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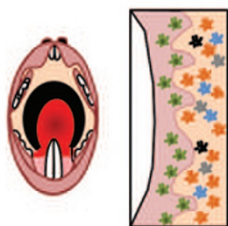
Targeting mucosal healing in IBD

Markus Neurath provides a scholarly update of novel approaches for achieving mucosal healing in patients with inflammatory bowel disease (IBD).

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Lung immunization for tuberculosis

Peter Beverley and colleagues discuss the recent failure of the parenteral MVA85A vaccine against *Mycobacterium tuberculosis* infection in infants. They argue that, by enhancing resident memory T-cell populations, local lower respiratory tract immunization may be important for successful vaccination. See page 20



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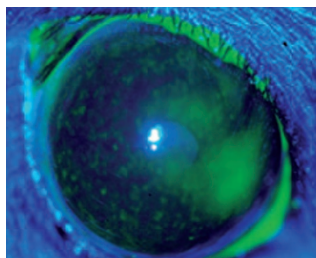
DCs of the oral mucosa

Avi-Hai Hovav provides an overview of the phenotype and distribution of dendritic cells (DCs) in the oral mucosa, and discusses their possible role in immunity and pathological inflammation.

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Th17 cells and dry eye disease

Yihe Chen and colleagues demonstrate a role for T helper type 17 (Th17) cells in a model of chronic dry eye disease in mice. See page 38



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Vaginal anti-HIV IgG protects against SHIV

Christiane Moog and co-workers found that vaginal application of several immunoglobulin G (IgG) antibodies with Fc γ receptor-dependent

inhibitory activity against HIV can block vaginal simian/HIV (SHIV) transmission in nonhuman primates. See page 46

Mal mediates barrier integrity

Sinéad Corr *et al.* identified a role for MyD88 adapter-like (Mal) in maintaining intestinal barrier integrity via protein kinase C-mediated effects on epithelial cells. See page 57

TLR5 enhances T-cell activation

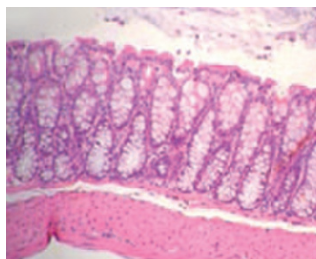
Shaikh Atif and co-workers demonstrate that dendritic cell Toll-like receptor 5 (TLR5) enhances the expansion of flagellin-specific T cells to low antigen doses via a mechanism that is independent of NLRP4 and MyD88. See page 68

TLR agonists enhance lung epithelial cell defenses

Jeffrey Cleaver and colleagues show that local application of Toll-like receptor (TLR) 2/6 and 9 agonists protects against lethal pulmonary bacterial infections by activating epithelial cells' innate defenses. See page 78

Alveolar macrophages targeted for influenza vaccination

Douglas Macdonald and colleagues describe the induction of long-term CD8⁺ memory T-cell responses against influenza in mice via the transduction of alveolar macrophages with a lentiviral vector expressing influenza nucleoprotein. See page 89



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DCs produce IL-22BP in response to retinoic acid

Jerome Martin and associates demonstrate that interleukin-22 binding protein (IL-22BP) is produced primarily by conventional dendritic cells (DCs) in the steady state, including CD103⁺CD11b⁺ DCs in the intestinal lamina propria, and can be induced by retinoic acid. [See page 101](#)

interleukin-23 (IL-23) signaling promotes innate colitis by virtue of its ability to drive IL-22 production from type 3 innate lymphoid cells.

[See page 143](#)

Alveolar macrophages activate DCs after allergen exposure

Jean-François Lauzon-Joset and colleagues provide evidence that the activation state of alveolar macrophages can affect lung dendritic cell (DC) antigen uptake and migration as well as T helper type 2 cell polarization following allergen challenge. [See page 155](#)

N. gonorrhoea induces Tr1 cells

Yingru Liu and colleagues found that *Neisseria gonorrhoeae* induced interleukin-10-producing type 1 regulatory T (Tr1) cells that inhibited adaptive immune responses in a mouse model of infection. [See page 165](#)

Pleurocidins and mast cell activation

Priyanka Pundir and co-workers determined that the antimicrobial peptide pleurocidins can activate human mast cell activation via the FPRL1 receptor.

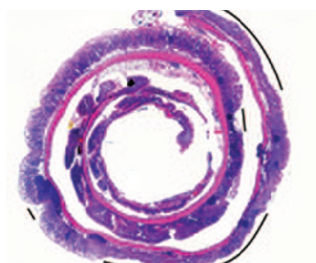
[See page 177](#)

Basophils regulate T cell-mediated colitis

Manuel Rodriguez Gomez and colleagues demonstrate a novel role for basophils in the control of T cell-mediated colitis, probably as a result of their suppression of cytokine production by pathogenic T cells. [See page 188](#)

HIF-1 α and barrier function

Simon Keely and colleagues observed that pharmacological stabilization of hypoxia-inducible factor (HIF) through prolyl hydroxylase inhibition results in enhanced intestinal barrier function as well as protection against systemic bacteremia following epithelial cell damage. [See page 114](#)



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Depletion of Th22 cells in UC

Jacqueline Leung and co-workers provide evidence that increased transforming growth factor- β production in inflamed tissues from patients with ulcerative colitis (UC) may deplete local T helper type 22 (Th22) cells and affect the intestinal microbiome. [See page 124](#)

$\gamma\delta$ IELs in mucosal healing during colitis

Terrence Meehan and colleagues demonstrate that CD100-mediated signals are critical for effective activation of intraepithelial $\gamma\delta$ T cells ($\gamma\delta$ IELs) to produce growth factors, including keratinocyte growth factor-1, that are required for healing of the colonic epithelium during colitis. [See page 134](#)



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IL-22 in innate colitis

Ahmet Eken and coinvestigators report that