

“Histidine 454 Plays an Important Role in the Polymerization of Human Glutamate Dehydrogenase”

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Human glutamate dehydrogenase (HGDH) is an important protein that damitates *L*-glutamate to 2-oxoglutarate. Allosteric regulation of HGDH can lead to hyperinsulinism/hyperammonemia syndrome in small children. To better understand the protein many studies are being done to determine how it maintains its quaternary structure. Through cassette mutagenesis, mutations at K333, K337, K344, K346, S445, G446 and H454 were studied. No effects on protein stability were shown in the mutant forms. K_M data showed an increase in substrate affinity for the H454 mutant but the efficiency decreased. High performance liquid chromatography provided evidence that H454 plays a key role in formation of the quaternary structure of HDGH.

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