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EPR study of nitric oxide production in rat tissues under hypokinesia

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Abstract

EPR spectroscopy was used to study the intensity of nitric oxide (NO) production upon modeling 60-day progressive hypokinesia (restriction of motor activity) in rats and estimating the content of (DETC)2-Fe2+-NO complexes in heart and liver tissues. In 30 days of hypokinesia, there was a 2-3-fold increase in tissue NO. Administration of a nonspecific inhibitor of NO synthases, L-NAME, to hypokinetic rats prior to measurement decreased their NO level even below the untreated control. Our results show that the intensified NO production in hypokinesia is mainly due to NO synthases, rather than to the nitrite reductase pathway. © 2013 Pleiades Publishing, Ltd.

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Keywords

electron paramagnetic resonance, heart, hypokinesia, liver, nitric oxide, rat