

Special Issue

Heterogeneity and Precision Oncology in Circulating Tumor Cells

Message from the Guest Editors

Circulating tumor cells (CTCs) are a rare subpopulation of cells found in the blood of patients with cancer. CTCs present in the blood have the potential to be used as a liquid biopsy for the early diagnosis, prognosis, and therapy response related to various cancers, in comparison to more conventional forms of tumor tissue biopsies. It is a treatment that is less invasive, more precise, and can be processed rapidly by collecting peripheral blood from the patients. The real-time sampling of CTCs could provide us with a critical insight into the tumor's molecular structure without resorting to the use of an invasive tissue biopsy, which can be useful in therapy selection and response monitoring in cancer patients. The heterogeneous nature of cancer is associated with inefficient clinical outcomes; therefore, the characterization of CTCs followed by their identification in clinical settings has the potential for use as an effective prognostic and therapeutic biomarker for selecting personalized precision-treatment options, resulting in the improved management of patients with cancer.

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