Catuaba (*Trichilia catigua*) Prevents against Oxidative Damage induced by *in vitro* Ischemia-Reperfusion in rat Hippocampal Slices

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Abstract

*Trichilia catigua* has been widely employed empirically in Brazilian folkloric medicine in the management of some neurodegenerative diseases. However, the scientific basis for the observed pharmacological effects of *T. catigua* is scanty in the literature. Hence, in the present study, the neuroprotective potential of *T. catigua* was investigated in rat hippocampal slices exposed to oxygen and glucose deprivation (OGD) followed by reperfusion, to mimic an ischemic condition. The results showed that untreated slices previously exposed to 2h of OGD followed by 1h of reperfusion, resulted in significant increase in the generation of reactive oxygen species (ROS) (both in the incubation medium and in slice homogenates) and the activity of lactate dehydrogenase (LDH) in the incubation medium. In addition, there was a marked decrease in mitochondrial viability and the levels of endogenous non-protein thiols (NPSH). On the other hand, pre-treatment of slices with ethanolic extract of *T. catigua* (40-100 µg/mL) profoundly reduced ROS generation (both in the incubation medium and in slice homogenates); the activity of LDH released into the incubation medium; and this effect was associated with increase in mitochondrial viability and the level of NPSH. Our results suggest that the use of *T. catigua* extracts in folkloric medicine in the management of neuro-related diseases has a scientific basis. Consequently, we can speculate that *T. catigua* is a potential candidate in the treatment of ischemic-related brain disorders involving oxidative stress.

Keywords: *Trichilia catigua*, hippocampus, neuroprotection, antioxidant, oxidative stress

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