

Beyond the NETs

An important recent development regarding neutrophil biology has been the discovery of neutrophil extracellular traps (NETs), which is an additional microbial killing mechanism deployed by neutrophils. First identified by Brinkmann et al. [1] in 2004, NETs are extracellular structures composed of granular and nuclear neutrophil constituents that capture and kill bacteria extracellularly. The production of NETs by neutrophils constitutes a fascinating field of research since many facets regarding the formation of these remarkable structures, as well as their role in physiological and pathological processes, remain to be unraveled.

In this issue of the *Journal of Innate Immunity*, we present a focus on 'neutrophil extracellular traps' that aims to highlight the state of the art in this new area, as well as emerging new concepts about this antimicrobial mechanism. First, an overview that introduces the issue, summarizing key aspects of NET biology, is provided by Medina [2]. Ermert et al. [3] show that the formation of NETs by murine neutrophils is a tool for screening recep-

tor involvement, signaling pathways, and microorganism interactions leading to NET release. The next article, written by Neeli et al. [4], disentangles a comprehensive account of the intracellular circuitry that controls the release of chromatin from neutrophils during the process of NET formation. Lauth et al. [5] demonstrate a role for M1 protein in resistance to the human cathelicidin antimicrobial peptide LL-37, an important effector of bacterial killing within the NETs. The contribution of NETs to biofilm formation by *Haemophilus influenzae* was investigated by Hong et al. [6], using an experimental chinchilla model of otitis media. Finally, Oehmcke et al. [7] provide evidence that M1 protein, a streptococcal surface protein, in concert with human fibrinogen triggers polymorphonuclear neutrophils to form NETs and that the NETs grant access to binding and activation of the contact system. We hope that you will be similarly enriched by the concepts raised in the articles in this issue as we are, and thank the authors for their contributions.

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References

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