|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Dinosaur** | **Lab/method/fraction** | **14C Years B.P.** | **δ13C/ pMC** | **Report date** | **Discovery Location** |
|  |  |  |  |  |  |
| 1.Acrocanthosaurus | GX-15155-A/Beta/bio | >32,400 | -8.3/<1.78 | 1/10/1989 | Texas |
| 2.Acrocanthosaurus | GX-15155-A-AMS/bio | 25,750 ± 280 | -8.3/4.08 | 6/14/1990 | Texas |
| 3.Acrocanthosaurs | AA-5786-AMS/bio/scrape | 23,760 ± 270 | /5.22 | 10/23/1990 | Texas |
| 4.Acrocanthosaurus | UGAMS-7509a/AMS/bio | 29,690 ± 90 | -4.7/2.48 | 10/27/2010 | Texas |
| 5.Acrocanthosaurs | UGAMS-7509b/AMS/bow | 30,640 ± 90 | -23.8/2.21 | 10/27/2010 | Texas |
| 6.Allosaurus | UGAMS-02947/AMS/bio | 31,360 ± 100 | -6.6/1.98 | 5/1/2008 | Colorado |
| 7.Hadrosaur #1 | KIA-5523/AMS/bow | 31,050 + 230/-220 | -28.4/2.10 | 10/1/1998 | Arkansas |
| 8.Hadrosaur #1 | KIA-5523/AMS/hum | 36,480 + 560/-530 | -25.5/1.07 | 10/1/1998 | Arkansas |
| 9.Triceratops #1 | GX-32372-AMS/col | 30,890 ± 200 | -20.1/2.16 | 8/25/2006 | Montana |
| 10.Triceratops #1 | GX-32647-Beta/bow | 33,830 +2910/-1960 | -16.6/1.38 | 9/12/2006 | Montana |
| 11.Triceratops #1 | UGAMS-04973a-AMS/bio | 24,340 ± 70 | -3.1/4.83 | 10/29/2009 | Montana |
| 12.Triceratops #2 | UGAMS-03228a-AMS/bio | 39,230 ± 140 | -4.7/0.76 | 8/27/2008 | Montana |
| 13.Triceratops #2 | UGAMS-03228b-AMS/col | 30,110 ± 80 | -23.8/2.36 | 8/27/2008 | Montana |
| 14.Triceratops #3 | UGAMS-11752-AMS/bow | 33,570±120 | -17.1/1.53 | 08/14/2012 | Montana |
| 15.Triceratops #3 | UGAMS-11752a-AMS/bio | 41,010±220 | -4.3/0.61 | 08/14/2012 | Montana |
| 16.Hadrosaur #2 | GX-32739-Beta/ext | 22,380 ± 800 | -16.0/6.19 | 1/6/2007 | Montana |
| 17.Hadrosaur #2 | GX-32678/AMS/w | 22,990 ±130 | -18.4/5.74 | 4/4/2007 | Montana |
| 18.Hadrosaur #2 | UGAMS-01935/AMS/bio | 25,670 ± 220 | -6.4/4.09 | 4/10/2007 | Montana |
| 19.Hadrosaur #2 | UGAMS-01936/AMS/w | 25,170 ± 230 | -15.7/4.36 | 4/10/2007 | Montana |
| 20.Hadrosaur #2 | UGMAS-01937/AMS/col | 23,170 ± 170 | -22.7/5.59 | 4/10/2007 | Montana |
| 21.Hadrosaur #3 | UGAMS-9893/AMS/bio | 37,660 ± 160 | -4.9/0.93 | 11/29/2011 | North Dakota |
| 22.Stegosaurus | UGAMS-9891/AMS/bio | 38,250 ± 160 | -9.1/0.86 | 11/29/2011 | Colorado |
| 23.Psittacosaur | UGAMS-8824/AMS/bio | 22,020 ± 50 | -5.4/6.45 | 5/31/2011 | China |
| 24.Mosasaur | Lund, Sweden AMS Lab | 24,600 | /4.8 | 2011 | Belgium |

|  |
| --- |
| AMS is Accelerator Mass Spectrometry; Beta is the conventional method of counting Beta decay particles; Bio is the carbonate fraction of bioapatite. Bow is the bulk organic fraction of whole bone; Col is the collagen fraction; ext and w are charred exterior and whole bone fragments, respectively; Hum is humic acid. |
| GX is Geochron Labs, Cambridge, Massachusetts  AA is the University of Arizona, Tuscon, Arizona  UGAMS is CAIS at the University of Georgia, Athens, Georgia  KIA is Christian Albrechts Universität, Kiel, Germany |

**Acrocanthosaurus (AA-5786, UGAMS-7509a/b, GX-15155)**, a carnivorous dinosaur excavated in 1984 near Glen Rose Texas by C. Baugh and G. Detwiler; in 108 Ma Cretaceous sandstone; identified by Dr. W. Langston of the University of Texas at Austin.

**Allosaurus (UGAMS-02947)**, a carnivorous dinosaur excavated in 1989 by J. Hall and A. Murray. It was found under an Apatosaurus skeleton in the Wildwood section of a ranch west of Grand Junction, Colorado in 150 Ma (Late Jurassic) sandstone of the Morrison Formation.

**Hadrosaur #1 (KIA-5523)**, a duck billed dinosaur. Bone fragments were excavated in 1994 along the Colville River by G. Detwiler and J. Whitmore in the Liscomb bone bed of the Alaskan North Slope; identified by J. Whitmore.

**Hadrosaur #2 (GX-32739, GX-32678, UGAMS-01935/01936/01937)**, a duck billed dinosaur. A femur bone was excavated in 2004 in clay in the NW ¼, NE ¼ of Sec. 32, T16N, R56 E, Dawson County, Montana by O. Kline of the Glendive Dinosaur and Fossil Museum, Glendive, Montana. It was sawed open by O. Kline and H. Miller in 2005 to retrieve samples for C-14 testing.

**Hadrosaur #3 (UGAMS-9893)**, a duck billed dinosaur. Scrapings were taken from a large bone in Colorado in Cretaceous strata, excavated by J. Taylor of Mt. Blanco Fossil Museum, Crosbyton Texas.

**Mosasaur** – from: Lindgren J, Uvdal P, Engdahl A, Lee A H, Alwmark C, Bergquist K E, Nilsson E, Ekström P, Rasmussen M, Douglas D A, Polcyn M J, Jacobs L L (2011). Microspectroscopic Evidence of Cretaceous Bone Proteins. PLoS ONE 6(4): e19445 DOI:10.1371/journal.pone.0019445.

**Psittacosaurus (UGAMS-8824),** a small ceratopsian dinosaur whose name means “parrot lizard”. The tail bone is from the Gobi Desert, donated by Mt. Blanco Museum, Crosbyton Texas.

**Stegosaurus (UGAMS-9891)**. Scrapings were taken from a rib still imbedded in the clay soil of a ranch in Colorado, partially excavated in 2007 and 2009, in 150 Ma (Late Jurassic) strata by C. Baugh and B. Dunkel; identified by C. Baugh in 2014.

**Triceratops #1 (GX-32372, GX-32647, UGAMS-04973a)**, a ceratopsid dinosaur. A femur bone was excavated in 2004 in Cretaceous clay at 47º 6’ 18” by 104º 39’ 22” by O. Kline of the Glendive Dinosaur and Fossil Museum, Glendive, Montana. It was sawed open by O. Kline, H. Miller in 2005 to retrieve samples for C-14 testing.

**Triceratops #2 (UGAMS-03228a/b)**, a very large ceratopsid-type dinosaur excavated in 2007 in Cretaceous clay at 47' 02" 44N and 104' 32" 49W by O. Kline of Glendive Dinosaur and Fossil Museum, Glendive, Montana. Outer bone fragments of a femur were tested for C-14.

**Triceratops #3 (UGAMS-11752)**, a large (40 inch) brow horn was excavated in 2012 in Cretaceous clay at SW 1/4 of NE 1/4 of Sec. 14, T 15 N, R 56 E, Dawson County, Montana, elevation 2240 feet on a private ranch by a team led by O. Kline of Glendive Dinosaur and Fossil Museum, Glendive, Montana. The outer bone fragments were tested for C-14 content. We asked for carbon and nitrogen content - Bulk C was 1.8 and N 0.05%.