

Table S1 Amplification results and radiocarbon dates

Sample Identifier	Species	Location	Site	Source/ Catalogue Number	Approximate Age	Successfully Amplified	OxA Identifier	AMS 14C Date	Calibrated Date
117	<i>A. amphibius</i>	Belgium, Ardennes	Trou Al'Wesse	J. Stewart (Bournemouth University)	Holocene	Yes			
116	<i>A. amphibius</i>	Belgium, Ardennes	Trou Al'Wesse	J. Stewart (Bournemouth University)	Pleistocene	Yes			
118	<i>A. amphibius</i>	Belgium, Ardennes	Trou Al'Wesse	J. Stewart (Bournemouth University)	Pleistocene	Yes			
119	<i>A. amphibius</i>	Belgium, Ardennes	Trou Al'Wesse	J. Stewart (Bournemouth University)	Pleistocene	No			
120	<i>A. amphibius</i>	Belgium, Ardennes	Trou Al'Wesse	J. Stewart (Bournemouth University)	Pleistocene	No			
164	<i>A. amphibius</i>	Belgium, Ardennes	Trou du Frontal	Royal Belgian Institute of Natural Sciences (Brussels)/ Site 544	Early Holocene	No	OxA-21078	9,455 +/- 55	10,699
160	<i>A. amphibius</i>	Belgium, Namur	Marie-Jeanne Cave	Royal Belgian Institute of Natural Sciences (Brussels)/ Site 1034	Early Holocene	Yes			
161	<i>A. amphibius</i>	Belgium, Namur	Marie-Jeanne Cave	Royal Belgian Institute of Natural Sciences (Brussels)/ Site 542	Pleistocene	575 bp (IA)			
163	<i>A. amphibius</i>	Belgium, Namur	Marie-Jeanne Cave	Royal Belgian Institute of Natural Sciences (Brussels)/ Site 1035	Pleistocene	No			
162	<i>A. amphibius</i>	Belgium, Namur	Marie-Jeanne Cave	Royal Belgian Institute of Natural Sciences (Brussels)/ Site 1035	Pleistocene	<200 bp (NIA)			
121	<i>A. amphibius</i>	England, Somerset	Bridged Pot	J. Stewart (Bournemouth University)	Younger Dryas	Yes			
122	<i>A. amphibius</i>	England, Somerset	Bridged Pot	J. Stewart (Bournemouth University)	Younger Dryas	Yes			
123	<i>A. amphibius</i>	England, Somerset	Bridged Pot	J. Stewart (Bournemouth University)	Younger Dryas	Yes			
124	<i>A. amphibius</i>	England, Somerset	Bridged Pot	J. Stewart (Bournemouth University)	Younger Dryas	Yes			
125	<i>A. amphibius</i>	England, Somerset	Bridged Pot	J. Stewart (Bournemouth University)	Younger Dryas	Yes			
156	<i>A. amphibius</i>	England, Somerset	Bridged Pot	Natural History Museum (London)	Younger Dryas	Yes			
187	<i>A. amphibius</i>	England, Somerset	Gully Cave	D. Schreve (Royal Holloway, University of London)	Pleistocene	Yes	OxA- 20249	12485 +/- 60	14,621
93	<i>A. amphibius</i>	England, Staffordshire	Ossom's Eyrie Cave	Manchester University Museum (Manchester)	Roman	Yes			
101	<i>A. amphibius</i>	England, Staffordshire	Ossom's Eyrie Cave	Manchester University Museum (Manchester)	Roman	Yes			
103	<i>A. amphibius</i>	England, Staffordshire	Thor's Fissure	Buxton Museum (Derbyshire)	Roman	Yes			
92	<i>A. amphibius</i>	England, Derbyshire	Pin Hole Lower Cave	Manchester University Museum (Manchester)	Pleistocene	Yes			
97	<i>A. amphibius</i>	England, Derbyshire	Pin Hole Lower Cave	Manchester University Museum (Manchester)	Pleistocene	Yes			
105	<i>A. amphibius</i>	England, Derbyshire	Pin Hole Lower Cave	Manchester University Museum (Manchester)	Pleistocene	Yes			
104	<i>A. amphibius</i>	England, Derbyshire	Wigber Low	Sheffield City Museum (Sheffield)	Bronze	Yes			
106	<i>A. amphibius</i>	England, Derbyshire	Wigber Low	Sheffield City Museum (Sheffield)	Bronze	Yes			
107	<i>A. amphibius</i>	England, Derbyshire	Wigber Low	Sheffield City Museum (Sheffield)	Bronze	Yes			
157	<i>A. amphibius</i>	England, Kent	Ightham Fissures	Natural History Museum (London)/ Site 276	Pleistocene	No	OxA-21075	23,100 +/- 170	27,955
155	<i>A. amphibius</i>	England, Kent	Ightham Fissures	Natural History Museum (London)	Holocene	<200 bp (NIA)	OxA-21074	8,560 +/- 40	9,532
158	<i>A. amphibius</i>	Wales, Gwent	Merlin's Cave	Natural History Museum (London)/ Site 167	Younger Dryas	Yes	OxA-21076	10,295 +/- 45	12,081
159	<i>A. amphibius</i>	Wales, Gwent	Merlin's Cave	Natural History Museum (London)/ Site 167	Holocene	Yes	OxA-21077	2,797 +/- 27	2,900
113	<i>A. amphibius</i>	France, Pyrennes	Poeymaü	Musee national de Prehistoire (Dordogne)	Younger Dryas	<200 bp (NIA)	OxA-21079	10,065 +/- 45	11,611
154	<i>A. amphibius</i>	France, Tarn-et-Garonne	Courbet	Natural History Museum (London)/ Site 791	Pleistocene	No			
99	<i>A. amphibius</i>	Germany, Harz Mountains	Fuchsloch im Krockstein	Museum für Naturkunde (Berlin)	Younger Dryas	Yes	OxA-21118	11,110 +/-50	12,999
111	<i>A. amphibius</i>	Germany, Harz Mountains	Fuchsloch im Krockstein	Museum für Naturkunde (Berlin)	Younger Dryas	575 bp (IA)	OxA-21111	10,035 +/- 50	11,538
110	<i>A. amphibius</i>	Germany, Harz Mountains	Fuchsloch im Krockstein	Museum für Naturkunde (Berlin)	Younger Dryas	No	OxA-21082	11,005 +/- 50	12,874
95	<i>A. amphibius</i>	Germany, Mecklenburg-Vorpommern	Pisede bei Malchin	Museum für Naturkunde (Berlin)/ 70.III.1.1.42	Holocene	Yes	OxA-2332	3,048 +/- 26	3,279
112	<i>A. amphibius</i>	Germany, Mecklenburg-Vorpommern	Pisede bei Malchin	Museum für Naturkunde (Berlin)/ 70.IV.445.4	Holocene	565 bp (IA)	OxA-2335	2,921 +/- 30	3,070
96	<i>A. amphibius</i>	Germany, Mecklenburg-Vorpommern	Pisede bei Malchin	Museum für Naturkunde (Berlin)/ 70.IV.6.4.8	Holocene	Yes	OxA-21080	2,546 +/- 26	2,687
100	<i>A. amphibius</i>	Hungary, Szergerd	Bélmegyér	Hungarian Institute of Geology (Budapest)/ V.15249	Holocene	Yes			
90	<i>A. amphibius</i>	Hungary, Budapest	Piliisszántó	Hungarian Institute of Geology (Budapest)/ V.13857	Pleistocene	Yes	OxA-21119	13,475 +/- 65	16,653

109	<i>A. amphibius</i>	Hungary, Bükk Mountains	Balla Cave	Hungarian Institute of Geology (Budapest)/ V.10137	Pleistocene	No	OxA-21112	12,515 +/- 60	14,681
94	<i>A. amphibius</i>	Italy, Veneto	Grotta del Broion	University of Ferrara (Ferrara)	Pleistocene	No			
98	<i>A. amphibius</i>	Italy, Veneto	Grotta del Broion	University of Ferrara (Ferrara)	Pleistocene	No			
102	<i>A. amphibius</i>	Italy, Veneto	Grotta del Broion	University of Ferrara (Ferrara)	Pleistocene	No			
91	<i>A. amphibius</i>	Slovakia, Lesser Carpathian Mountains	Dzeravá skala Cave	Hungarian Institute of Geology (Budapest)/ V.19258	Pleistocene	Yes	OxA-21081	22,410 +/- 150	27,137
114	<i>A. amphibius</i>	Ukraine, Kiev		Moscow Institute of Geography (Moscow)/ Site 1019	Historical		565 bp (IA)		
115	<i>A. amphibius</i>	Ukraine, Novomirgorod		Moscow Institute of Geography (Moscow)	Historical	Yes			
108	<i>A. amphibius</i>	Romania, Casian		Institute of Speleology Emil Racovitza (Bucharest)	Historical	Yes			
207	<i>A. amphibius</i>	Belgium		Natural History Museum (London)/ 1919.7.7.2164	Historical	No			
212	<i>A. amphibius</i>	Belgium, Longchamps		Natural History Museum (London)/ 1919.7.7.2165	Historical	Yes			
194	<i>A. amphibius</i>	England, Surrey		Natural History Museum (London)/ 1904.10.13.1	Historical	Yes			
198	<i>A. amphibius</i>	England, Hertfordshire		Natural History Museum (London)/ 1948.1	Historical	Yes			
201	<i>A. amphibius</i>	England, Norfolk		Natural History Museum (London)/ 1985.561	Historical	Yes			
199	<i>A. amphibius</i>	England, Yorkshire		Natural History Museum (London)/ 1911.1.2.57	Historical	Yes			
206	<i>A. amphibius</i>	England, Cambridgeshire		Natural History Museum (London)/ 1969.776	Historical	Yes			
200	<i>A. amphibius</i>	England, Northumberland		Natural History Museum (London)/ 1928.7.2.1	Historical	Yes			
195	<i>A. amphibius</i>	England, Lincolnshire, Reads Island		Natural History Museum (London)/ 1960.2105	Historical	Yes			
204	<i>A. amphibius</i>	England, Shropshire		Natural History Museum (London)/ 1936.11.16.7	Historical	Yes			
205	<i>A. amphibius</i>	England, Shropshire		Natural History Museum (London)/ 1936.11.16.9	Historical	Yes			
197	<i>A. amphibius</i>	England, Norfolk		Natural History Museum (London)/ 1985.549	Historical	Yes			
202	<i>A. amphibius</i>	Scotland, Fife		Natural History Museum (London)/ 1906.11.18.6	Historical	Yes			
196	<i>A. amphibius</i>	Scotland, Morayshire		Natural History Museum (London)/ 1911.2.10.1	Historical	Yes			
211	<i>A. amphibius</i>	Estonia, Kihnu Saar		Natural History Museum (London)/ 1925.6.1.41	Historical	Yes			
226	<i>A. amphibius</i>	Estonia, Kuusnomme		Natural History Museum (London)/ 1925.6.1.43	Historical	Yes			
218	<i>A. amphibius</i>	Finland, Drumso		Natural History Museum (London)/ 1901.6.9.3	Historical	Yes			
215	<i>A. amphibius</i>	Italy, Cerignola		Natural History Museum (London)/ 1916.7.8.1	Historical	Yes			
203	<i>A. amphibius</i>	Italy, Modena		Natural History Museum (London)/ 1890.3.5.3	Historical	Yes			
224	<i>A. amphibius</i>	Macedonia, Kos-Alija		Natural History Museum (London)/ 1937.3.22.47	Historical	Yes			
227	<i>A. amphibius</i>	Macedonia, Stirovica		Natural History Museum (London)/ 1937.3.22.5	Historical	Yes			
220	<i>A. amphibius</i>	Norway, Surnadal		Natural History Museum (London)/ 1930.10.4.30	Historical	Yes			
210	<i>A. amphibius</i>	Russia, Saratov		Natural History Museum (London)/ 1928.4.4.36	Historical	Yes			
225	<i>A. amphibius</i>	Russia, Semiretcheusk		Natural History Museum (London)/ 1914.5.10.146	Historical		575 bp (IA)		
223	<i>A. amphibius</i>	Russia, Volsk		Natural History Museum (London)/ 1928.4.4.33	Historical	Yes			
214	<i>A. amphibius</i>	Sweden, Stockholm		Natural History Museum (London)/ 1849.11.1.27	Historical	Yes			
216	<i>A. amphibius</i>	Sweden, Uppsala		Natural History Museum (London)/ 1900.5.15.1	Historical	Yes			
219	<i>A. amphibius</i>	Switzerland, Locarno		Natural History Museum (London)/ 1902.7.1.5	Historical	Yes			
213	<i>A. scherman</i>	France, Biarritz		Natural History Museum (London)/ 1906.6.4.22	Historical	Yes			
221	<i>A. scherman</i>	France, Cranves Sales		Natural History Museum (London)/ 1905.11.18.19	Historical	Yes			
222	<i>A. scherman</i>	Slovenia, Ormozu		Natural History Museum (London)/ 1937.4.16.20	Historical	Yes			
208	<i>A. sapidus</i>	Portugal, Barbacena		Natural History Museum (London)/ 1936.4.2.12	Historical	Yes			
217	<i>A. sapidus</i>	France, St Gilles		Natural History Museum (London)/ 1908.8.4.261	Historical	Yes			
209	<i>A. sapidus</i>	France, Valescure		Natural History Museum (London)/ 1908.8.4.258	Historical	Yes			