









Table S1. The results of pollen analyses of the sediments from the skulls of woolly rhinoceros F-506 and F-61.

Taxon	Specimen F-506	Specimen F-61
Arboreal pollen		
<i>Alnaster fruticosa</i>	26	13
<i>Alnus</i> sp.	1	
<i>Betula</i> sect. <i>Albae</i>	27	18
<i>Betula</i> sect. <i>Fruticosae</i>	20	11
<i>Betula</i> sect. <i>Nanae</i>	13	19
<i>Larix</i>	1	11 (+stomata)
<i>Picea</i>	+	2
<i>Pinus</i> s/g <i>Diploxylon</i>	7	4
<i>Pinus</i> s/g <i>Haploxylon</i>	4	5
<i>Rhododendron</i>	+	
<i>Salix</i>	14	17
Non-arboreal pollen		
Apiaceae	+	
<i>Artemisia</i>	46	1
Asteraceae	5	4
Brassicaceae	2	+
Caryophyllaceae	10	4
Chenopodiaceae	3	1
Cichoriaceae	4	4
Cyperaceae	21	46
Ericales	23	2
Lamiaceae	1	1
Onagraceae	+	3
<i>Pedicularis</i>	1	
<i>Plantago</i>		2
Poaceae	67	17
<i>Polemonium</i>	2	
Polygonaceae	7	3
<i>Polygonum bistorta/viviparum</i>	+	
<i>Potentilla</i>	1	
Primulaceae	+	1
Ranunculaceae	5	3
Rosaceae	5	1
Rubiaceae	+	1
<i>Rubus chamaemorus</i>	+	
<i>Rumex</i> t. <i>acetosella</i>		3
Saxifragaceae	16	2
<i>Sparganium</i>	+	
<i>Typha latifolia</i>	1	
<i>Valeriana</i>	1	
<i>Urtica</i>	2	2
Non-identified	18	5
Spores		
<i>Botrychium</i>	1	

Bryales		1
<i>Encalypta</i>		2
<i>Equisetum</i>	+	1
Hepaticae	1	1
<i>Lycopodium</i>	+	
Polypodiaceae	+	1
<i>Riccia</i>	8	3
<i>Selaginella</i>	+	+
<i>Sphagnum</i>	16	3
Terrestrial pollen+spores	380	217
Aquatics		
<i>Ceratophyllum</i> leaf spikes	+	
<i>Myriophyllum</i>	1	
<i>Potamogeton</i>	+	
Algae		
<i>Botryococcus</i>	1	
<i>Pediastrum</i>	1	

Table S2. IR spectrophotometry results (optical density) of control sample and of horn tissue (area 4000.0 – 400.0, threshold 0.001, sensitivity 70).

Peaks analyzed in native bone tissue	Control 1		Sample 3 (specimen F-507)	
	Wavelength	Intensity	Wavelength	Intensity
Orthophosphates: bending vibrations			468.33	0.0862
PO ³⁻ ₄ in the range 500 – 650 cm ⁻¹	562.81	0.463	563.18	0.0982
	603.78	0.405	603.49	0.0918
Orthophosphates: stretching	–	–	–	–
vibrations PO ³⁻ ₄ in the range 900 – 1150 cm ⁻¹	1031.46	0.779	1050.50	0.161
			1102,66	0.163
Carbonates: anion absorption bands	871.93	0.167	878.51	0.009
CO ²⁻ ₃ in the range 880, 1400 and 1460 cm ⁻¹	1417.66	0.362	1405.48	0.143
	1451,44	0.373	1451.11	0.145
Amide absorption bands III 1240 cm ⁻¹	1241.34	0.155	1241.20	0.123
Amide absorption bands II 1540 ± 10 cm ⁻¹	1543.58	0.333	1543.58	0.205
Amide absorption bands I 1660 ± 20 cm ⁻¹	1659.68	0.440	1654.63	0.268
Methyl peaks CH ₂ and CH ₃ groups (2850 ± 30 cm ⁻¹ , 2925 – 2970 cm ⁻¹)	–	–	2873.02	0.138
	2925.06	0.222	2924.57	0.188
			2959.13	0.176
Additional peaks	3340.07	0.357	3408.10	0.255
Lipid absorption band 1740 ± 15 cm ⁻¹	–		–	

Table S3. Results of IR spectrophotometry (optical density) of expert samples (1, 2, 4) of bone tissue of woolly rhino (zone 4000.0 – 400.0, threshold 0.001, sensitivity 70).

Peaks detected in bone tissue	Sample 1 (F-509)		Sample 2 (F-509)		Sample 4 (F-509)	
	Wave length	Intensity	Wave length	Intensity	Wave length	Intensity
Additional peaks	471.87	0.373	469.57	0.069	–	–
Orthophosphates: bending vibrations PO_4^{3-} in zone 500 – 650 cm^{-1}	561.67	0.466	562.20	0.166	562.41	0.256
	602.46	0.372	604.18	0.138	604.24	0.219
Orthophosphates: stretching vibrations PO_4^{3-} in zone 900 – 1150 cm^{-1}	–	–	–	–	–	–
	1033.74	0.773	1032.68	0.302	1031.35	0.431
Carbonates: anion CO_3^{2-} absorption bands in zone 880, 1400 and 1460 cm^{-1}	–	–	871.84	0.0595	871.47	0.0996
	1414.01	0.254	1418.49	0.131	1417.71	0.221
	–	–	–	–	1452.31	0.220
Amide absorption bands III 1240 cm^{-1}	1240.75	0.111	1241.87	0.0724	1241.75	0.0997
Additional peaks	–	–	1455,33	0,131	–	–
Amide absorption bands II 1540 ± 10 cm^{-1}	1547.81	0.263	1544.87	0.124	1545.56	0.212
Amide absorption bands I 1660 ± 20 cm^{-1}	1653.54	0.396	1657.77	0.168	1659.92	0.288
Methyl peaks CH_2 и CH_3 групп (2850 ± 30 cm^{-1} , 2925 – 2970 cm^{-1})	–	–	2852,96	0,0949	–	–
	2924.31	0.349	2923.78	0.136	2959.60	0.180
Additional peaks	3374.09	0.541	3420.77	0.210	3407.10	0.307
Lipid absorption band 1740 ± 15 cm^{-1}	–	–	–	–	–	–