

Earth microbes may contaminate the search for life on Mars

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Bacteria common to spacecraft may be able to survive the harsh environs of Mars long enough to inadvertently contaminate Mars with terrestrial life according to research published in the April 2010 issue of the journal *Applied and Environmental Microbiology*.

The search for life on Mars remains a stated goal of NASA's Mars Exploration Program and Astrobiology Institutes. To preserve the pristine environments, the bioloads on spacecraft headed to Mars are subject to sterilization designed to prevent the contamination of the Martian surface.

Despite [sterilization](#) efforts made to reduce the bioload on spacecraft,

recent studies have shown that diverse [microbial communities](#) remain at the time of launch. The sterile nature of spacecraft assembly facilities ensures that only the most resilient species survive, including acinetobacter, bacillus, escherichia, staphylococcus and [streptococcus](#).

Researchers from the University of Central Florida replicated Mars-like conditions by inducing desiccation, hypobaria, low temperatures, and UV irradiation. During the week-long study they found that [Escherichia coli](#), a potential spacecraft contaminant, may likely survive but not grow on the surface of Mars if it were shielded from UV irradiation by thin layers of dust or UV-protected niches in spacecraft.

"If long-term microbial survival is possible on Mars, then past and future explorations of Mars may provide the microbial inoculum for seeding Mars with terrestrial life," say the researchers. "Thus, a diversity of microbial species should be studied to characterize their potential for long term survival on Mars."

Provided by American Society for Microbiology

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