

Special Issue

Impact of Chronic Substance Exposure on Hematopoiesis and Immunity

Message from the Guest Editors

Substance use profoundly alters immune cell function and hematopoiesis, disrupting both innate and adaptive responses. Alcohol, nicotine, and illicit drugs can impair hematopoietic stem and progenitor cell differentiation, leading to imbalances in myeloid and lymphoid lineages. Chronic exposure often skews hematopoiesis toward myelopoiesis at the expense of lymphopoiesis, contributing to reduced adaptive immunity and increased susceptibility to infections. In parallel, immune cells exhibit functional impairments, as evidenced by the defective phagocytosis and oxidative burst of neutrophils and macrophages, as well as increased production of proinflammatory mediators. Collectively, these changes compromise host defense, increase vulnerability to pathogens, and contribute to long-term immune dysregulation. Therefore, this issue will explore how substance exposure affects the differentiation of hematopoietic stem and progenitor cells, impacts blood or tissue-resident immune cells, alters immunity, and increases the risk of immune-related complications.

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Cells has become a solid international scientific journal that is now indexed on SCIE and in other databases. We have successfully introduced a special issues format so that these issues serve as mini-forums in specific areas of cell science. *Cells* encourages researchers to suggest new special issues, serve as special issues editors, and volunteer to be reviewers. Our main focus will remain on cell anatomy and physiology, the structure and function of organelles, cell adhesion and motility, and the regulation of intracellular signaling, growth, differentiation, and aging. We are open to both original research papers and reviews.

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