제목 : Production and Characterization of Monoclonal Antibodies to Bovine Brain Succinic Semialdehyde Reductase

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Monoclonal antibodies against bovine brain succinic semialdehyde reductase were produced and characterized. A total of nine monoclonal antibodies recognizing different epitopes of the enzyme were obtained, of which two inhibited the enzyme activity and three stained cytosol of rat spinal cord neurons as observed by indirect immunofluorescence microscopy. When unfractionated total proteins of bovine brain homogenate were seperated by gel electrophoresis and immunoblotted, the antibodies specifically recognized a single protein band of 34 kDa, which comigrates with purified bovine succinic semialdehyde reductase. Using the antisuccinic semialdehyde reductase antibodies as probes, we investigated the cross-reactivites of brain succinic semialdehyde reductases from some mammalian and an avian species. The immunoreactive bands on Western blots appeared to be the same in molecular mass-34 kDa-in all animal species tested, including humans. The result indicated that brain succinic semialdehyde reductase is distinct from other aldehyde reductases and that mammalian brains contain only one succinic semialdehyde reductase. Moreover, the enzymes among the species are immunologically very similar, although some properties of the enzymes reported previously were different from one another.