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Ph.D. project title: Design, synthesis and biological evaluation of new small molecules as neuroprotective agents

Research summary: Neurodegenerative diseases, such as Alzheimer Disease and Parkinson Disease, are a demanding challenge. In fact, nowadays there are no resolute therapies, but only palliative drugs. This is because of their complex etiopathology. They are characterized by protein aggregation, neuroinflammation, oxidative stress, metal dyshomeostasis and mitochondrial dysfunction. Moreover, autophagy alteration worsen the pathological condition favouring the accumulation of aggregated proteins and dysfunctional materials. In light of the above, the aim of this research project is to design and synthesis a novel library of compounds targeting the main actors of the autophagy process, in order to find new potential lead-compound for the discovery of new therapeutic treatments for neurodegenerative diseases.