

Possibilities for Life on Mars - A Surprising New Microbe.

Abstract

A recently discovered microbe may provide a biological explanation for the Viking life results. Certain strains of the microbe evolve oxygen in the dark on ingestion of chlorite (ClO₂) while others evolve carbon dioxide (CO₂) on ingesting benzene. Various strains can metabolize chlorate and perchlorate, which becomes important in regards to Mars because of the discovered presence of these minerals on Mars.

The observations reported by Navarro-Gonzalez et. al. using samples from the Atacama desert that sought to replicate the Viking results abiotically may actually have been detecting this microbe. Genetic tests for the presence of this microbe are suggested for the samples collected by Navarro-Gonzalez et. al.

Keywords: Mars life, Viking, oxidants, Gil Levin, GCMS, Dechloromonas, perchlorate.

Robert Clark

Dept. of Mathematics, Widener University

One University Place, Chester, PA 19013 USA

Main Math Dept. Phone: 610-499-1243

Email: rgc0300@mail.widener.edu

REFERENCES.

Coates, J. D. et al. (1999) Ubiquity and Diversity of Dissimilatory (Per)chlorate-Reducing Bacteria.

Applied and Environmental Microbiology **65**, 5234-5241.

<http://aem.asm.org/cgi/content/full/65/12/5234>

Navarro-Gonzalez, R. et al. (2003) Mars-Like Soils in the Atacama Desert, Chile, and the Dry Limit of Microbial Life.

Science **302(5647)** 1018-1021, November 7.

<http://www.sciencemag.org/cgi/content/full/302/5647/1018>