

## Tentative Outline

### Special Thematic Issue for Current Molecular Pharmacology

#### *“Pain and Inflammation Management by Using Bioactive Molecules Derived from Medicinal Plants or Natural Products”*

*Guest Editors: Prof. Esra Küpeli Akkol and Prof. Eduardo Sobarzo-Sánchez*

#### **Aims & Scope:**

Plants used in traditional medicine contain a wide range of compounds which play an important role in the management of health related problems. Natural products are used not only for the treatment of specific diseases such as cardiovascular disease, cancer, and inflammatory disease (which may in any case, actually include other chronic disease, like CVD, cancer and diabetes), but also for the contribution to the search for new drugs by providing chemical structures used to synthesize more complex molecules and by indicating new modes of pharmacological action (Sarker et al., 2006). In spite of major scientific and technological progress in combinatorial chemistry, drugs derived from natural products still make an enormous contribution to drug discovery today (Puni et al., 2004). More than 80% of the world's population relies on traditional medicine according to World Health Organization (Sivaperumal et al., 2010). Ethnopharmacological investigations have been carried out for the scientific evaluation of the materials which are used traditionally and practiced by rural people on all over the world.

Inflammation and pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage (Kreitler et al., 2007). Inflammation which is a pattern of response to injury, involves the accumulation of cells and exudates in irritated tissues that allows protection from further damage. After feeling a hurtful sensation inside or outside the body, the signals are sent to the central nervous system and are perceived as pain. Bradykinin, histamine, prostaglandins and serotonin are the mediators that stimulate nerve endings and start the inflammation and pain processes. Treating the cause or using a safe anti-inflammatory and analgesic provides effective relief for the pain management. Inflammation and pain has been studied for thousands of years in an attempt to combat their effects on the body. In AD 30, Celsius described the four classic signs of inflammation (rubor, dolor, and tumor, or redness, heat, pain, and swelling), and used extracts of willow leaves to relieve them (Vane and Botting, 1987). For many years, salicylate-containing plants were applied therapeutically and lead to the production of a major anti-inflammatory drug - Aspirin. Aspirin, an agent with anti-inflammatory activity, is derived from natural sources, and is used extensively in current clinical practice. Many other aspirin like drugs are now available including the non-steroid anti-inflammatory drugs (NSAIDs). Besides the synthetic drugs most of which cause gastric problems, traditional medicines can also be effective therapy for pain.

We invite authors from all parts of the world to contribute with research reviews that evaluate anti-inflammatory and antinociceptive effects of medicinal plants. We are particularly interested in manuscripts that describe assessment of anti-inflammatory and antinociceptive activities by *in vitro* and *in vivo* experimental models and compile these biological effects by using active molecules from natural sources.

#### **References:**

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- Puni V, Saint-Dic D, Daghfal S, Kanwar JR. Microbialbased therapy of cancer: a new twist to age old practice. Cancer Biol Ther 2004; 3: 708-714.
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**Keywords:** Pain, Inflammation, Medicinal plant, Natural products, and Drug development

### Subtopics:

The subtopics to be covered within this issue are listed below:

- Antinociceptive and antiinflammatory activities of plant extracts and their constituents
- *In vivo* and *in vitro* activity models on antinociceptive and antiinflammatory activities
- Biological activity guided isolation studies
- Elucidating the mechanism of action
- Evidenced-based research and clinical trials on inflammation
- Drug delivery system

### Schedule:

- ✧ Manuscript submission deadline: **September 2020**
- ✧ Peer Review Due: **October 2020**
- ✧ Revision Due: **November 2020**
- ✧ Announcement of acceptance by the Guest Editors: **October 2020**
- ✧ Final manuscripts due: **October 2020**

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