EDITORIAL

Natural Moieties as Anti-Inflammatory Agents—Recent Patents

Inflammation is a major cause of progression of several dreadful diseases such as cancer, cardiovascular and neurodegeneration. It has been found that each year the number of infected patients with inflammatory diseases is increasing rapidly. Due to the lack of promising therapeutic approaches, the chances are there that inflammatory disorders will become the number one to cause mortality in patients. In the past decade, the drug resistance against existing drug molecules has been observed that stimulated the need to develop or find alternative therapies. Epidemiological studies have shown the promising role of plant secondary metabolites in the prevention of inflammation and associated disorders. There are a diverse group of biological molecules such as flavonoids or polyphenolic compounds that are known to possess promising anti-inflammatory activity. Broad spectrum of the mode of actions of natural metabolites has attributed them a wide therapeutic application. Further, chronic inflammation is found to be associated with a variety of genes that enhance the inflammatory signaling pathways leading to the expression of inflammatory cytokines and chemokines. It has been reported that polyphenolic compounds, present in fruits, tea, and in other vegetables may not only suppress the production of pro-inflammatory cytokines but may also up-regulate their natural cellular inhibitors. Studies have suggested the utilization of natural polyphenolic compounds instead of using steroidal anti-inflammatory drugs to possibly suppress the intensity of inflammation in various chronically inflammed patients with inflammatory diseases. These natural polyphenolic compounds can be metabolized by the Phase I enzymes (cytochrome P-450 enzymes) and Phase II protective enzymes. This special issue attempts to report the current progress of natural anti-inflammatory agents with special emphasis on the recent published patent. The aims and scope of this special issue mainly focus on the important contributions of anti-inflammatory natural polyphenolic compounds. This issue is a collection of four articles that has exquisitely described natural anti-inflammatory sources with strong history of patented applications. Martínez et al. described the most active flavonoids in inflammation that modify immune response, such as apigenin, quercetin and epigallocatechin-3-gallate (EGCG). The most relevant patents concerning the use of flavones and other polyphenols has been discussed in a quite impressive way along with a note on the promising future of these compounds in different therapies. Other promising article by Kapoor et al., reported the role of marine organisms to obtain potential novel drugs with anti-inflammatory action. Chaudhary et al. discussed various therapeutic applications and patent studies on ferulic acid. Ferulic acids have a wide scope of their impacts against different infections, like malignant growth, diabetes, cardiovascular and neurodegenerative diseases etc. Furthermore, a review summarized by Sharma et al. about important molecular mechanisms of action of apigenin in inflammation associated with cancer is another highlight of this thematic issue. In addition, their review has covered various patent claims/applications which explored various therapeutic potential and pharmacological properties of apigenin and its innumerable applications in the pharmaceutical compositions. We hope that this thematic issue will be beneficial and interesting for its readers.

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