

Insights: Publications

Bioinformatic Insights into Mechanisms of a Halophilic Electroactive Bacterium

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Microbial electrochemistry is a rapidly evolving field for applications in biosensing, electrosynthesis, and renewable energy generation. Microbial electrochemical systems benefit from long-term operation owing to the self-replicative nature of bacteria allowing for infinite renewable catalysts as long as bacterial growth is supported. For maximal use of these systems, extremophilic bacteria that are capable of extracellular electron transfer are often explored to maximize growth and stability in a variety of conditions. Herein, an extremophilic halophilic bacterium, *Salinivibrio* sp. EAGSL is shown to have anodic respiring activity as well as capability to grow in a large variety of pH, saline concentrations, and heavy metal concentrations. Bioinformatic analysis was employed to investigate the cellular mechanisms at place for this bacterium's unique characteristics. The insight gained from the bioinformatic analysis allows for development of microbial electrochemical systems in environmentally relevant media paving the way for the future application of these technologies.