



Introduction to a review series on megakaryopoiesis and platelet production

Megakaryocytes contribute to multiple processes in the body, including platelet production and regulation of hematopoietic stem cells. Therefore, it is not surprising that alterations in this lineage not only affect platelets but also impact hematopoiesis in other ways. Fortunately, our understanding of megakaryocyte biology has increased significantly with the advent of advanced technologies such as next-generation sequencing and sophisticated microscopy.

In this review series, experts in the field highlight several aspects of thrombopoiesis, ranging from ontogeny to inherited thrombocytopenia. The series includes the following review articles:

- Patricia Davenport, Zhi-Jian Liu, and Martha Sola-Visner, "Fetal vs adult megakaryopoiesis"
- Julia Tilburg, Isabelle C. Becker, and Joseph E. Italiano, "Don't you forget about me(gakaryocytes)"
- Hervé Falet, Leonardo Rivadeneyra, and Karin M. Hoffmeister, "Clinical impact of glycans in platelet and megakaryocyte biology"

- Julia T. Warren and Jorge Di Paola, "Genetics of inherited thrombocytopenias"

Several themes emerge from these reviews. First, characterizing the heterogeneity of megakaryocytes and their location within the body is an emerging area of research that challenges historical models. Second, our understanding of the genetic and environmental features that contribute to megakaryocyte disorders, in particular inherited thrombocytopenia and transient abnormal myelopoiesis, has increased significantly in recent years. Third, recent studies have shed important new insights into the mechanisms leading to proplatelet formation and the role of glycans in megakaryocyte and platelet biology. We hope this review series stimulates further investigation into strategies to improve platelet production and ameliorate pathologic conditions of this fascinating blood lineage.

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