

GEPHE SUMMARY

<p>POLLED locus (<a href="https://www.gephebase.org/search-criteria?/and+Gene+Gephebase=^POLLED+locus^#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Gene+Gephebase=^POLLED+locus^#gephebase-summary-title</a>)</p> <p>Published</p>	<p>Gephebase Gene</p> <p>Entry Status</p>	<p>GP00002030</p> <p>Courtier</p>	<p>GepheID</p> <p>Main curator</p>
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PHENOTYPIC CHANGE

<p>Morphology (<a href="https://www.gephebase.org/search-criteria?/and+Trait+Category=^Morphology^#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Trait+Category=^Morphology^#gephebase-summary-title</a>)</p> <p>Horns absence (<a href="https://www.gephebase.org/search-criteria?/and+Trait=^Horns+absence^#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Trait=^Horns+absence^#gephebase-summary-title</a>)</p> <p>Bos bovis - horns</p> <p>Bos bovis - hornless - Mongolian allele P<sub>[sub]M</sub> OR P<sub>[sub]219ID</sub></p> <p>Taxon A</p> <p>Domesticated (<a href="https://www.gephebase.org/search-criteria?/and+Taxonomic+Status=^Domesticated^#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Taxonomic+Status=^Domesticated^#gephebase-summary-title</a>)</p>	<p>Trait Category</p> <p>Trait</p> <p>Trait State in Taxon A</p> <p>Trait State in Taxon B</p> <p>Ancestral State</p> <p>Taxonomic Status</p>
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Taxon A	Latin Name
Bos taurus ( <a href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=^Bos+taurus^#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=^Bos+taurus^#gephebase-summary-title</a> )	
cattle	Common Name
Bos bovis; Bos primigenius taurus; cattle; bovine; cow; dairy cow; domestic cattle; domestic cow; Bos taurus Linnaeus, 1758; Bos Taurus	Synonyms
species	Rank
cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Deuterostomia; Chordata; Craniata; Vertebrata; Gnathostomata; Teleostomi; Euteleostomi; Sarcopterygii; Dipnotetrapodomorpha; Tetrapoda; Amniota; Mammalia; Theria; Eutheria; Boreoeutheria; Laurasiatheria; Artiodactyla; Ruminantia; Pecora; Bovidae; Bovinae; Bos	Lineage
Bos (oxen, cattle) - (Rank: genus) ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9903">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9903</a> )	Parent
9913 ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9913">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9913</a> )	NCBI Taxonomy ID
No	is Taxon A an Intraspecies?

Taxon B #1	Latin Name
Bos taurus ( <a href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=^Bos+taurus^#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=^Bos+taurus^#gephebase-summary-title</a> )	
cattle	Common Name
Bos bovis; Bos primigenius taurus; cattle; bovine; cow; dairy cow; domestic cattle; domestic cow; Bos taurus Linnaeus, 1758; Bos Taurus	Synonyms
species	Rank
cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Deuterostomia; Chordata; Craniata; Vertebrata; Gnathostomata; Teleostomi; Euteleostomi; Sarcopterygii; Dipnotetrapodomorpha; Tetrapoda; Amniota; Mammalia; Theria; Eutheria; Boreoeutheria; Laurasiatheria; Artiodactyla; Ruminantia; Pecora; Bovidae; Bovinae; Bos	Lineage
Bos (oxen, cattle) - (Rank: genus) ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9903">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9903</a> )	Parent
9913 ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9913">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9913</a> )	NCBI Taxonomy ID
No	is Taxon B an Intraspecies?

Taxon B #2	Latin Name
Bos grunniens ( <a href="https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=^Bos+grunniens^#gephebase-summary-title">https://www.gephebase.org/search-criteria?/and+Taxon+and+Synonyms=^Bos+grunniens^#gephebase-summary-title</a> )	
domestic yak	Common Name
Bos mutus grunniens; Poephaqus grunniens; domestic yak; yak	Synonyms
species	Rank
cellular organisms; Eukaryota; Opisthokonta; Metazoa; Eumetazoa; Bilateria; Deuterostomia; Chordata; Craniata; Vertebrata; Gnathostomata; Teleostomi; Euteleostomi; Sarcopterygii; Dipnotetrapodomorpha; Tetrapoda; Amniota; Mammalia; Theria; Eutheria; Boreoeutheria; Laurasiatheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae; Bovinae; Bos	Lineage
Bos (oxen, cattle) - (Rank: genus) ( <a href="https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9903">https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=9903</a> )	Parent

30521

<https://www.ncbi.nlm.nih.gov/Taxonomy/Browser/wwwtax.cgi?id=30521>

is Taxon B an Intraspecies?

No

## GENOTYPIC CHANGE

-	Generic Gene Name	UniProtKB
-	Synonyms	GenebankID or UniProtKB
-	String	
-	Sequence Similarities	
-	GO - Molecular Function	
-	GO - Biological Process	
-	GO - Cellular Component	
-		Presumptive Null
No	<a #gephebase-summary-title"="" href="https://www.gephebase.org/search-criteria?/and+Presumptive Null=" no"="">https://www.gephebase.org/search-criteria?/and+Presumptive Null="No" #gephebase-summary-title</a>	
		Molecular Type
Cis-regulatory	<a #gephebase-summary-title"="" cis-regulatory"="" href="https://www.gephebase.org/search-criteria?/and+Molecular Type=">https://www.gephebase.org/search-criteria?/and+Molecular Type="Cis-regulatory" #gephebase-summary-title</a>	Aberration Type
Complex Change	<a #gephebase-summary-title"="" change"="" complex="" href="https://www.gephebase.org/search-criteria?/and+Aberration Type=">https://www.gephebase.org/search-criteria?/and+Aberration Type="Complex Change" #gephebase-summary-title</a>	Molecular Details of the Mutation
a complex 219-bp duplicationâ€”insertion (P219ID) beginning at 1;976;128 bp and a 7-bp deletion and 6-bp insertion (P1ID) located 621 bp upstream of this position. This rearrangement results in duplication of an 11-bp motif (5â€²-AAAGAAGCAA-3â€²) that is entirely conserved among Bovidae and that is also duplicated in the 80-kb duplication responsible for Friesian polledness.		Experimental Evidence
Association Mapping	<a #gephebase-summary-title"="" association="" href="https://www.gephebase.org/search-criteria?/and+Experimental Evidence=" mapping"="">https://www.gephebase.org/search-criteria?/and+Experimental Evidence="Association Mapping" #gephebase-summary-title</a>	Main Reference
Whole-genome analysis of introgressive hybridization and characterization of the bovine legacy of Mongolian yaks. (2017) <a href="https://pubmed.ncbi.nlm.nih.gov/28135247">https://pubmed.ncbi.nlm.nih.gov/28135247</a>		Authors
Medugorac I; Graf A; Grohs C; Rothammer S; Zagdsuren Y; Gladyr E; Zinovieva N; Barbieri J; Seichter D; Russ I; Eggen A; Hellenthal G; Brem G; Blum H; Krebs S; Capitan A		Abstract
The yak is remarkable for its adaptation to high altitude and occupies a central place in the economies of the mountainous regions of Asia. At lower elevations, it is common to hybridize yaks with cattle to combine the yak's hardiness with the productivity of cattle. Hybrid males are sterile, however, preventing the establishment of stable hybrid populations, but not a limited introgression after backcrossing several generations of female hybrids to male yaks. Here we inferred bovine haplotypes in the genomes of 76 Mongolian yaks using high-density SNP genotyping and whole-genome sequencing. These yaks inherited âˆ¼41.3% of their genome from bovine ancestors after nearly continuous admixture over at least the last 1,500 years. The introgressed regions are enriched in genes involved in nervous system development and function, and particularly in glutamate metabolism and neurotransmission. We also identified a novel mutation associated with a polled (hornless) phenotype originating from Mongolian Turano cattle. Our results suggest that introgressive hybridization contributed to the improvement of yak management and breeding.		Additional References

## RELATED GEPHE

No matches found.	Related Genes
	Related Haplotypes
3 <a and+taxon="" gephebase="POLLED locus" href="https://www.gephebase.org/search-criteria?/or+Gene Gephebase=" id="30521 #gephebase-summary-title" locus"="" or+gene="" polled="">https://www.gephebase.org/search-criteria?/or+Gene Gephebase="POLLED locus"/and+Taxon ID="9913"/or+Gene Gephebase="POLLED locus"/and+Taxon ID="9913"/or+Gene Gephebase="POLLED locus"/and+Taxon ID="30521 #gephebase-summary-title</a>	

## EXTERNAL LINKS

## COMMENTS

Associated gene still not identified - @Parallelism @Introgression into yaks - <https://omia.org/OMIA000483/9913/> natural introgression resulting from backcrossing female yak-cattle hybrids to male yaks

