

# X-treme Microbes: Eating Radioactivity



The newly discovered microbes are found nearly two miles deep in ancient water that seeps through a fracture in 2.7-million-year-old rock containing uranium and an iron-sulfur compound called pyrite, or fool's gold, among other constituents. They live in that harsh environment by taking advantage of a convenient local energy source, radioactivity.

As a uranium atom in the surrounding rock decays, it emits neutrons (flying green balls at upper left) which smash into water molecules ( $\text{H}_2\text{O}$ —depicted as one red oxygen atom and two white hydrogen atoms), splitting off hydrogen atoms in the form of positively charged protons (marked  $\text{H}^+$ ).

Credit: Nicolle Rager Fuller, National Science Foundation

For more information on X-treme Microbes see:  
[www.nsf.gov/news/special\\_reports/microbes/index.jsp](http://www.nsf.gov/news/special_reports/microbes/index.jsp)

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