

International Conference on

# Pharmaceutical Chemistry

September 05-07, 2016 Frankfurt, Germany

## Synthesis of new donepezil analogues and evaluation of their cholinesterase inhibitory activity

Begum Nurpelin Saglik, Sinem Ilgin and Yusuf Ozkay  
Anadolu University, Turkey

Alzheimer disease (AD), is a neurodegenerative disorder of which appearance probability increases day after day as a result of extended lifetime. It causes deterioration in cognitive, sensory and behavioral situations of patients and lowers the quality of life. The reasons as worldwide increase in the patient population over the years, absence of a radical treatment, and too long period of current therapies and height of the maintenance costs increase the significance of the AD. The new drug development studies in this field continue in a great speed. Donepezil, tacrine, galantamine and rivastigmine are AChE inhibitors having different chemical structures for the symptomatic treatment of AD. Donepezil is the most preferred drug and has the most positive response in AD treatment. It has indanone and piperidine ring systems as chemical structure. These ring systems are responsible for the inhibition of AChE. Piperidine moiety is the pharmacophore group in the enzyme inhibitor activity. Therefore, piperidine ring is very important to design new cholinesterase inhibitors. There are too many researches including piperidine group. In this study, totally 14 new compounds in the structure of 2-(4-((5, 6-dimethoxy-1-oxo-2,3-dihydro-1H-inden-2-yl)methyl)piperidin-1-yl)-N-arylamide were synthesized. Structures of the obtained compounds were elucidated by IR, NMR and MS spectroscopic methods and elemental analyses findings. All synthesized compounds were assessed as the AChE and BChE inhibitors by using *in vitro* modified Ellman's spectrophotometric method. Enzymatic studies showed that there are showed enzyme inhibitory potency to different extents and will be evaluated in further detailed studies.

### Biography

Begum Nurpelin Saglik is a Research Assistant in Anadolu University Faculty of Pharmacy, Department of Pharmaceutical Chemistry. She has completed her Master's degree in 2016. She is pursuing her PhD at present and is in the first semester of PhD.

[bnurpelin@anadolu.edu.tr](mailto:bnurpelin@anadolu.edu.tr)

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