

EDITORIAL

Editor's foreword to the inaugural issue of *Tumor Discovery*

Mingzhu Yin^{†*}

Department of Dermatology, Xiangya Hospital Central South University, China

In the past century, countless oncology researchers have made great efforts to explore the mysteries of cancer. However, what we know so far is just the tip of the iceberg. Cancer has always been the most difficult hurdle to overcome in the history of human medicine, which is one of the leading causes of morbidity and mortality worldwide^[1] and brings enormous psychological pressure and economic burden to patients. According to the latest global cancer data released by the International Agency for Research on Cancer, there were 19.29 million new cancer cases and 9.96 million cancer deaths in 2020 globally^[2]; the death cases account for 51.6% of new cases. Despite the increasing availability of cancer therapeutic options, such as molecular targeted therapy^[3-5] and immunotherapy^[6-9], millions of cancer-induced deaths were still reported every year^[2,10]. Unfortunately, the pathogenesis of cancers still remains largely obscure, further hampering the efforts to control the prevalence of cancers worldwide.

Tumor Discovery is a peer-reviewed and open-access journal that aims to present new cancer research with strong emphasis on fundamental and translational studies. *Tumor Discovery* covers topics, such as etiology and pathogenesis of cancer, mechanisms and molecular pathways underlying cancer initiation and progression, and tumor metastasis and publishes articles that deepen our understanding of tumor pathogenesis and provide novel ideas for cancer treatment.

In this inaugural issue, five articles spanning across a wide range of topics are published. Tamoxifen (TMX) is the best clinical option for the treatment of breast cancer, which may, however, trigger major dose-dependent side effects due to its poor solubility. To overcome this difficulty, Majd synthesized targeted magnetic nanoparticles (MNPs) containing folic acid and hyaluronic acid to improve drug delivery of TMX^[11]. The release of 81% TMX after 120 h indicated a controlled pattern of drug release from the modified MNPs. The modified MNPs have the ability to reduce the viability of MDA-MB-231 cells, and the presence of targeting agents and smart delivery of TMX could improve drug efficacy and trigger apoptosis in MDA-MB-231 cells; these findings collectively point to a novel therapy strategy for breast cancer. Moreover, cancer patients may exhibit symptoms of cognitive impairment before, during and even many years after the completion of therapies, negatively impacting the quality of life and functional independence of cancer survivors^[12]. However, many aspects of the association between cancer and cognitive impairment remain uncertain, and the definitive connection between systemic cancer and central nervous system is yet to be established. Therefore, Jiang *et al.* summarized the current evidence on the potential pathophysiology in these patients with cancer-related cognitive impairment (CRCI) and reviewed the knowledge gaps and the potential counteracting strategies, which will provide a theoretical basis for the

[†]Professor Mingzhu Yin is one of the Editors-in-Chief of *Tumor Discovery*

***Corresponding author:**

Mingzhu Yin
 (yinningzhu2008@126.com)

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mechanistic study of CRCI and facilitate the development of detailed diagnostic and therapeutic strategies for such patients^[13]. The relationship between PD-1 expression and prognosis in cancers has been widely reported. Shi *et al.* investigated the clinicopathological and prognostic significance of PD-1 mRNA expression in various cancers based on Kaplan–Meier plotter databases and found that the mRNA expression of PD-1 was associated with the overall survival of gastric cancer, breast cancer, ovarian cancer and liver cancer ($p < 0.05$), relapse-free survival of breast cancer, ovarian cancer and liver cancer ($p < 0.05$), post-progression survival of gastric cancer ($p < 0.05$), and progression-free survival and disease-specific survival of liver cancer^[14]. These results corroborate the role of PD-1 in different cancers and may inspire further investigations that explore PD-1-targeting agents for the treatment of different cancers. Furthermore, single-cell analysis is critical to providing new insights for studying human cancer. Given the important role of monocytes in tumor microenvironment (TME), Fu and Yin reviewed the monocytes in tumor from the perspective of single-cell analysis and summarized the potential of monocytes and their derived cells as diagnostic and therapeutic targets, as well as the interaction between monocytes and immune checkpoint therapies^[15]. The authors proposed that monocytes in TME were quite promising targets for the diagnosis and treatment of human cancers. In addition, a group of physicians reported a case of anti-PD1 immunotherapy for patient with advanced pancreatic cancer^[16]. The survival period of this patient with pancreatic cancer, who was given a combined treatment of surgical resection, chemotherapy, molecular targeted medicine, and anti-PD1 immunotherapy, was more than 6 years since diagnosis. This observation corroborates the potential of immunotherapy in combination with other therapeutic strategies in treating pancreatic cancer.

Finally, the editorial team of *Tumor Discovery* sincerely welcomes submissions from all prospective authors. All submissions will be professionally handled at peer-review stage and speedily processed to reach the target audience.

Conflict of interest

The author declares no potential conflicts of interest.

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