

Could 'advanced' dinosaurs rule other planets?

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Credit: AI-generated image ([disclaimer](#))

New scientific research raises the possibility that advanced versions of *T. rex* and other dinosaurs — monstrous creatures with the intelligence and cunning of humans — may be the life forms that evolved on other planets in the universe. "We would be better off not meeting them," concludes the study, which appears in the *Journal of the American*

Chemical Society.

In the report, noted scientist Ronald Breslow, Ph.D., discusses the century-old mystery of why the building blocks of terrestrial [amino acids](#) (which make up proteins), sugars, and the genetic materials DNA and RNA exist mainly in one orientation or shape. There are two possible orientations, left and right, which mirror each other in the same way as hands. This is known as "chirality." In order for life to arise, proteins, for instance, must contain only one chiral form of amino acids, left or right. With the exception of a few bacteria, amino acids in all life on Earth have the left-handed orientation. Most sugars have a right-handed orientation. How did that so-called homochirality, the predominance of one chiral form, happen?

Breslow describes evidence supporting the idea that the unusual amino acids carried to a lifeless Earth by meteorites about 4 billion years ago set the pattern for normal amino acids with the L-geometry, the kind in terrestrial proteins, and how those could lead to D-sugars of the kind in DNA.

"Of course," Breslow says, "showing that it could have happened this way is not the same as showing that it did." He adds: "An implication from this work is that elsewhere in the universe there could be [life forms](#) based on D-amino acids and L-sugars. Such life forms could well be advanced versions of dinosaurs, if mammals did not have the good fortune to have the [dinosaurs](#) wiped out by an asteroidal collision, as on Earth. We would be better off not meeting them."

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More information: "Evidence for the Likely Origin of Homochirality in Amino Acids, Sugars, and Nucleosides on Prebiotic Earth" *J. Am.*

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Abstract

Over the past century the origin of terrestrial prebiotic homochirality has been the subject of many speculations. For life to start on earth and elsewhere, it is critical that the building blocks of amino acids, sugars, and nucleosides be created in predominant homochiral form. Recent findings of a modest excess L chirality of α -methylamino acids in some meteorites that landed on earth have furnished an important piece of evidence. We have shown how these meteoritic components can furnish normal L amino acids, and therefrom D sugars and nucleosides, in high chiral excess under sensible prebiotic conditions. Some important remaining goals are also described.

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