



The 65th ASH Annual Meeting Abstracts

ONLINE PUBLICATION ONLY**301.VASCULATURE, ENDOTHELIUM, THROMBOSIS AND PLATELETS: BASIC AND TRANSLATIONAL****The Bone Marrow Is the Primary Site of Thrombopoiesis**

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Megakaryocytes (MKs) are large cells predominantly residing within the bone marrow, generating thousands of platelets in an elaborate proplatelet formation process. Megakaryocytes, defined by their expression of CD41, have been observed in the bone marrow and distant organs such as the spleen and lung. However, whether these megakaryocytes genuinely contribute to the mature platelet pool remains controversial. Here, we aimed to delineate which organs participate in platelet production, which mechanisms affect platelet release, and how to define alternative tissue-dependent functions of megakaryocytes. Flow cytometry data revealed significantly higher numbers of hematopoietic stem and progenitor cells and megakaryocytes in the murine bone marrow compared to spleens or perfused lungs; megakaryocyte counts were also significantly higher in cryosections of the mouse bone marrow, and also significantly increased in the bone marrow compared to spleen and lungs when analyzed by both live cell bi photon in-vivo imaging and ex vivo 3D volumetric imaging (light-sheet). Moreover, megakaryocytes cultured and differentiated from the bone marrow ex vivo had a higher capacity for proplatelet formation than MKs derived from the spleen or lung. Our analysis of previously published murine and human scRNA-seq datasets supports our observations that only a marginal fraction of megakaryocyte-like cells can be found within the lung and spleen and most likely only marginally contribute to platelet production under a steady state.

Disclosures No relevant conflicts of interest to declare.

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