Insights: Publications

Understanding the properties of phenazine mediators that promote extracellular electron transfer in Escherichia coli

Journal of the Electrochemical Society 168 (2), 025503

FEBRUARY 23, 2021 Written by

The ability to establish successful and efficient extracellular electron transfer (EET) between bacteria and electrode surfaces is critical for the development of mediated microbial electrochemical technologies. Here, we describe a phenazine-based mediator system to facilitate electron transfer from the model bacterium Escherichia coli during glucose metabolism. Phenazine redox mediators were experimentally evaluated, demonstrating distinct mediated currents, dependent on mediator structure. Our results show that the choice of a mediator with the appropriate redox potential is not the single aspect to consider when rationally designing future mediator-based EET systems.