Did life begin in water—or some other liquid?

[W]hile water is an indispensable solvent for all known life forms that exist today, water also inhibits the formation of string-like chains of nucleic acid polymers such as RNA that were likely precursors of life. This raises the question: how could the nucleic acids have formed in the first place? One solution to this "water paradox" is that life may have originated in something other than water, and only later adapted to the presence of water.
…

[Zachary] Adam and others have been investigating a leading candidate for a water alternative called formamide, a clear liquid that consists of hydrogen, oxygen, carbon, and nitrogen. Not only does formamide favor polymer bond formation more than water does, it also reacts with other molecules to form nucleobases, amino acids, and some of the other basic compounds needed to make nucleic acids.
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Now in a new paper published in Scientific Reports, a team of researchers, led by Adam and coauthor Masashi Aono at Keio University and Tokyo Institute of Technology, have demonstrated the possibility that formamide may have been produced in abundance by radiation in some pockets of the early Earth.

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[R]adioactive mineral deposits can produce enough formamide to accumulate to high concentrations, which could have formed large formamide reservoirs in which nucleic acids could have formed as precursors to the first living organisms.
[Editor's note: Read the full study]

Read full, original post: Did water-based life originate without water?