

## Supplementary Information

### Dairy pastoralism sustained Eastern Eurasian steppe populations for 5000 years

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Supplementary Table 1. References and archaeological site information for archaeological sites presented in Table 1.

Archaeological site	Reference/Information Source
Shatar Chuluu	Novgorodova, E.A. 1989 Drevniaia Mongoliia. Nekotorye problemy khronologii i etnokul'turnoi istorii. Moscow
Khundii Gobi	Excavated by Kovalev and Erdenebaatar, International Central Asian Archaeological Expedition <sup>22</sup>
Yagshiin Huduu	Excavated by Kovalev and Erdenebaatar, International Central Asian Archaeological Expedition <sup>22</sup>
Ulaanzuukh	Excavated by Tumen, Khatanbaatar, and Erdene <sup>3</sup>
Uliastai River, Central Terrace	Excavated by D. Erdenebaatar, 2005, Mongolian Archaeological Expedition of Central Asian Mongolia. National University of Mongolia samples records
Berkh Uul	Excavated by Munkhbayar in 2012, north of Berkh Mountain. National University of Mongolia sample records
Shunkhlai Uul	Excavated by Tumen, Navaan, and Volkov in 1979
Khoit Tsenkher	Excavated by D. Navaan, and Lhagvasuren in 1987. Khovd Mankhan. National University of Mongolia sample records
Chandman Uul	Excavated by D. Navan, National University of Mongolia sample records
Dartsagt	Excavated by M. Erdene, and D. Navaan in 2008, as part of the AA-I expedition in Ulaanbaatar, Khan-Uul District, Songino Khaikhan Mountain
Tamiryn Ulaan Khoshuu	Khatanbaatar, D. (2007). Tamiryn Ulaan Khoshuun dakh' khunnugiin ued kholbogdoh buleg orshuulga. Mongolian Journal of Anthropology, Archaeology, and Ethnology, 3, 156–168
Duulaga Uul	Excavated by D. Navaan in 2004. National University of Mongolia sample records
Uliastain dood denj	Excavate by D. Erdenbaatar, Mongolian Archaeological Expedition of Central Asian Mongolia
Sharga Uul	Excavated in 2006 by Z. Batsaikhan. National University of Mongolia sample records;
Del Khad	Excavated by D. Navaan, M. Erdene, and C. Vanchigdash in 2008. National University of Mongolia sample records
Zaraa Tolgoi	Excavated by D. Navaan in 1980. National University of Mongolia sample records
Banzart Khaikhan	Excavated in 2010 during Umengobi Expedition. National University of Mongolia sample records
Tahiltyn Khotgot	Excavated by the NUM School of Anthropology and Archaeology Summer Practice. National University of Mongolia sample records
Burgaldain Khundii	Excavated by Z. Batsaikhan, and S. Ulzibayar AA course II, 2005. National University of Mongolia sample records;
Ganzagad	Excavated 2010, Umungobi, South Gobi. National University of Mongolia sample records;

Uguumur Tsuvaraa Uul	Excavated by NUM Anthrpology and Archaeology II and III Summer Practice. National University of Mongolia sample records
Khoit Tsenkher, Tarvagatain Am	Excavated by D. Navaan, and Lhagvasuren in 1987. Khovd Mankhan. National University of Mongolia sample records
Kharkhorin	Excavated in 1979, at Kharkhorin, by Ser-Odjab, Bayar, and Tumen. National University of Mongolia sample records
Mori Baridag	Excavated by S. Ulziibayar in 2009 on the Northern Mongolian Expedition.

Supplementary Table 2. Deamidation results for dairy peptides, showing the sample identification, time period of individual, number of overall milk protein peptides, and the percentage milk peptides with deamidated asparagine (N) and glutamine (Q) residues.

Individual	Time Period	Peptide Count	% N Deamidation	%Q Deamidation
AT-628	Early Bronze	18	50.3	24.3
AT-590b	Early Bronze	13	40.8	23.4
AT-26	Early Bronze	2	66.8	No Qs
AT-233	Late Bronze	126	32.9	13.5
AT-835	Mongol	28	48.3	3.3