

제목 : Purification and Characterization of Brain Succinic Semialdehyde Dehydrogenase

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The succinic semialdehyde dehydrogenase which is one of the key enzyme of GABA shunt in CNS has been purified from bovine brain homogeneously for the first time. The molecular mass of the native enzyme was estimated to be approximately 110,000 on gel filtration. The subunit molecular mass was determined by SDS-PAGE to be 54,000. These results indicate that the enzyme is a dimeric protein made up to identical subunits. Chemical modification studies of the enzyme suggest that the critical lysyl, cysteinyl and arginyl residues are connected with catalytic activity of the enzyme. The binding of IAF-SSDH(enzyme tagged with fluoresceine) to GABA transaminase which catalyzes the degradation of GABA was monitored by steady emission anisotropy. The changes of fluorescence anisotropy by interactions between two enzymes suggest that the formation of enzyme cluster must be involved in the regulation of GABA concentration in brain tissues. The inhibitory effects of some antiepileptic and anticonvulsant drugs on the enzyme were also examined.