Zoo, Sweden	AJ428947	Janke et al. Unpubl.