Introduction: Neurodegenerative disorders, like Alzheimer’s disease (AD) are frequent in elderly people, as a result of malfunctioning of different biochemical pathways. The drugs approved for the AD therapy act by counteracting the acetylcholine (Ach) deficit, that is, they try to enhance the acetylcholine level in the brain. The drugs used so far, take advantage of their action as acetylcholinesterase inhibitors (AChEIs) but these drugs have been reported to have their adverse effects including gastrointestinal disturbances, hepatotoxicity, and problems associated with bioavailability which increases the interest in finding better acetylcholinesterase inhibitors from natural resources. 1,2 Trichilia silvatica (Melicaceae) is known as “coffee-to-kill” or “catiguá-white”. Studies of the leaves reveal the presence of sesquiterpenes, triterpenes, lignan glycosides, steroids and limonoids, as well anti-inflammatory and antioxidant activities. 3,4

Objectives: Evaluation the acetylcholinesterase activity of the extract obtained of the bark and leaves from T. silvatica.

Material and Methods: T. silvatica leaves and bark were collected in Dourados-MS, Brazil. Air-dried leaves (TSL) and bark (TSB) were exhaustively extracted by maceration with methanol.

Results: The TSL samples not showed alteration in AChE activity in brain structures. AChE activity was decreased with TSB in 0.5mg/ml (CC: 2.86 µmol Ach.h⁻¹.mg⁻¹; HP:0.93 µmol Ach.h⁻¹.mg⁻¹; CE: 0.33 µmol Ach.h⁻¹.mg⁻¹); in 2.5mg/ml (CC: 10.25 µmol Ach.h⁻¹.mg⁻¹; HP:2.59 µmol Ach.h⁻¹.mg⁻¹; CE: 6.27 µmol Ach.h⁻¹.mg⁻¹); 4.0 mg/ml (CC: 8.27 µmol Ach.h⁻¹.mg⁻¹; HP:12.4 µmol Ach.h⁻¹.mg⁻¹; CE: 7.81 µmol Ach.h⁻¹.mg⁻¹); samples compared to the control. Discussion and Conclusion: The methanol extracts obtained from T. silvatica of the bark anticholinesterase effect in the analyzed structures, however, it is necessary to continue the study in ex vivo models in order to characterize its inhibitory action of acetylcholinesterase.

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References:

