EDITORIAL

Azoles in Anticancer Research: Rational Approaches, Design Strategies, Recent Insights and Future Perspectives

Nowadays, cancer has gradually become the leading cause of death worldwide and seriously endangering the health and life of humans for a long period [1, 2]. It has been reported that cancer can be caused by one of the three ways, namely, incorrect diet, genetic predisposition and environmental contaminants [3-5]. Consistent efforts have been made to fight against this disease in the past few years as a result of advancements in cellular and molecular biology leading to the development of potent anticancer agents capable of targeting the cancerous tissues with minimal side effects [3,6]. Natural products appreciably contribute to the development of a large number of anticancer drugs. About 50% of all anticancer drugs approved internationally are either natural products or natural product mimics and were developed on the basis of the knowledge obtained from small or macromolecules existing in nature [7-9]. Recently, various azole derivatives have attracted extensive consideration in the field of anticancer drug discovery and related issues [10-12]. Viewing the importance of natural products as well as azole containing pharmacophores in the field of cancer research [13, 14], the present thematic issue is mainly focused on the recent design, rational synthesis and development of new chemical entities which bear azole moiety exhibiting anticancer potential.

In this special issue of Anticancer Agents of Medicinal Chemistry entitled "*Azoles in anticancer research: Rational approaches, design strategies, recent insights and future perspectives"* I, as Editor, have intended to select relevant work from worldwide leaders on this hot topic including Prof. Kamal (King Abdulaziz University, Saudi Arabia), Prof. Lal (Guru Jambheshwar University of Science & Technology, Hisar, India), Prof. Baig (Yeungnam University, Gyeongsan, Republic of Korea), Prof. Sharma (Maharishi Markandeshwar University, India), Prof. Losurdo (University of Bari, Italy) and Prof. Jain (Guru Nanak Dev University, Amritsar, India).

Kamal *et al.* [15] provides an overview about the use of azoles containing natural products, especially from oxazoles, thiazoles and carbazoles classes that has been reported for their anticancer potential. Lal *et al.* [16] summarizes the recent progress on the development of 1,4-disubstituted 1H-1,2,3-triazole as novel anticancer chemotypes with high therapeutic indices. This review includes articles published from 2010 onwards. Baig *et al.* [17] highlighted some areas of current interest in context to azoles and their derivatives in cancer prevention and treatment. Sharma *et al.* [18] described the dual role of carbendazim as a fungicide and an anticancer agent. Also discussed about the harmful effects of carbendazim and emphasize upon the need for more pharmacokinetic studies and pharmacovigilance data to ascertain its clinical significance. Losurdo *et al.* [19] emphasized on the role of histamine in the development of Colorectal Cancer, but its effect might be mediated by an imperfect homeostasis of its receptors. In current scenario, HR2A could inhibit carcinogenesis whereas HR2 might act as a pro-carcinogenetic, while HR1 and HR4, being suppressed in CRC, may antagonize neoplastic development. Jain *et al.* [20] described synthesis and anti-cancer potential of 4-aryl /heteroaryl-4*H*-fused pyrans.

As a guest editor I deeply hope this special issue will be able to attract the attention of many readers globally as well as introduce many others in the interesting world of azoles based anticancer agents. I wish my special thanks to Michelle Prudhomme, the Editor in Chief, as well as Noushaba Azher, the Managing Editor, and all the contributing authors who have passionately responded to my request to provide interesting articles. I additionally extend my thanks to all my peer reviewers for their valuable time and proficiency in revising individual contributions to a high level of quality. With this I sign off by reminding you to send feedbacks to editorial with your critiques and communiqués.

With best wishes for an enjoyable reading.

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