

Phosphate limitation affects global gene expression in thiobacillus ferrooxidans

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During some biogeochemical processes mediated by bacteria, essential nutrients such as phosphate can become limiting for the microorganisms, affecting their biological activity. We have analyzed changes in total protein synthesis of *Thiobacillus ferrooxidans* when it was subjected to phosphate starvation. By two-dimensional polyacrylamide gel electrophoresis, at least 25 proteins changed in extent of synthesis under the limiting conditions. Several of these proteins could be traced to the surface of the bacteria by total cell labeling in the presence of ^{125}I and analysis of outer membrane. The observed changes reflect the appearance of an environmental phosphate scavenging system in *T. ferrooxidans*. © 1992 Taylor & Francis Group, LLC.