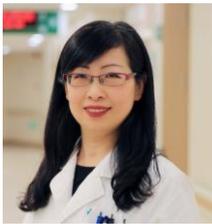




Application of novel diagnosis and treatment technologies in precision oncology

Guest Editor



Prof. Xiaofang Che

Department of Oncology Medical, The First Hospital of China Medical University

xfche@cmu.edu.cn



Assoc. Prof. Jia Wang

Department of Surgery, The Second Hospital of Dalian Medical University, Dalian, Liaoning, China

wangjia77@hotmail.com



Assoc. Prof. Chunlei Zheng

Department of Oncology Medical, Shanghai Electric Power Hospital

cl_zheng@foxmail.com

Message from the Guest Editor

Dear Colleagues,

Much progress has been made in comprehensive strategy for cancer therapy including surgery, chemotherapy, radiotherapy, targeted therapy and immunotherapy, has significantly improved the prognosis of patients with malignant tumors. However, due to the difficulty of early diagnosis, strong spatial-temporal heterogeneity, limited curative effect and the occurrence of resistance, the incidence and mortality of cancers still remains high. Therefore, to prolong the overall survival and to avoid the overtreatment or insufficient treatment, it is of great significance to make the right diagnose and the



reasonable individualized treatment plan for cancer patients, the so-called precision oncology. The rapid development of bioinformatics analysis and next generation sequencing (NGS) has promoted the progress of precision oncology, in which the representative example is that EGFR mutation detection has been widely used for the guidance of EGFR-TKI therapy in lung cancer. Precision oncology is needed throughout the whole process from diagnosis to therapy, including the precise prediction of risk, diagnosis, classification and prognosis, as well as the precise screening of superior therapeutic population, assessment of efficacy and the development of new drugs. In recent years, more and more novel technologies have been developed explosively, including proteomics, metabolomics, intestinal microbiome, single cell sequencing, spatial transcriptome, liquid biopsy, molecular imaging, artificial intelligence, molecular docking, etc. In particular, because of multiple merits including its non-invasive or minimally invasive, easy to obtain specimens, easy to collect images, easy to be accepted by patients, liquid biopsy technology based on ctDNA/CTC/exosome, and radiomics technology based on CT/MRI/ultrasonic, have attracted much attention in early diagnosis, prognosis prediction, efficacy prediction, dynamic monitoring and so on. Moreover, due to the spatial-temporal heterogeneity, the existing treatment methods could not be effective for all cancer patients. Therefore, how to screen the treatment sensitive population and explore new drugs or drug resistance reversal strategies for insensitive patients is also an important challenge of precision oncology.

In this Special Issue, we aim to collect Original Research and Review articles focusing on novel technologies related to cancer diagnosis, prognostic prediction, efficacy prediction and the exploration of new drugs or resistance reversal strategies as described above. We hope this Special Issue will lead to a better understanding of precision cancer medicine, provide useful technologies for clinical application and highlight the clinical significance. In silico data analysis needs to be verified with in vitro/in vivo experiment.

Prof. Xiaofang Che, Assoc. Prof. Jia Wang and Assoc. Prof. Chunlei Zheng

Guest Editors

Submission Deadline: **31 December 2023**

Submission: <https://www.fbscience.com/Landmark>

Science Citation Index Expanded: **4.009** (2020)

Contact us: Front.Biosci.Landmark@fbscience.com