

**Reactive free radical and nitric oxide determination in an experimental model system of rat brain ischemia and reperfusion**

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Intracerebral microdialysis coupled to the electron spin resonance – spin trapping technique was employed to detect reactive free radicals in rat striatum. Sprague-Dawley rats were subjected to 30 min of global ischemia followed by reperfusion. Throughout the experimental period the intrastriatal dialysis probe was perfused with Ringer's solution containing the spin trap agent pyridyl-N-oxide-*t*-butylnitron (100 mM). A radical adduct occurred during ischemia and early reperfusion, but not in basal conditions. The spin adduct was characterized as a carbon- and oxygen-centered radical. We have also studied the production of NO in the neostriatum under normal conditions and one and twenty-four hours after the ischemic lesion caused by the injection of Endothelin 1 (0.32 nmol/0.8 ml of saline). NO levels were measured by means of electron paramagnetic resonance spectroscopy, using intrastriatally injected hemoglobin (Hb) as a NO trap. No change in nitrosyl-Hb levels was observed 1 h after ET-1 injection. On the contrary, 24 h after a 125% increase of nitrosyl-Hb was found in the lesions neostriatum.