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Anti-oxidative and anti-inflammatory protection induced by ranolazine in astrocytes in primary culture

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Ranolazine (Rn), a piperazine derivative, is indicated for the treatment of refractory chronic stable angina. Late sodium current (INa) amplitude is increased in different pathologies, such as myocardial ischemia. Rn induces benefits in cardiovascular, brain and other organs and systems. The present work was designed to determine the Rn protective role against inflammation and oxidative stress produced by A β 1-42 in astrocytes in primary culture. Cells were incubated with Rn (10⁻⁷, 10⁻⁶ and 10⁻⁵ M) during 24 hours. ELISA technique was used to assay pro-inflammatory mediators IL-1 β and

TNF- α . The expression of PPAR- γ , Mn-SOD and Cu/Zn-SOD was determined by western blot techniques. The presence of Rn diminished IL-1 β and TNF- α levels and increased PPAR- γ protein expression. Furthermore, antioxidant protein expression, Cu/Zn-SOD and MnSOD was significantly increased after Rn addition in astrocytes in primary culture. Accordingly with our results, Rn (at therapeutic concentrations) showed protective effects, such as anti-inflammatory and anti-oxidant actions in astrocytes in primary culture affected by A β 1-42 toxic peptide

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