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Changes of Nitric Oxide Content in the Rat Hippocampus, Heart and Liver in Acute Phase of Ischemia

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Abstract

Electron paramagnetic resonance (EPR) was used as a method to record nitric oxide (NO) production in the tissues of the brain, heart and liver of healthy rats, and rats after modeling of ischemic stroke. Direct measurement of the dynamics of NO production by EPR spectroscopy in our experiments showed that after the emergence of signs of ischemic stroke, 5 h after the start of ischemia, the content of NO in the hippocampus decreased two- to threefold and this decrease was maintained at 24 and 72 h. Deserving special attention is the data demonstrating that there is a greater decrease of NO production in the tissues of the heart and liver than in the brain. Consequently, the change in intensity of NO production in the modeling of ischemic events in the brain has a systemic, not a local character.