

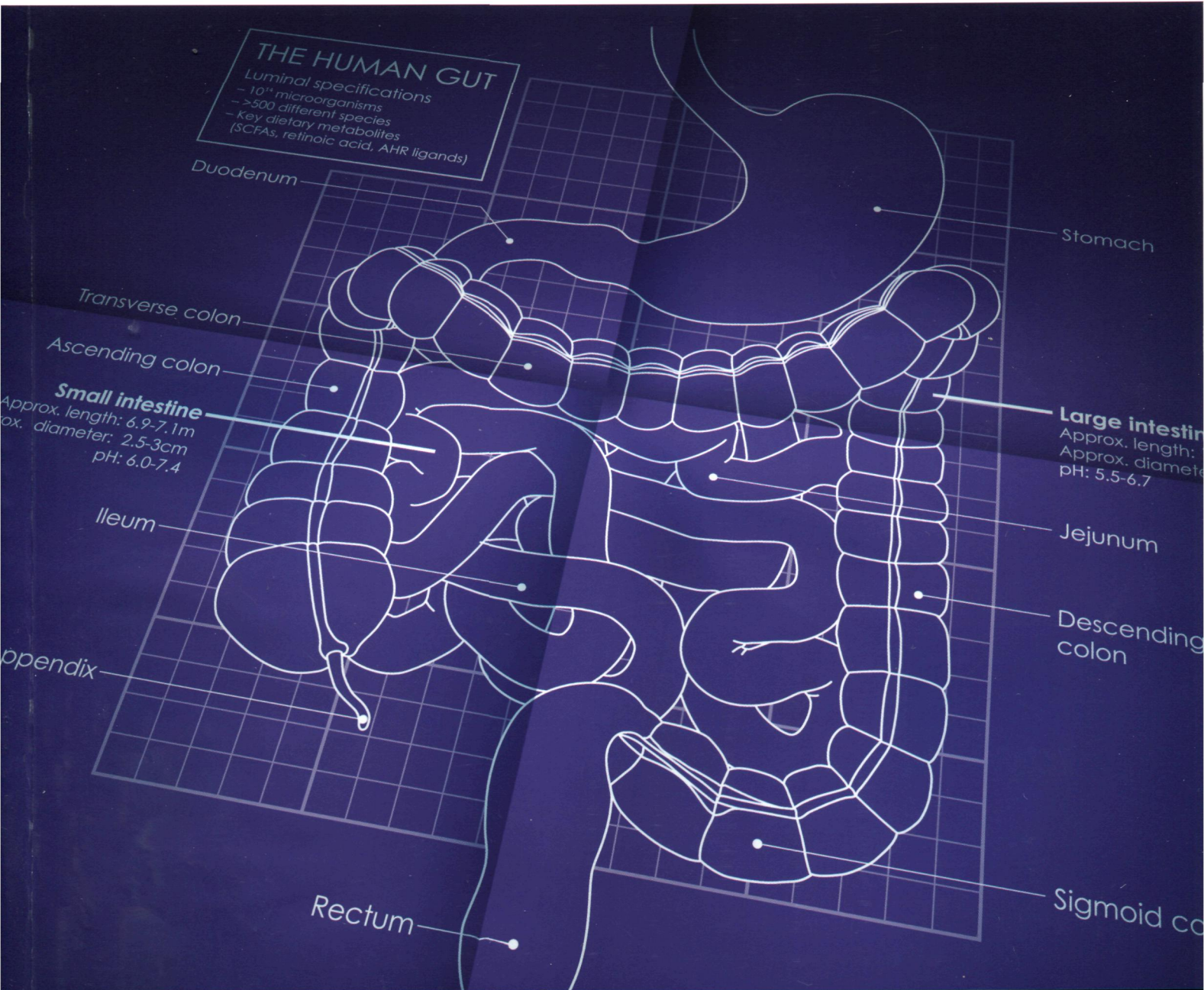
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# Nature

## REVIEWS

October 2014 volume 14 no. 10  
www.nature.com/reviews

# IMMUNOLOGY



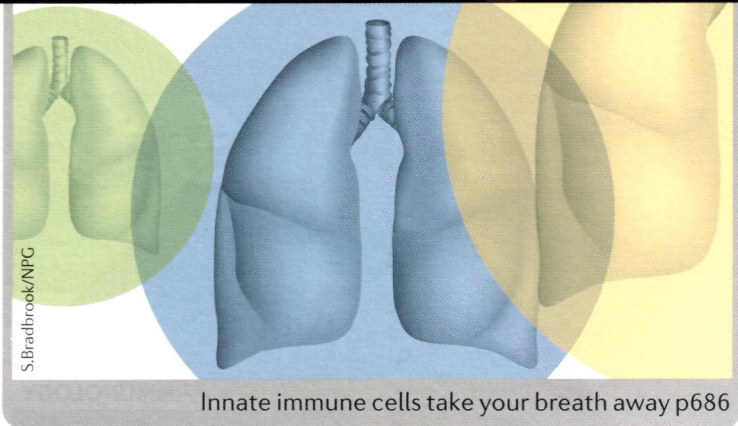
## GUT ARCHITECTURE

Sites and spaces for the intestinal immune system

## Lymphocyte fate diversity

Deterministic or stochastic?





S. Bradbrook/NPG

Innate immune cells take your breath away p686

# CONTENTS

October 2014  
volume 14 no. 10

## REVIEWS

### 653 Siglec-mediated regulation of immune cell function in disease

*Matthew S. Macauley, Paul R. Crocker and James C. Paulson*

Siglecs are sialic acid-binding cell-surface proteins that can help the immune system to distinguish between self and non-self. In this Review, the authors describe how Siglecs can modulate immune cell signalling, outline the role of Siglecs in disease and discuss targeting Siglecs for therapeutic purposes.

### 667 Regional specialization within the intestinal immune system

FEATURED ARTICLE

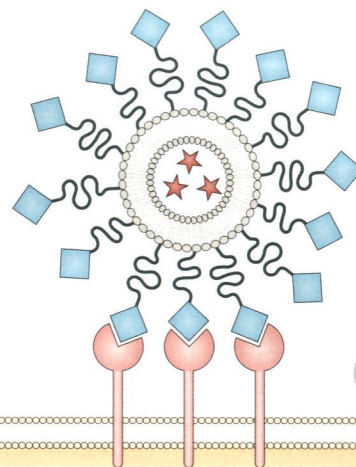
*Allan M. Mowat and William W. Agace*

In this Review, the authors describe the unique and varied immune microenvironments that are found along the length of the intestinal tract. They explain how both host-derived and environmental factors shape this regional specialization and discuss the implications for intestinal pathologies, such as inflammatory bowel diseases and cancers.

### 686 The role of airway epithelial cells and innate immune cells in chronic respiratory disease

*Michael J. Holtzman, Derek E. Byers, Jennifer Alexander-Brett and Xinyu Wang*

This Review details how the activation of airway epithelial cells and innate immune cells can drive chronic diseases of the lungs, such as asthma and chronic obstructive pulmonary disease. The authors discuss how a better understanding of the mechanisms involved is leading to new treatments for these diseases.



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We operate an advance online publication (AOP) service for authors and readers to view the latest articles published online ahead of print.

#### Forthcoming articles:

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*

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

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

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#### Links to further information

The full text of articles includes author biographies, links to glossary terms and links to websites and databases with relevant information.

**Key points** provides a bullet-pointed summary of the main topics covered in each article.

#### E-alert table of contents

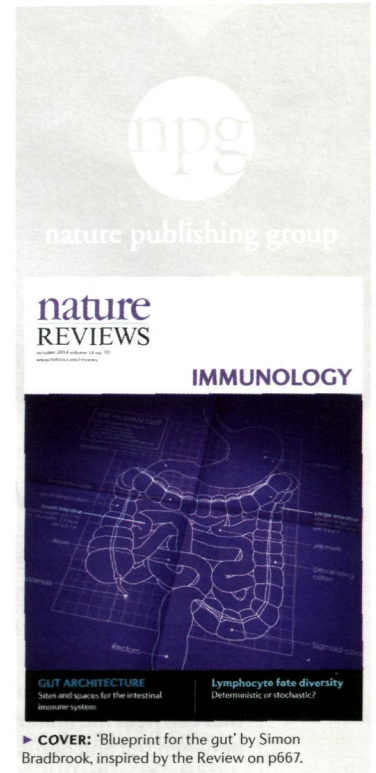
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## RESEARCH HIGHLIGHTS

- 647 T CELL MEMORY Warning — here comes a pathogen!
- 648 IN BRIEF Regulatory T cells | Immunogenetics | Macrophages
- PATTERN RECOGNITION RECEPTORS Binding mycobacterial sugars
- NATURAL KILLER T CELLS Lyme scaled back
- 649 DENDRITIC CELLS The true face of migratory DCs
- 650 IN THE NEWS Tackling Ebola
- SIGNALLING BCL-6 curbs glycolysis
- MICROBIOTA A 'natural' vaccine adjuvant
- 651 IMMUNE SIGNALLING Waste sorting

## PERSPECTIVES

### OPINION

- 699 Lymphocyte fate specification as a deterministic but highly plastic process

Steven L. Reiner and William C. Adams

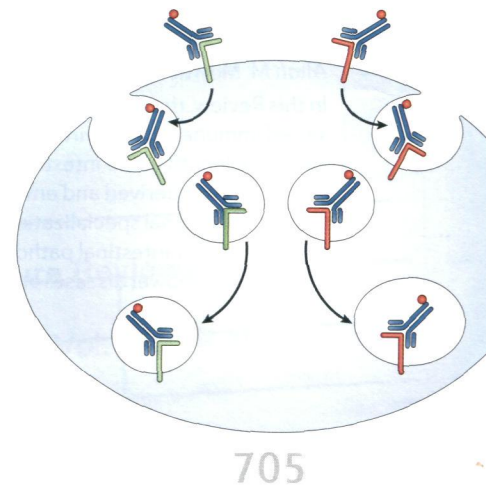
Reiner and Adams propose a deterministic scenario for diversifying the fates of the cellular progeny of a single antigen-selected lymphocyte, with an element of plasticity based on the nature of the pathogen and the number of responding cells.

### OPINION

- 705 Dendritic cell-targeted vaccines — hope or hype?

Wolfgang Kastentmüller, Kathrin Kastentmüller, Christian Kurts and Robert A. Seder

Studies in mice indicate that targeting antigens to dendritic cells (DCs) can elicit strong CD4<sup>+</sup> T cell responses. In this Opinion article, the authors summarize the existing DC-targeting approaches; they discuss whether these vaccines are superior to current vaccines and what future studies should entail to successfully introduce these vaccines into a clinical setting.



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