

Revised kinetic parameters of the Aps reductase enzyme: effect on microbial sulfur isotope fractionation.

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The Aps reductase enzyme conducts the first redox reaction of microbial sulfate reduction, and it is the most exergonic under a wide array of conditions. We report a new kinetic characterization of the enzyme under non-inhibited conditions using an assay which specifically removes the inhibitor AMP from the assay solution. The K_m , and V_{max} properties of the enzyme are dramatically altered, which in turn affects predicted whole cell sulfur isotope fractionation. Whether or not the altered kinetics affect the apparent KIE of the enzyme is under investigation.

Keywords: sulfur isotopes, enzyme kinetics, microbial growth

