

THIOREDOXINS FAMILY PROTEINS IMMUNOLocalIZATION IN THE RAT CENTRAL NERVOUS SYSTEM

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Neuronal damage and glial reaction induced by hypoxic ischemic episode is related with glutamate excitotoxicity, oxidative stress and mitochondrial dysfunction. Although rat is the animal model most widely used to study the mechanism involved in neuronal cell death during different kinds of hypoxia-ischemia episodes, no systematic data on the localization of the thiol redox proteins in the Central Nervous System (CNS) is available. The main aim of this work was to study the distribution of the following thioredoxin family proteins: Trx-1, Trx-2, TrxR-1, TrxR-2, Txnip, Grx-1, Grx-2, Grx-3, Grx-5, gGCS, Prx-1, Prx-2, Prx-3, Prx-4, Prx-5 and Prx-6. This study analyzes areas of the CNS most sensitive to hypoxia including: Cerebellum, Neostriatum, Hippocampus, Spinal Cord, Substantia Nigra, Cortex and Retina. Although previous studies have suggested that these proteins are distributed in most of the cell types and regions of the CNS, we have observed several differences in intensity and regional distribution of them. Therefore our study is the first effort to precise the localization of these proteins. We think that this data will help to reveal new insights about the role of the oxidative pathway in the pathogenesis of the brain hypoxia-ischemia. Supported by UBACYT M407, PID 5784. DFG-SFB593-N01, D0805.