

Abstract:

The enzyme nicotinamide adenine dinucleotide phosphate diaphorase (NADPH diaphorase) is widely used as a sensitive marker for indicating the presence of nitric oxide synthase in neurones. Pyramidal neurones in the healthy neocortex do not contain detectable levels of nitric oxide synthase. However, in the precentral gyrus of brains showing pathological damage, a high proportion of Betz cells (11–50%) and some smaller pyramidal neurones contained low to moderate levels of NADPH diaphorase. They were located in layers V and VI and were present in a newborn baby, older children and elderly adults. Thus, under pathological conditions, some pyramidal neurones are apparently capable of synthesising nitric oxide and this may have a neuroprotective function.