Wenhai Huang et al., J Pharmacogn Nat Prod 2016, 2:3(Suppl)
http://dx.doi.org/10.4172/2472-0992.C1.003

Structure modification of chalcones derivatives as anti-Alzheimer's disease drugs

Wenhai Huang, Meihao Liang and **Zhengrong Shen**
Zhejiang Academy of Medical Sciences, China

Chalcones, considered as the precursors of flavonoids and isoflavonoids, are abundant in edible plants, and have also been shown to display a diverse array of pharmacological activities. Alzheimer's disease (AD), the leading cause of dementia in the elderly, is a neurodegenerative disorder. The multiple and complexity etiologies of AD make single-target strategy difficult to get desirable therapeutic effect. Thus Multi-Target-Directed Ligand (MTDL), which is rationally designed to hit multiple targets for a particular disease, rises as a potentially more effective strategy for AD treatment. Until now, most drugs approved for AD treatment are AChE inhibitors, which improve the ACh level in the brain by decreasing the hydrolysis of ACh. On the other hand, recent evidence indicated that dyshomeostasis of biometals (Fe, Cu, Zn) in the brain may contribute to AD pathology. Experiments also found that the levels of metal ions in AD patients are 3-7 folds higher than that of healthy individuals. Therefore, decreasing the level of metal ions in brain by using metal chelator represents another rational therapeutic approach for the treating of AD. Considering the above, we hybrid the Chalcone and AChE inhibitor rivastigmine and donepezil to design multi-target-directed ligands which have effects on AChE and metal in this study. Twenty Chalcones derivatives had been synthesized and tested the biological activities.

Biography

Wenhai Huang is an Associate Research Professor in the Institute of Materia Medica, Zhejiang Academy of Medical Sciences. He received his BS and PhD degrees from Zhejiang University in 2006 and 2011, respectively. His research interests are in anti-AD drugs. He has published about 20 peer-reviewed papers.

cyj@zju.edu.cn

Notes: