

# Hypothesis formed on evolution of archaea

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U.S. scientists say they've found evidence microorganisms called archaea may have evolved from a moderate temperature environment.

Since their discovery in the late 1970s, archaea have fascinated scientists with their ability to thrive where no other life can -- in conditions that are extremely hot, acidic or salty.

In the 1990s, however, scientists discovered archaea occur widely in more mundane, low-temperature environments, such as oceans and lakes. And now University of Georgia and Harvard University researchers say archaea might have evolved from a moderate-temperature environment rather than from their high-temperature counterparts -- as most scientists had believed.

"Archaea represent one of the three domains of life on Earth," said Chuanlun Zhang, lead author of the study and an associate professor of marine sciences at UGA. "Understanding their evolution may shed light on how all life forms evolve and interact with the environment through geological history."

Zhang and colleagues examined a common group of archaea known as Crenarchaeota. He says Crenarchaeota's low-temperature success may involve a unique molecule known as crenarchaeol that allows the organism's cell membrane to remain flexible in cooler environments.

The study appears in the journal Applied and Environmental Microbiology.

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