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# REVIEWS

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# APOCs

Examining atypical antigen-presenting cells p719

S.Braddock/NPG

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November 2014  
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## REVIEWS

### 719 Atypical MHC class II-expressing antigen-presenting cells: can anything replace a dendritic cell?

Taku Kambayashi and Terri M. Laufer

Although the MHC class II-mediated modulation of CD4<sup>+</sup> T cell responses is typically associated with dendritic cells, macrophages and B cells, other cell populations are also suggested to show such behaviour. The authors discuss these atypical antigen-presenting cells and question their relevance to immune responses *in vivo*.

### 731 25-Hydroxycholesterols in innate and adaptive immunity

FEATURED ARTICLE

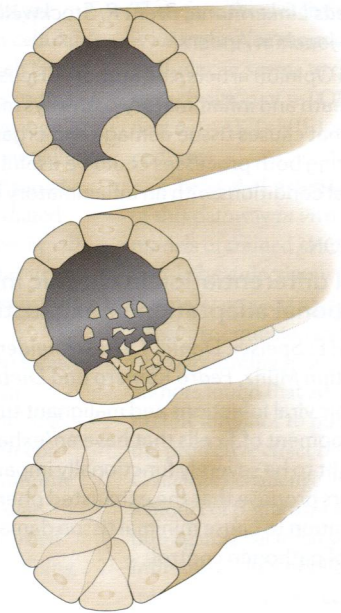
Jason G. Cyster, Eric V. Dang, Andrea Reboldi and Tangsheng Yi

The closely related oxysterols, 25-hydroxycholesterol and 7 $\alpha$ ,25-dihydroxycholesterol, have important functions in innate and adaptive immune responses, ranging from antiviral and inflammation-regulatory effects to a role as a guidance cue for B cells and dendritic cells.

### 744 Innate sensing of malaria parasites

Ricardo T. Gazzinelli, Parisa Kalantari, Katherine A. Fitzgerald and Douglas T. Golenbock

Malaria infections can result in deleterious activation of innate immune cells. In this Review, the authors summarize how the *Plasmodium* parasite is recognized by innate immune receptors, and discuss the role of these receptors in host resistance to infection and in the pathogenesis of malaria.



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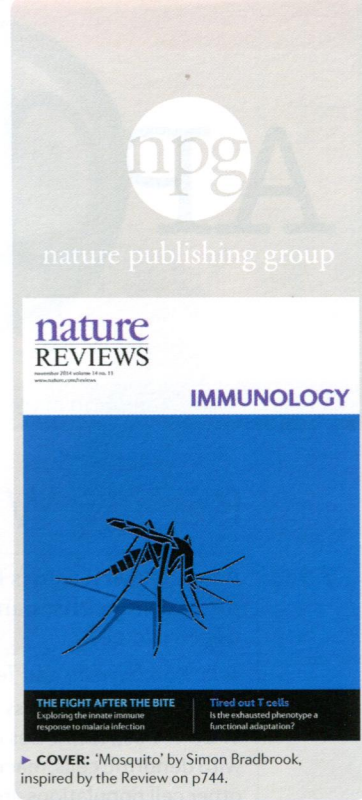
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- 714 TOLERANCE AIREs and graces
- NEONATAL IMMUNITY Babies' T cells can fight
- 715 MICROBIOTA Support your friends to resist your enemies
- 716 NATURAL KILLER CELLS RAG keeps natural killers fit
- PATTERN RECOGNITION RECEPTORS Picking LOX to find antibodies
- 717 NEUTROPHILS Sizing up pathogens

## PERSPECTIVES

### OPINION

- 759 **Regulated cell death and inflammation: an auto-amplification loop causes organ failure**

*Andreas Linkermann, Brent R. Stockwell, Stefan Krautwald and Hans-Joachim Anders*

In this Opinion article, the authors discuss how the induction of regulated cell death and inflammatory pathways may lead to an auto-amplification loop that causes tissue damage and organ failure. They propose that targeting both processes could be useful for treating a broad range of clinical conditions with an inflammatory basis.

### OPINION

- 768 **T cell differentiation in chronic infection and cancer: functional adaptation or exhaustion?**

*Daniel E. Speiser, Daniel T. Utzschneider, Susanne G. Oberle, Christian Münz, Pedro Romero and Dietmar Zehn*

Chronic viral infections and malignant tumours are associated with the development of T cells that have an 'exhausted' phenotype and that are thought to be severely functionally impaired. In this Opinion article, the authors propose that the exhausted phenotype is actually a functional adaptation to cause minimal tissue damage while still mediating a critical level of pathogen control.

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