

# Tentative Outline

## Special Thematic Issue for the journal *Current Cancer Drug Targets*

### Title of the Thematic Issue: **Cancer Exosomes – Prognostic Significance and their Utilization as Novel Drug Delivery System for Circumvention of Cancer Drug Resistance**

**Guest Editor: *Kenneth Kin Wah To***

#### • **Scope of the Thematic Issue:**

Exosomes are a unique form of extracellular vesicles with endosomal origin and sizes ranging from 30 to 100 nm. They are released upon the fusion of multivesicular bodies with plasma membranes from diverse cell types. Exosomes facilitate intercellular cross-talk by transferring mRNA, microRNA and proteins from donor to recipient cells. Recent reports indicate that the molecules incorporated in exosomes are biologically active when taken up by the recipient cells and they could modulate numerous cellular functions.

Tumor-derived exosomes have been shown to mediate the intercellular transfer of pro-tumorigenic factors in the tumor microenvironment. They promote angiogenesis, invasion, and proliferation in recipient cells to support tumor growth and a pro-metastatic phenotype. Importantly, drug-sensitive cancer cells could become drug-resistant after taking up exosomes shed from drug-resistant cancer cells. Moreover, exosomes were also reported to mediate drug resistance by exporting specific drug via the exosome pathway and neutralizing antibody-based chemotherapy. Due to the unique cellular origin of exosomes, they have also been utilized as novel drug delivery systems to target drug-resistant cancer cells.

The aim of this thematic issue is to compile a collection of updated review about the emerging role of cancer exosomes on chemoresistance. The prognostic significance and their utilization as novel drug delivery system to overcome drug resistance will be discussed.

**Keywords:** Exosome; Multivesicular bodies; Chemoresistance; Tumor microenvironment; Cell-to-cell communication; Prognostic biomarkers; Targeted drug delivery; Nanodrug cargo.

#### **Sub-topics:**

- Cancer biomarkers
- Tumor microenvironment
- Angiogenesis and cancer metastasis
- Nanoscale drug delivery system
- Angiogenesis and cancer metastasis

#### **Tentative titles of the articles and list of contributors:**

- Intercellular cross-talk via exosomes in cancer cells
- Exosome biogenesis in drug-resistant cancer cells
- Prognostic significance of tumor exosomes and response to chemotherapy
- Exosome-mediated immunosuppression and cancer immunotherapy
- Exosome-based cancer therapeutics
- Exosome as novel drug cargo delivery system for overcoming chemoresistance

#### **Schedule:**

- ❖ Thematic issue submission deadline: 30 Sep 2022

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