Xanthone derivatives with potential dual mode of action for Alzheimer’s Disease

Maria Inês S. Cruz*, Sara M. Cravo1, Honorina Cidade2,3, Madalena Pinto1,3,*
1Centro de Química Medicinal da Universidade do Porto (CEQUIMED UP), Laboratório de Química Orgânica e Farmacêutica, Departamento de Ciências Químicas, Faculdade de Farmácia, Universidade do Porto, Rua Jorge Vitórino Ferreira nº 226, 4050-313 Porto, Portugal.
2Centro Interdisciplinar de Investigação Marinha e Ambiental (CIMAR/CIMAR), Universidade do Porto, Rua do Agrupamento nº 289, 4050-123 Porto, Portugal.
3madalenap@ufp.pt
*Master Student of Pharmaceutical Chemistry, PFUP

Alzheimer’s disease (AD) is the most prevalent form of dementia. It is known that the malfunctions of different, but interconnected, biochemical complex pathways are related to the pathogenesis of AD. Inhibition of acetylcholinesterase and therefore prevention of acetylcholine degradation is one of the most accepted therapy strategies for AD. Consequently, several acetylcholinesterase (AChE) inhibitors have been approved for commercial use. Nevertheless, due to the lack selectivity of AChE inhibitor drugs, AD patients suffer from side-effects, suggesting that there is a considerable need for strategies for development of new AChE inhibitors [1, 2].

The multifactorial nature of AD requires new therapeutic strategies. The most current innovative therapeutic approach is based on the ‘one molecule, multiple targets’ paradigm. Among the multipotent approaches, the association between cholinesterase inhibition and antioxidant activity has been considered as an attractive strategy for the treatment of AD [1]. Based on these precedents, this project for the thesis for Masters in Pharmaceutical Chemistry aims to obtain new AChE inhibitors with antioxidant activity with a xanthone scaffold. In this communication, preliminary results concerning the synthesis of some xanthone derivatives will be presented.

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REFERENCES