

## Samson Osholowu

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Mentor: Leonard J. Banaszak, Biochemistry,  
Molecular Biology and Biophysics

## *Studies of yeast mitochondrial precursor- Isocitrate Dehydrogenase*

Isocitrate Dehydrogenase (IDH) is a Krebs Cycle enzyme that converts D,L-Isocitrate to  $\alpha$ -ketoglutarate with NADP<sup>+</sup> as cofactor. The Krebs cycle takes place in the mitochondrial matrix of eukaryotes. Since IDH is translated in the cytoplasm, its mode of transport into the mitochondria is not well understood. What is known is that IDH is expressed as an active enzyme complex with an intact N-terminal precursor sequence (pIDH) and that this sequence is cleaved during its entry into the mitochondrial matrix. Hypothetically, it is thought that the precursor sequence also acts as a signal *in vivo*. Perhaps its presence in pIDH protein complex plays a role in determining whether pIDH will be sorted into the mitochondria from the cytoplasm. This project is mainly focused on the purification, characterization and crystallization of pIDH *in vitro* so as to deduce its mode of sorting into the eukaryotic mitochondria. The eukaryotic IDH protein examined is of a yeast species-*Saccharomyces Cerevisiae* (bakers yeast).



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