



# Oxidative Medicine and Cellular Longevity

## Special Issue on **Drug-Metabolizing Enzymes and Metabolic Diseases: Role of Antioxidants**

# CALL FOR PAPERS

Drug-metabolizing enzymes include many cytochrome P450 isozymes and others. The hepatic cytochromes P450s (CYP) are a multigene family of enzymes that metabolize many drugs and carcinogens. For example, CYP 1A1, CYP 1A2, CYP 3A, and 2E1 are particularly active towards polycyclic aromatic hydrocarbons (PAHs), bladder carcinogens, the naturally occurring carcinogens (e.g., aflatoxin B1), and N-nitrosamines, respectively, and activate them into reactive intermediates that covalently bind to DNA, a key event in the initiation of carcinogenesis. The carcinogenic potency of carcinogens is correlated with the induction of cytochrome P450 isozymes. Recent studies have demonstrated that glutathione and glutathione S-transferase reduced the covalent binding of epoxides of well-known chemical carcinogens with DNA and other macromolecules, effectively decreasing carcinogenesis caused by these compounds.

Recently, natural and synthetic antioxidants were found to reduce the incidence of tumors since the decrease in antioxidant levels is correlated with the severity of malignancy of tumors. In addition, the formations of considerable amounts of oxidative stress products including free radicals are responsible for induction of many diseases including cancers, diabetes, and infertility. Therefore, this special issue will open the field for researchers to investigate the possible protective role of antioxidants against the carcinogenic effects of carcinogens.

We invite investigators to contribute original research articles as well as review articles that will stimulate the continuing efforts to understand the role of antioxidants in protection against carcinogens as well as other toxic compounds.

Potential topics include, but are not limited to:

- ▶ Drug-metabolizing enzymes and toxicity of foreign compounds
- ▶ Role of antioxidants in the alleviation of toxicity of foreign compounds
- ▶ Diseases (e.g., diabetes, cancer, and infertility) associated with oxidative stress and free radicals
- ▶ Role of antioxidant enzymes in the alleviation of oxidative stress caused by different metabolic diseases and/or toxic compounds
- ▶ Role of glutathione and glutathione-metabolizing enzymes in drug conjugation and detoxification
- ▶ Molecular mechanisms of cancer induction
- ▶ Molecular mechanisms of cell apoptosis and transducers, for example, mTOR, under the influence of new compounds that can be used as anticancer drugs

Authors can submit their manuscripts via the Manuscript Tracking System at <http://mts.hindawi.com/submit/journals/omcl/demd/>.

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### **First Round of Reviews**

Friday, 16 September 2016

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