Skeletons in the Cupboard of Dysfunctional Neutrophils Revealed

Neutrophils are key cells in host defense, playing a broad range of roles, and we would not stay alive in their absence [1–6]. Thus, impaired effector functions of these cells, as exemplified by chronic granulomatous disease, may result in significant immunodeficiencies [7]. The actin cytoskeleton plays important roles in the functions of neutrophils, and mutations can result in impaired motility, signaling, proliferative capacity, and defective antimicrobial host defense. In an excellent and comprehensive review, Evelien Sprenkeler, Steven Webbers, and Taco Kuijpers describe what is known with respect to the effect of these mutations on human neutrophil function [8].

Asthma is one of the most prevalent chronic diseases and is nowadays recognized as highly heterogeneous, requiring individualized treatment [9]. Group 2 innate lymphoid cells play key roles in both allergic and eosinophilic asthma [10]. These cells interact with CD4⁺ T cells that acquire a Th2 profile. In this issue, Wang et al. [11] show that downregulation of miRNA-451a upregulates the proto-oncogene ETS1 expression, contributing to Th2 cell differentiation in asthma. This mechanism could be a future therapeutic target for the treatment of asthma.

Sepsis is a condition that continues to plague individuals worldwide, and the *Journal of Innate Immunity* has published many articles reflecting different perspectives on this “syndrome,” not least in recent years [12–15]. Yang et al. [16] present a study in this issue, showing that

double-stranded RNA-dependent kinase R (PKR), an intracellular sensor of viral infection, plays a key role in host defense during polymicrobial sepsis. PKR deficiency or inhibition markedly decreased release of the key cytokine interleukin (IL)-1 β and impaired IL-1 signaling phenocopied the effect. The findings define a critical role for the PKR-signaling pathway in antibacterial immunity.

Finally, Bleul et al. [17] investigated immunological differences in C57BL/6J- and BALB/c-recipient mouse corneal transplantation models. They could demonstrate strain-dependent differences and C57BL/6J-recipient mice might be particularly suited to study corneal graft rejection. A mouse may thus not simply be a mouse.

This is the first issue of *Journal of Innate Immunity* in 2021, and as always, we hope it will provide interesting articles to the readership of the journal. We also hope that during 2021, the tide will turn with regard to the ongoing COVID-19 pandemic, where hopefully vaccines will relieve the suffering of individuals as well as the burden on society.

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Conflict of Interest Statement

The authors have no conflicts of interest to disclose.

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