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Postcrania and paleobiology of *Patriofelis ulta* (Mammalia, Oxyaenodonta) of the Bridgerian (Early-Middle Eocene) of North America

ANNE E. KORT, \*,1 HEATHER AHRENS,2 P. DAVID POLLY, 3 and MICHAEL MORLO4

1Department of Earth and Atmospheric Sciences, Indiana University Bloomington, Bloomington, Indiana 47408 U.S.A., [aekort@iu.edu](file:///C:\mailto:aekort@iu.edu);

2Department of Biology, High Point University, High Point, North Carolina 27268 U.S.A., [hahrens@highpoint.edu](file:///C:\mailto:hahrens@highpoint.edu);

3Department of Earth and Atmospheric Sciences, Indiana University Bloomington, Bloomington, Indiana 47408 U.S.A., [pdpolly@indiana.edu](file:///C:\mailto:pdpolly@indiana.edu);

4Forschungsinstitut Senckenberg, Abt. Messelforschung und Mammalogie, Senckenberganlage 25, D - 60325 Frankfurt am Main, Germany, [Michael.Morlo@senckenberg.de](file:///C:\mailto:Michael.Morlo@senckenberg.de)

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\*Corresponding author

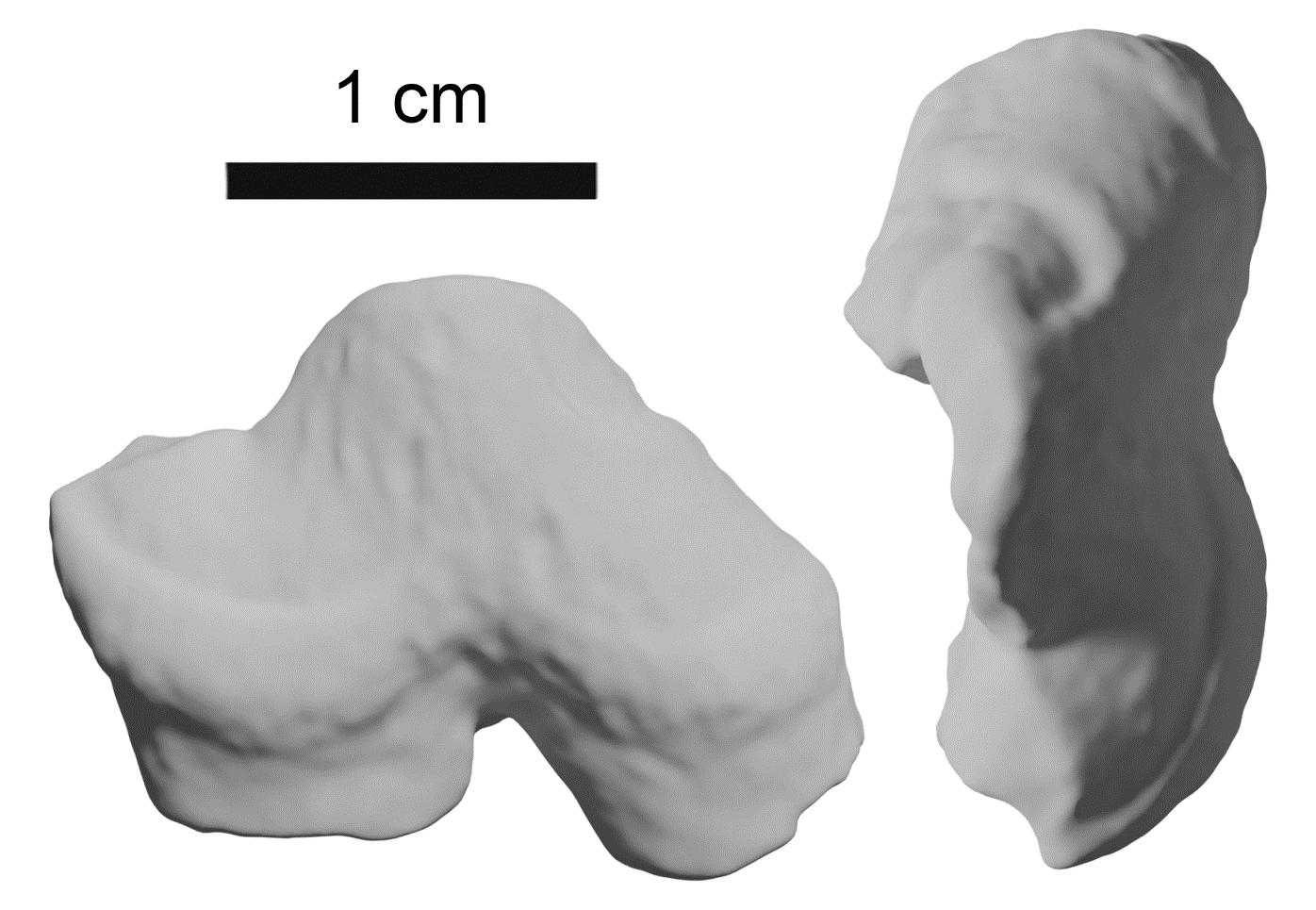


FIGURE S1. Lower right p4 from CM 87673 in **A**, labial and **B**, occlusal views. The posterolingual face of the tooth has broken off. Scale bar equals 1 centimeter.

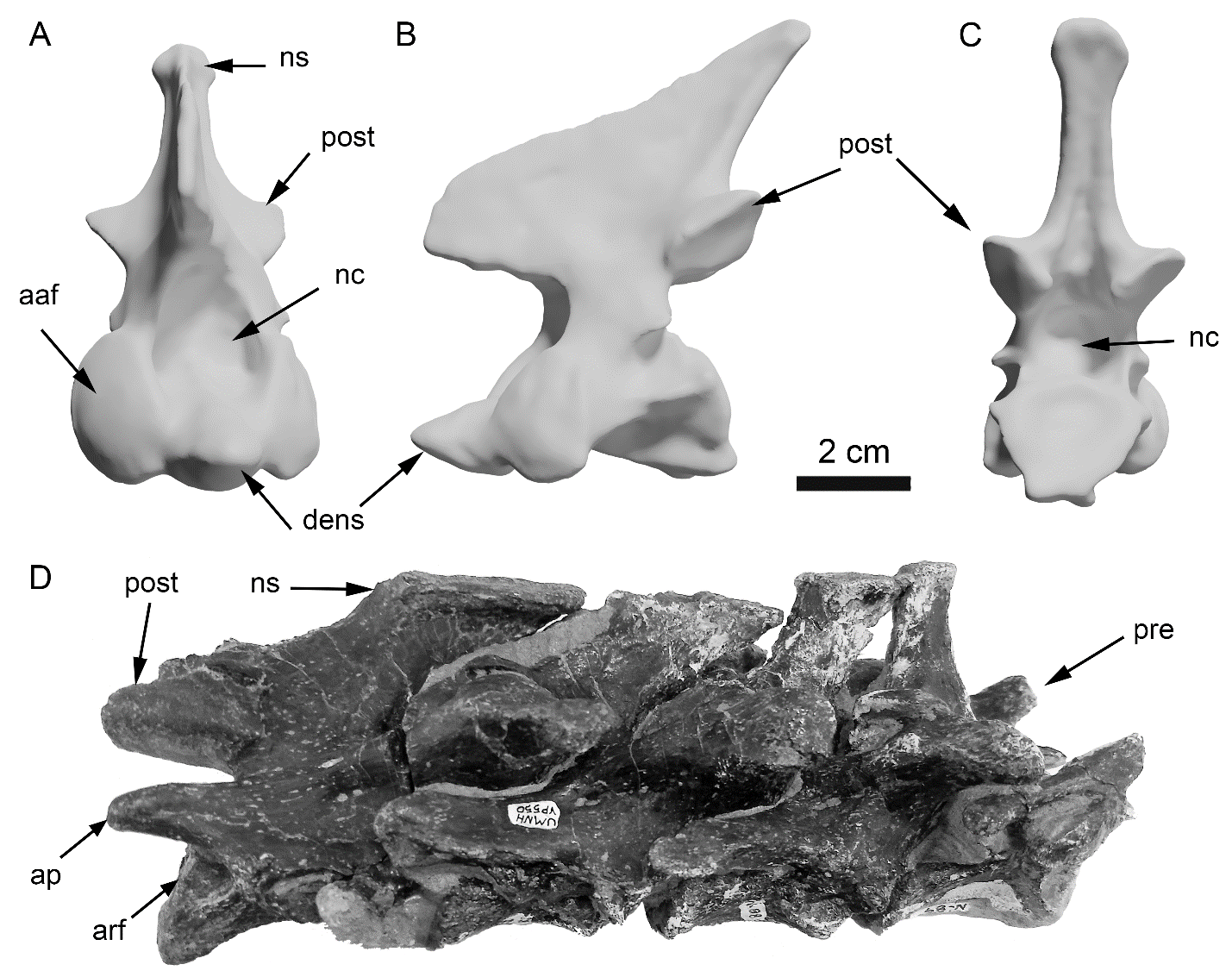


FIGURE S2. Atlas from UMNH VP 550 in **A**, anterior, **B**, lateral and **C**, posterior views; **D**, articulated posterior dorsal vertebrae from UMNH VP 550 in right lateral view. Anterior is to the right. **Abbreviations:** **aaf**, anterior articular facet; **arf**, anterior rib facet; **ap**, anapophysis; **dens**, dens; **nc**, neural canal; **ns**, neural spine; **pre**, prezygapophysis; **post**, postzygapophyses. Scale bar equals 2 cm.

TABLE S1. List of scanned elements from CM 87673 and UMNH VP 550 available on Morphosource.org. Each ARK identifier can be accessed by navigating to <http://n2t.net/ark>... in a web browser e.g. <http://n2t.net/ark:/87602/m4/374804>

|  |  |  |  |
| --- | --- | --- | --- |
| Data Type | Specimen | Element(s) | ARK Identifier |
| CT Image Series | UMNH VP 550 | Metatarsal; Caudal Vertebrae; Carpal; Phalange; Pelvis; Rib; Clavicle; Cranium; Tarsal; Metacarpal; Mandible | ark:/87602/m4/374808 |
| CT Image Series | UMNH VP 550 | Tibia; Femur; Humerus; Fibula; Thoracic Vertebrae; Cervical Vertebrae; Caudal Vertebrae; Lumbar Vertebrae | ark:/87602/m4/374811 |
| Mesh | UMNH VP 550 | Astragalus | ark:/87602/m4/374863 |
| Mesh | UMNH VP 550 | Axis | ark:/87602/m4/375033 |
| Mesh | UMNH VP 550 | Basicranium | ark:/87602/m4/374866 |
| Mesh | UMNH VP 550 | Calcaneum | ark:/87602/m4/375037 |
| Mesh | UMNH VP 550 | Caudal Vertebrae | ark:/87602/m4/374895 |
| Mesh | UMNH VP 550 | Caudal Vertebrae | ark:/87602/m4/374883 |
| Mesh | UMNH VP 550 | Caudal Vertebrae | ark:/87602/m4/374878 |
| Mesh | UMNH VP 550 | Caudal Vertebrae | ark:/87602/m4/374873 |
| Mesh | UMNH VP 550 | Cervical Vertebrae | ark:/87602/m4/375040 |
| Mesh | UMNH VP 550 | Clavicle | ark:/87602/m4/374898 |
| Mesh | UMNH VP 550 | Cranium | ark:/87602/m4/374905 |
| Mesh | UMNH VP 550 | Femur | ark:/87602/m4/375051 |
| Mesh | UMNH VP 550 | Fibula | ark:/87602/m4/375072 |
| Mesh | UMNH VP 550 | Humerus | ark:/87602/m4/375054 |
| Mesh | UMNH VP 550 | Lumbar Vertebrae | ark:/87602/m4/375065 |
| Mesh | UMNH VP 550 | Lumbar Vertebrae | ark:/87602/m4/375059 |
| Mesh | UMNH VP 550 | Mandible | ark:/87602/m4/374927 |
| Mesh | UMNH VP 550 | Pelvis | ark:/87602/m4/374923 |
| Mesh | UMNH VP 550 | Radius | ark:/87602/m4/375048 |
| Mesh | UMNH VP 550 | Rib | ark:/87602/m4/375023 |
| Mesh | UMNH VP 550 | Rib | ark:/87602/m4/375019 |
| Mesh | UMNH VP 550 | Rib | ark:/87602/m4/375015 |
| Mesh | UMNH VP 550 | Rib | ark:/87602/m4/375012 |
| Mesh | UMNH VP 550 | Rib | ark:/87602/m4/375009 |
| Mesh | UMNH VP 550 | Rib | ark:/87602/m4/375006 |
| Mesh | UMNH VP 550 | Rib | ark:/87602/m4/375000 |
| Mesh | UMNH VP 550 | Rib | ark:/87602/m4/374990 |
| Mesh | UMNH VP 550 | Rib | ark:/87602/m4/374981 |
| Mesh | UMNH VP 550 | Rib | ark:/87602/m4/374973 |
| Mesh | UMNH VP 550 | Rib | ark:/87602/m4/374961 |
| Mesh | UMNH VP 550 | Rib | ark:/87602/m4/374955 |
| Mesh | UMNH VP 550 | Rib | ark:/87602/m4/374948 |
| Mesh | UMNH VP 550 | Rib | ark:/87602/m4/374939 |
| Mesh | UMNH VP 550 | Thoracic Vertebrae | ark:/87602/m4/375064 |
| Mesh | UMNH VP 550 | Thoracic Vertebrae | ark:/87602/m4/375044 |
| Mesh | UMNH VP 550 | Thoracic Vertebrae | ark:/87602/m4/375027 |
| Mesh | UMNH VP 550 | Tibia | ark:/87602/m4/375069 |
| Mesh | UMNH VP 550 | Tibia | ark:/87602/m4/375058 |
| Mesh | CM 87733 | Astragalus | ark:/87602/m4/374171 |
| Mesh | CM 87732 | Astragalus | ark:/87602/m4/374181 |
| Mesh | CM 87731 | Calcaneum | ark:/87602/m4/374185 |
| Mesh | CM 87730 | Calcaneum | ark:/87602/m4/374189 |
| Mesh | CM 87729 | Capitulum | ark:/87602/m4/374193 |
| Mesh | CM 87728 | Caudal Vertebrae | ark:/87602/m4/374203 |
| Mesh | CM 87727 | Caudal Vertebrae | ark:/87602/m4/374215 |
| Mesh | CM 87726 | Caudal Vertebrae | ark:/87602/m4/374221 |
| Mesh | CM 87725 | Caudal Vertebrae | ark:/87602/m4/374225 |
| Mesh | CM 87724 | Caudal Vertebrae | ark:/87602/m4/374229 |
| Mesh | CM 87723 | Caudal Vertebrae | ark:/87602/m4/374234 |
| Mesh | CM 87722 | Caudal Vertebrae | ark:/87602/m4/374238 |
| Mesh | CM 87721 | Caudal Vertebrae | ark:/87602/m4/374242 |
| Mesh | CM 87720 | Caudal Vertebrae | ark:/87602/m4/374246 |
| Mesh | CM 87719 | Caudal Vertebrae | ark:/87602/m4/374250 |
| Mesh | CM 87718 | Distal Femur | ark:/87602/m4/374254 |
| Mesh | CM 87717 | Distal Femur | ark:/87602/m4/374258 |
| Mesh | CM 87716 | Femoral head | ark:/87602/m4/374262 |
| Mesh | CM 87715 | Fibula | ark:/87602/m4/374266 |
| Mesh | CM 87714 | Hamate | ark:/87602/m4/374270 |
| Mesh | CM 87713 | Metacarpal II | ark:/87602/m4/374274 |
| Mesh | CM 87712 | Metatarsal 2 | ark:/87602/m4/374278 |
| Mesh | CM 87711 | Metatarsal 3 | ark:/87602/m4/374282 |
| Mesh | CM 87710 | Metatarsal 4 | ark:/87602/m4/374286 |
| Mesh | CM 87709 | Metatarsal 5 | ark:/87602/m4/374292 |
| Mesh | CM 87708 | Tibia | ark:/87602/m4/374300 |
| Mesh | CM 87707 | Ulna | ark:/87602/m4/374304 |
| Mesh | CM 87706 | Ulna | ark:/87602/m4/374312 |
| Mesh | CM 87705 | Ulna | ark:/87602/m4/374317 |
| Mesh | CM 87704 | Ulna | ark:/87602/m4/374324 |
| Mesh | CM 87703 | Lunate | ark:/87602/m4/374330 |
| Mesh | CM 87702 | Mandible Coronoid | ark:/87602/m4/374335 |
| Mesh | CM 87701 | Mandible Condyle | ark:/87602/m4/374340 |
| Mesh | CM 87700 | Mandible Condyle | ark:/87602/m4/374348 |
| Mesh | CM 87699 | Medial Cuneiform | ark:/87602/m4/374352 |
| Mesh | CM 87698 | Lower p4 | ark:/87602/m4/374357 |
| Mesh | CM 87697 | Patella | ark:/87602/m4/374361 |
| Mesh | CM 87696 | Patella | ark:/87602/m4/374366 |
| Mesh | CM 87695 | Radius | ark:/87602/m4/374371 |
| Mesh | CM 87694 | Radius | ark:/87602/m4/374375 |
| Mesh | CM 87693 | Radius | ark:/87602/m4/374380 |
| Mesh | CM 87692 | Radius | ark:/87602/m4/374387 |
| Mesh | CM 87691 | Cuboid | ark:/87602/m4/374678 |
| Mesh | CM 87690 | Lateral Cuneiform | ark:/87602/m4/374683 |
| Mesh | CM 87689 | Metatarsal 1 | ark:/87602/m4/374688 |
| Mesh | CM 87688 | Metatarsal 1 | ark:/87602/m4/374695 |
| Mesh | CM 87687 | Metatarsal 2 | ark:/87602/m4/374705 |
| Mesh | CM 87686 | Metatarsal 2 | ark:/87602/m4/374714 |
| Mesh | CM 87685 | Metatarsal 3 | ark:/87602/m4/374719 |
| Mesh | CM 87684 | Metatarsal 4 | ark:/87602/m4/374734 |
| Mesh | CM 87683 | Metatarsal 4 | ark:/87602/m4/374739 |
| Mesh | CM 87682 | Metatarsal 5 | ark:/87602/m4/374750 |
| Mesh | CM 87681 | Metatarsal 5 | ark:/87602/m4/374755 |
| Mesh | CM 87680 | Tibia | ark:/87602/m4/374766 |
| Mesh | CM 87679 | Tibia | ark:/87602/m4/374775 |
| Mesh | CM 87678 | Ulna | ark:/87602/m4/374781 |
| Mesh | CM 87677 | Ulna | ark:/87602/m4/374786 |
| Mesh | CM 87676 | Ulna | ark:/87602/m4/374790 |
| Mesh | CM 87675 | Sagittal Crest | ark:/87602/m4/374795 |
| Mesh | CM 87674 | Scaphoid | ark:/87602/m4/374800 |
| Mesh | CM 87673 | Scapula | ark:/87602/m4/374804 |

TABLE S2. List of fossil specimens referenced for comparison to *Patriofelis* specimens described.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Species | Collection | Catalog number | Order | Subfamily |
| *Palaeonictis* sp. | YPM VP | 013001 | Oxyaenodonta | Ambloctoninae |
| *Oxyaena gulo* | AMNH FM | 15724 | Oxyaenodonta | Oxyaeninae |
| *Oxyaena lupina* | AMNH FM | 107 | Oxyaenodonta | Oxyaeninae |
| *Patriofelis cf. ulta* | AMNH FM | 17505 | Oxyaenodonta | Oxyaeninae |
| *Patriofelis ferox* | AMNH FM | 1507 | Oxyaenodonta | Oxyaeninae |
| *Patriofelis ferox* | YPM VP | 012864 | Oxyaenodonta | Oxyaeninae |
| *Patriofelis ferox* | YPM VP | 013093 | Oxyaenodonta | Oxyaeninae |
| *Patriofelis* sp. | YPM VP | 011089 | Oxyaenodonta | Oxyaeninae |
| *Hyaenodon horridus* | YPM VPPU | 010916 | Hyaenodonta | Hyaenodontinae |
| *Hyaenodon horridus* | YPM VPPU | 010995 | Hyaenodonta | Hyaenodontinae |
| *Limnocyon potens* | AMNH FM | 13138 | Hyaenodonta | Limnocyoninae |
| *Limnocyon verus* | AMNH FM | 12155 | Hyaenodonta | Limnocyoninae |
| *Limnocyon verus* | YPM VP | 013034 | Hyaenodonta | Limnocyoninae |
| *Limnocyon verus* | YPM VP | 013065 | Hyaenodonta | Limnocyoninae |
| *Tritemnodon* sp. | AMNH FM | 12636 | Hyaenodonta | Sinopinae |

TABLE S3. Modern specimens used in geometric morphometric analysis from the WRAZL osteology collection.

|  |  |  |  |
| --- | --- | --- | --- |
| Common Name | Species | Catalog Number | Order |
| Bison | *Bison bison* | 9810423 | Artiodactyla |
| Collared Peccary | *Pecari tajacu* | 9210299 | Artiodactyla |
| Domestic Goat | *Capra hircus* | 9710078 | Artiodactyla |
| White-tailed Deer | *Odocoileus virginianus* | 9910233 | Artiodactyla |
| American Badger | *Taxidea taxus* | 9010138 | Carnivora |
| Bobcat | *Felis rufus* | 0210001 | Carnivora |
| Common Raccoon | *Procyon lotor* | 9610344 | Carnivora |
| Cougar | *Puma concolor* | 0110164 | Carnivora |
| Grey Wolf | *Canis lupus* | 9910092 | Carnivora |
| Harbor Seal | *Phoca vitulina* | 9510001 | Carnivora |
| North American River Otter | *Lontra canadensis* | 9010009 | Carnivora |
| Polar Bear | *Ursus maritimus* | 9710081 | Carnivora |
| Wolverine | *Gulo gulo* | 9310464 | Carnivora |
| Nine-Banded Armadillo | *Dasypus novemcinctus* | 8610148 | Cingulata |
| Tasmanian Devil | *Sarcophilus harris* | 9310970 | Dasyuromorphia |
| Virginia Opossum | *Didelphis virginianus* | 9710249 | Didelphimorphia |
| Rock Hyrax | *Procavia capensis* | 0010011 | Hyracoidea |
| European Rabbit | *Oryctolagus cuniculus* | 8410118 | Lagomorpha |
| Domestic Horse | *Equus caballus* | 8810102 | Perissodactyla |
| American Beaver | *Castor canadensis* | H25 | Rodentia |
| Guinea Pig | *Cavia porcellus* | 9610245 | Rodentia |
| North American Porcupine | *Erethizon dorsatum* | T25 | Rodentia |