

3D models related to the publication: Novel information on the braincase of *Megaraptor namunhuaiquii* (Dinosauria: Theropoda) using X-ray tomography: pneumaticity, paleoneurology and their paleobiological implications

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Abstract

The present 3D Dataset contains the 3D models analyzed in the following publication: Paulina-Carabajal, A., and Porfiri, J.D. 2026. Novel information on the braincase of *Megaraptor namunhuaiquii* (Dinosauria: Theropoda) using X-ray tomography: pneumaticity, paleoneurology and their paleobiological implications. *Ameghiniana* 63(1), 16-32.

Keywords: Dinosaur hearing, hunting habits, Megaraptoridae, Neuroanatomy, Sense Biology

Submitted: 20/11/2025, published online: 29/06/2026. <https://doi.org/10.18563/journal.m3.291>

Inv nr.	Taxon	Description
MUC-PV 595	<i>Megaraptor namunhuaiquii</i>	3D models of the braincase, lateral wall of the braincase, brain, right and left inner ears

Table 1. Related 3D Model. Collection: Museo de Ciencias Naturales de la Universidad Nacional del Comahue, Neuquén, Argentina.

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ACKNOWLEDGEMENTS

Mc. J. Remy (Clínica Kranex, Neuquén, Argentina) for allowing the CT scanning and Secretaría de Cultura de la Provincia de Neuquén for supporting the study. Grant sponsor: ANPCyT Grant number: PICT 2020-1428

INTRODUCTION

The braincase anatomy of a juvenile specimen of *Megaraptor namunhuaiquii* (Porfiri et al., 2014) was explored using X-ray CT scans, which allow the observation of external and internal features, including endocranial cavity, endosseous labyrinth and pneumaticity. The braincase and endocranial features of *Megaraptor* exhibit intermediate and derived features among Theropoda that support the inclusion of this taxon among basal coelurosaurs (e.g., Novas 1998; Novas et al., 2013). The analysis of the reconstructed neuroanatomy (Fig. 1 and Table 1) suggests this theropod was an agile bipedal predator with hearing and balance capabilities matching the range of coeval hunting coelurosaurs.

METHODS

The small sized specimen was CT scanned using an odontological tomographer (Paulina-Carabajal et al. 2018). 3D surfaces were extracted semi-automatically within Materialise MIMICS 20.0 using the segmentation threshold selection tool. The 3D surface models are provided in .ply format, and can therefore be

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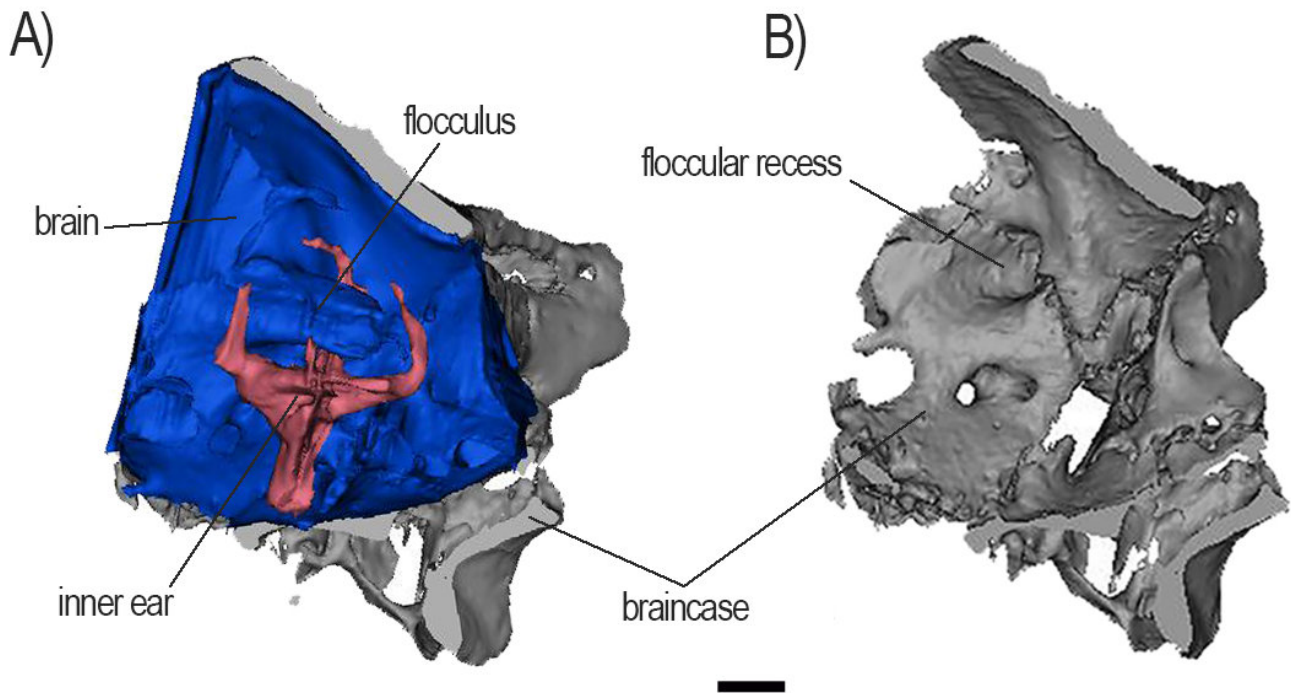


Figure 1. Braincase and cranial endocasts of the megaraptorid theropod *Megaraptor namunuiquii* (MUC-PV 595). A) Brain and inner ear in left lateral view; B) right wall of braincase in medial view. Braincase (gray), brain (blue), inner ear (pink). Scale bar= 10 mm.

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