

New dinosaur species may be closest known relative of *Tyrannosaurus rex*

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Reconstruction of *Tyrannosaurus mcraeensis*. Credit: Sergei Krasinski.

A new species of tyrannosaur from southern North America that may be the closest known relative of *Tyrannosaurus rex* is described in a study

[published](#) in *Scientific Reports*.

Sebastian Dalman and colleagues identified the new species—which they have named *Tyrannosaurus mcraeensis*—by examining a fossilized partial skull, which was previously discovered in the Hall Lake Formation, New Mexico, U.S.

Although these remains were initially assigned to *T. rex* and are comparable in size to those of *T. rex* (which was up to 12 meters long), the authors propose that they belong to a [new species](#) due to the presence of multiple subtle differences in the shape of, and joins between, the skull bones of the specimen and *T. rex*.

Based on the locations of the remains in relation to rocks and other dinosaur remains that have been previously dated to between 66 and 75 million years ago, the authors suggest that *T. mcraeensis* may have lived between 71 and 73 million years ago—between five and seven million years before *T. rex*.



Jaw of *Tyrannosaurus mcraeensis* at the New Mexico Museum of Natural History and Science. Note the large scar towards the back of the jaw, which the authors speculate may have resulted from a fight with another *Tyrannosaurus*. Credit: Nick Longrich.



Kettle Top Butte in southeastern New Mexico. This fossilized jaw from *Tyrannosaurus mcraeensis* was uncovered near the base of the butte. Credit: Dr. Spencer Lucas, NM Museum of Natural History & Science. Image courtesy of NM Department of Cultural Affairs.

Analysis of the relationships between *T. mcraeensis* and other theropod dinosaur species indicates that *T. mcraeensis* may have been a sister species to *T. rex*, making it the closest known relative of *T. rex*.

Based on its discovery in New Mexico and its relationship to *T. rex*, the authors suggest that the *Tyrannosaurus* lineage, Tyrannosaurini, may have originated in southern Laramidia—an island continent that existed

between 100 and 66 million years ago and stretched from modern-day Alaska to Mexico.



Teeth of *Tyrannosaurus mcraeensis*. Credit: Nick Longrich.

Additionally, they propose that Tyrannosaurini may have evolved a giant body size approximately 72 million years ago, alongside other giant dinosaurs from southern Laramidia such as ceratopsians, hadrosaurs, and titanosaurs.

The authors speculate that the evolution of giant tyrannosaurins may have been driven by the giant body sizes of herbivores that they preyed on in southern Laramidia.

More information: A giant tyrannosaur from the Campanian–Maastrichtian of southern North America and the evolution of tyrannosaurid gigantism, *Scientific Reports* (2024). [DOI: 10.1038/s41598-023-47011-0](https://doi.org/10.1038/s41598-023-47011-0).
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