

# Special Issue for ANTI-INFLAMMATORY & ANTI-ALLERGY AGENTS IN MEDICINAL CHEMISTRY

*Guest Editors: Marcella Reale & Ada Maria Tata*

## CHOLINERGIC SYSTEM AND ITS INHIBITORS: THERAPEUTIC IMPLICATIONS

### **Aims & Scope:**

Acetylcholine (ACh), is a classical neurotransmitter in the central and peripheral nervous systems. However, ACh can also be found in the blood, and lymphocytes possess all the components required to constitute an independent, non-neuronal cholinergic system. These include ACh, choline acetyltransferase (ChAT), its synthesizing enzyme, the degradative enzyme acetylcholinesterase (AChE) and both muscarinic and nicotinic ACh receptors. Moreover the existence of the cholinergic autocrine/paracrine loop in tumor cells provides a basis for understanding tumor cell biology and identification of new targets for potential therapeutic approaches. The symptomatic efficacy of acetylcholinesterase inhibitors (AChEIs) is attained through their augmentation of acetylcholine-mediated neuron-to-neuron transmission, with improvement in behavioural and psychological symptoms of dementia. Thus AChEIs are widely available for the treatment of mild-to-moderate AD. Cholinergic dysfunction may also involve in Multiple Sclerosis (MS) and ChE may contribute to sustain CNS inflammation in MS. In fact the decrease of acetylcholine levels would, in turn, reduce cholinergic input to immune cells and lead to the release of pro-inflammatory cytokines promoting neuroinflammation. Recently was discovered a neural inhibition of inflammation termed “cholinergic anti-inflammatory pathway” that interfaces the brain with the immune system.

The complexity of cholinergic system regulation and the variety of cholinergic functions which are impaired in a number of disorders have been extensively studied. These evidences have opened a new chapter in the field of cholinergic research and also advanced our knowledge beyond this area. In this issue, we welcome a focus on new aspects of cholinergic system and ChEI treatment of various syndromes and diseases.

### **Subtopics:**

Cholinergic dysfunction in neurodegenerative disease  
New indications of ChEI therapy in a variety of CNS disorders  
Cholinergic system and hematopoiesis  
Cholinergic system and strategies for cancer treatment  
Cholinergic anti-inflammatory pathway

### **Schedule:**

Manuscript submission deadline:	3 Sept, 2012
Peer Review Due:	15 Oct, 2012
Revision Due:	12 Nov, 2012
Notification of acceptance by the Guest Editor:	3 Dec, 2012
Final manuscripts due:	10 Dec, 2012