

## Guest editorial:

### EDITOR'S CHOICE 2019: OXIDATIVE STRESS AND ANTINEOPLASTIC AGENTS

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Each issue of EXCLI Journal contains recommendations of ten articles of the previous year chosen by the editorial board. Articles chosen from the 2019 issue include a wide range of topics with a focus on oxidative stress and antineoplastic agents.

• *Induction of apoptosis by piperine in human cervical adenocarcinoma via ROS mediated mitochondrial pathway and caspase-3 activation*

Piperine (1-piperoylpiperidine) concentration dependently induces apoptosis in the human cancer cell line HeLa (Jafri et al., 2019). The compound was shown to cause an increase in reactive oxygen species and a G2/M phase arrest. It will be interesting to learn more about the anticancer potential of this compound *in vivo*.

• *Hesperidin ameliorates bleomycin-induced experimental pulmonary fibrosis via inhibition of TGF-beta1/Smad3/AMPK and Ikappa-Balpa/NF-kappaB pathways*

One of the most severe side effects of the antineoplastic compound bleomycin is pulmonary fibrosis. Interestingly, the flavonoid hesperidin ameliorated bleomycin induced lung fibrosis in rats (Zhou et al., 2019). However, it remains to be analyzed if co-administration of hesperidin together with bleomycin also reduces the antineoplastic effect of bleomycin.

• *Antiviral activity of flavonoids present in aerial parts of *Marcetia taxifolia* against Hepatitis B virus, Poliovirus, and Herpes Simplex virus in vitro*

The authors studied the antiviral effects of compounds isolated from the aerial parts of the neo-tropical plant *Marcetia taxifolia* (Ortega et al., 2019). Methoxyflavones were identified as possible lead compounds with a broad antiviral activity.

• *Auraptene-induced cytotoxicity mechanisms in human malignant glioblastoma (U87) cells: role of reactive oxygen species (ROS)*

The prenyloxy coumarin Auraptene was shown to be cytotoxic in human glioblastoma cells and to upregulate p21, while cyclin D<sub>1</sub> was suppressed (Afshari et al., 2019). Therefore, the antineoplastic capacity of this compound should be studied in mouse tumor models.

• *Up-regulation of long non-coding RNA-PCAT-1 promotes invasion and metastasis in esophageal squamous cell carcinoma*

The authors demonstrated that the long non-coding RNA prostate cancer associated transcript-1 ncRNA (lncRNA-PCAT-1) is up-regulated in 150 esophageal squamous carcinomas compared to adjacent non-cancer tissue (Razavi and Ghorbian, 2019).

• *Efficacy and tolerability of fourteen-day sequential quadruple regimen: pantoprazole, bismuth, amoxicillin, metronidazole and or furazolidone as first-line therapy for eradication of Helicobacter pylori: a randomized, double-blind clinical trial*

This is a randomized, double-blind clinical trial conducted with 344 patients to study efficacy and safety of bismuth-based quadruple therapy compared to a modified regimen to eradicate *Helicobacter pylori* (Mansour-Ghanaei et al., 2019). Efficacy was highest for the bismuth-based quadruple therapy.

• *Immunoregulatory, proliferative and anti-oxidant effects of nanocurcuminoids on adipose-derived mesenchymal stem cells*

The influence of nano-formulations of curcuminoids on mesenchymal stem cells was analyzed (Yousefi et al., 2019). Low concentrations reduced inflammatory cytokines and showed anti-apoptotic effects. However, at higher concentrations the expression of TGF-beta was increased.

• *Rhomboid antigens are promising targets in the vaccine development against Toxoplasma gondii*

Approximately 30 % of humans are seropositive for *Toxoplasma gondii*. The authors reviewed the recent progress in the development of vaccines based on rhomboid proteases, a class of serine proteases that play a role during the invasion of the parasites (Foroutan et al., 2019).

• *Cell phone addiction and psychological and physiological health in adolescents*

The author reviews the influence of the excessive use of cell phones on the psychological health of adolescents (Shoukat, 2019).

• *Exposure to effluent from pharmaceutical industry induced cytogenotoxicity, hematological and histopathological alterations in Clarias gariepinus (Burchell, 1822)*

Effluents from pharmaceutical companies may contain toxic xenobiotics. The authors

showed significant genotoxic effects of pharmaceutical effluents, which may lead to adverse effects on aquatic biota (Alimba et al., 2019).

### **Conflict of interest**

The author declares no conflict of interest.

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