

Special Issue on
Dietary Phytochemicals in Cancer Prevention and Therapy: Molecular Mechanisms and Translational Significance

CALL FOR PAPERS

The use of dietary agents in the prevention and treatment of diseases has a long history in nearly every culture. Hippocrates way back in 400 BC proclaimed, “Let food be thy medicine and medicine be thy food.” In recent years, the concept of chemointervention by functional foods and dietary agents has gained increasing research attention following the demonstration of an inverse correlation between high intake of fruits, vegetables, and whole grains and the risk of cancer. More than 1000 different phytochemicals belonging to diverse structural and functional chemical classes have been identified to display potential anticancer properties.

Dietary phytochemicals offer promise in chemointervention of cancer due to their chemical diversity, structural complexity, inherent biologic activity, affordability, easy availability, and lack of substantial toxic effects. However, the therapeutic effects of phytochemicals are not fully substantiated by clinical trials. Furthermore, much of the evidence for chemopreventive properties of a phytochemical is generally based on *in vitro* tests in cell lines or in animal models. The complex signaling networks influenced by phytochemicals, their synergistic, additive, or antagonistic effects on different cell types, bioavailability of the phytochemical, and unidentified cross talk with other signaling molecules appear as major hurdles for the extrapolation of results obtained *in vitro* to humans.

Toxicity is another major concern in the use of phytochemicals. It is also important to identify candidate agents that can be used in “convergent” trials designed to include patients in both early and end stage disease and facilitate the development of rational, effective, and safe drugs. Despite these bottlenecks, there is a tremendous surge in identifying phytochemicals that target specific molecules and oncogenic signaling pathways.

Potential topics include but are not limited to the following:

- ▶ Effects of dietary phytochemicals on gene expression and signaling pathways
- ▶ Molecular targets of dietary phytochemicals
- ▶ Role of dietary phytochemicals on cancer hallmarks
- ▶ Impact of dietary phytochemicals on the epigenome
- ▶ Role of phytochemicals in targeting cancer stem cells
- ▶ Nutritional genomics and proteomics in chemoprevention
- ▶ Phytochemicals as adjuvant in cancer chemotherapy
- ▶ Nanotechnology for delivery of phytochemicals
- ▶ Systematic reviews on clinical benefits
- ▶ From experimental models to clinical trials
- ▶ Ongoing clinical trials for the recurrent/metastatic disease states

Authors can submit their manuscripts through the Manuscript Tracking System at <http://mts.hindawi.com/submit/journals/jo/dpcp/>.

Lead Guest Editor

Siddavaram Nagini, Annamalai University, Chidambaram, India
snlabau@gmail.com

Guest Editors

Yasmin A. M. Yusof, Universiti Kebangsaan Malaysia, Bangi, Malaysia
rahmatyasmin@yahoo.com

Sudin Bhattacharya, Chittaranjan National Cancer Institute, Kolkata, India
sudinb1957@yahoo.co.in

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