

## Special Issue on Mathematical Modeling of Drug Delivery to Solid Tumors

# CALL FOR PAPERS

In solid tumors, physiological barriers are the main reason for a decrease in drug delivery and treatment efficacy. These barriers contribute to high interstitial fluid pressure which impedes systematic drug delivery. In addition, each tumor has its own structure and physiochemical characteristics such as capillary network patterns and hydraulic conductivity which makes drug delivery and treatment of solid tumors very complicated and case-specific. Due to multiple processes involved in drug delivery as well as the complexity of the tumor microenvironment, mathematical modeling is an effective tool in predicting restrictions to drug delivery in cancer treatment. The effectiveness of anticancer drugs in solid tumors is dependent on the successful delivery of these agents to all cancer cells. Mathematical modeling and simulation can help us better understand tumor behavior which will ultimately improve the treatment outcome. An accurate model can predict results very accurately so that the model's output can be used for further treatment planning and provide a preliminary step forward towards the goal of personalized medicine.

In this special issue we invite the submission of original research and review articles focusing on basic research, development, and application principles of mathematical modeling of drug delivery to solid tumors at molecular, cellular, and higher levels. Topics covered include but are not limited to mathematical modeling of tumor growth, angiogenesis, delivery systems, targeted drug delivery, nanomedicine, and antiangiogenesis.

Potential topics include but are not limited to the following:

- ▶ Mathematical modeling of solid tumor microenvironment
- ▶ Multiscale modeling of solid tumors
- ▶ Targeted drug delivery to solid tumors
- ▶ Mathematical modeling for delivery of nanomedicine and modern functionalities of nanocarriers (for example, stimuli sensitivity (pH, temperature, ultrasound, etc.) of nanoparticles) to solid tumors
- ▶ Mathematical modeling of angiogenesis and antiangiogenesis strategies for solid tumors
- ▶ Mathematical prediction of tumor growth
- ▶ Image-based drug delivery modeling to solid tumors
- ▶ Modeling the enhanced permeability and retention (EPR) effect of drugs in solid tumors
- ▶ Modeling of blood-brain barriers of solid tumors

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/cmmm/mmdd/>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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