Trends in Immunotherapy (2023) Volume 7 Issue 1
doi:10.24294/ti.v7.i1.2896

EDITORIAL

Editorial review on Vol. 7 No. 1

Zhiling Yu

School of Chinese Medicine, Hong Kong Baptist University, Kowloon Tsai, Hong Kong. E-mail: zlyu@hkbu.edu.hk

ARTICLE INFO

Receive: 20 July, 2023
Available online: 25 July, 2023

The articles in this issue (Volume 7 Issue 1 of *Trends in Immunotherapy*) are mainly review-type articles, and the sources of the articles are mainly scholars in the medical field from all over the world. The content includes research on immune-related diseases such as pulmonary fibrosis, new targeted cancer treatments, breast cancer, lung cancer, allergic conjunctivitis, new methods of allergen-specific immunotherapy, dental 3D printing, and childhood epilepsy. Immunotherapy refers to disease treatments that induce, enhance, or suppress immune responses. This issue discusses new approaches to allergen-specific immunotherapy. Allergen-specific immunotherapy (AIT) is used to treat allergic diseases in which symptoms persist despite the use of medications and allergen avoidance. Sakshi *et al.*[1] highlighted defined molecular approaches to improve the potential of specific immunotherapy using recombinant allergen derivatives, allergen-derived peptides, virus-conjugated allergens, nanoparticles and specific adjuvants. This issue also explores the role of β-hydroxybutyric acid (β-HBA) in energy metabolism in cancer treatment, which can become a new type of targeted cancer therapy according to Jianshe Yang *et al.* from Tongji University School of Medicine[2]. In the article "Screen natural terpenoids to identify potential Jab1 inhibitors for treating breast cancer"[3], the authors explored the inhibitory potential of natural terpenoid inhibitors against Jab1 in breast cancer. The corresponding author, Fahad Khan, is a highly motivated and innovative biotechnologist with specialization in animal cell culture, cancer biology, phytomedicine and molecular biology, with 17,111 Sum of Times Cited referred to WoS. Focusing on lung cancer and the ACE2 receptor, the use of nanomedicine in formulating a novel targeted cancer treatment strategy directed at the ACE2 receptor was elaborated by Sivalingam and Singh[4]. In this issue, the authors Singh *et al.*[5] from India discuss the available treatment options for allergic conjunctivitis and potential targets for treatment based on several previously published studies. They also explore the relationship between conjunctivitis and COVID-19, as well as recent patents and research. In addition, when examining the pathogenesis of pulmonary fibrosis, Engin and Özdemir[6] from Turkey found that cell senescence plays an important role. Lung fibroblasts play an active role in the regeneration process; despite this useful information, the pathogenesis of pulmonary fibrosis is unclear and remains to be explored in future studies.

Dendritic cells (DCs) play a crucial role in integrating innate and adaptive immune responses and are considered the most efficient professional antigen-presenting cells (APCs). The presence of DCs in lymphoid tissue and peripheral blood is critical for antigen-specific immune responses. The development of effective DC vaccines has been hampered by various challenges; however, the emergence of nanomaterials, especially graphene oxide (GO), offers promising avenues to enhance the efficacy of DC vaccines. Through a comparative analysis of relevant literature and research, Mohamed *et al*.[7] concluded that the potential of GO and its functionalized derivatives as adjuvants for vaccine formulations is huge because they can enhance vaccine stability, antigen delivery, and immune responses. However, solving several of the above clinical translational challenges requires interdisciplinary collaboration among researchers, clinicians, and regulatory agencies. In another field, dentistry, 3D printing technology has been expanding its use in experimental, clinical and educational applications in medicine and dentistry. It is a promising clinical tool because it can demonstrate how a treatment works[8].

Epilepsy is one of the most common diseases of the central nervous system (CNS), in which abnormalities in CNS electrical pathways can lead to cognitive impairment and epileptic seizures. Epilepsy is considered the third most common chronic brain disorder, affecting 0.5%–1.0% of the general population. A recent systematic review estimated that 19.8 deaths per 1,000 people with epilepsy occur each year. Although synchronized firing and inappropriate overexcitability of a group of neurons have been shown to cause epileptic seizures, the exact factors that cause this to occur remain unclear. Together with his colleagues, Brandon Lucke-Wold from University of Florida studied the association of anticardiolipin antibodies (aCL) with the development and characteristics of childhood epilepsy. They concluded that aPL (aCL/IgG) levels in epileptic children were significantly higher than age- and gender-matched healthy controls, and patients who had an adequate response to IVIg treatment were significantly higher than those who did not respond[9]. Therefore, screening for aCL may help promptly diagnose epilepsy and initiate appropriate treatment.

For more details, please read the articles in this issue. We expect more cutting-edge results to be released.

Conflict of interest

The author declares no conflict of interest.

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