***IN VITRO* EFFECTS OF *Vulpicida pinastri* EXTRACT ON OXIDATIVE STRESS AND MITOCHONDRIAL DYSFUNCTION: A PHARMACOLOGICAL APPROACH IN THE TREATMENT OF NEURODEGENERATIVE DISEASES.**

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Oxidative stress plays a key role in the pathogenesis of many neurodegenerative diseases. Moreover, overproduction of reactive oxygen species (ROS) leads to structural and functional mitochondrial alterations. Therefore, the prevention of ROS/antioxidants imbalance constitutes a pharmacological strategy for those neurodegenerative disorders associated with oxidative stress and mitochondrial dysfunction. In this context, lichens are a source of unique secondary metabolites with antioxidants properties which are of interest to deal with ROS. The aim of the present study is to investigate for the first time the potential neuroprotective action of *Vulpicida pinastri* (Scop.) J.E. Mattsson & M.J. Lai extract in a hydrogen peroxide-induced model on human neuroblastoma SH-SY5Y cells. Pretreatments with 5 µg/ml of lichen methanol extract increased cell viability and improved morphological changes compared to those cells exposed only to hydrogen peroxide. Moreover, lichen extract reduced intracellular ROS production and lipoperoxidation and increased GSH levels and SOD activity. Finally, the mitochondrial damage caused by H2O2 exposure was partially reverted by *V.pinastri* extract, increasing mitochondrial membrane potential and reducing cytosolic calcium level. Therefore, these findings show that the lichen *Vulpicida pinastri* is a promising neuroprotective agent, based on its antioxidant properties, for the prevention and treatment of neurodegenerative diseases such as Alzheimer’s disease and Parkinson’s disease. Funding: Spanish Ministry of Science, Innovation and Universities (PID2019-105312GB-100), Santander University Complutense of Madrid (PR87/19-22637), Predoctoral research grant from UCM (CT42/18-CT43/18).