

'Genetic scrambling' over millions of years makes it difficult to understand Earth's earliest life

Biologists have long hoped to understand the nature of the earliest living organisms on Earth. If they could, they might then be able to say something about how, when, and where life arose on Earth, and perhaps by extension, whether life is common in the Universe.

Previous studies have suggested this information can be obtained by comparing the genes present in modern organisms.

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Professor [Shawn] McGlynn explains, "A fundamental question in biology is what were the first life forms on Earth. There are two basic ways to try and address this. First, we can use the comparison of gene sequences to try and understand which ones seem most ancient. Second, we can look for evidence biology may have left in the geological record." McGlynn says this work shows that although it is clear there is a fuzzy yet remarkable general outline of a family tree of life in the available DNA sequence data, there has been so much evolutionary change that it is still as of yet impossible to say how the earliest organisms made their living or in what types of environments they lived. This is because the signal is simply too noisy due to this early genetic scrambling.

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