

Research Summary for Joshua Floth

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Exploring a fundamental catalytic step in the mechanisms of monofunctional and bifunctional proline metabolic enzymes

Proline metabolism has critical roles in human health and disease such as cancer, mental health, and aging. Our lab focuses on the mechanisms of the enzymes involved in proline metabolism. The conversion of proline into glutamate is a fundamental metabolic process in all organisms that involves a four-electron, two-step oxidation. Proline dehydrogenase (PRODH) is the flavoprotein responsible for the first step of proline metabolism. The overall goal of my research is to gain a better understanding of key mechanistic differences between monofunctional and bifunctional proline dehydrogenases."