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Immunity to bacteria in the bladder

Molly Ingersoll and Matthew Albert review many aspects of innate and adaptive host immune responses to bacteria at the bladder mucosa, including both uropathogens and bacillus Calmette–Guerin, when used as immunotherapy for bladder cancer. [See page 1041](#)

$\gamma\delta$ T cells in rhinovirus-induced asthma

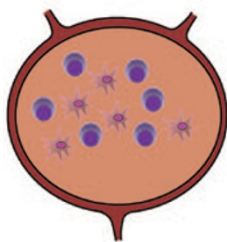
Nicholas Glanville and colleagues provide evidence from both mouse models and experimental human infection that $\gamma\delta$ T cells suppress inflammation and disease during exacerbations of rhinovirus-induced asthma. [See page 1091](#)

NKT cells in immunity and inflammation in the lung

Christophe Paget and François Trottein discuss the role of type 1 natural killer T cells in immunity in the lung during acute and chronic inflammation as well as in immunity to infection. They also discuss the potential for targeting these cells for treatment of human lung disease. [See page 1054](#)

Epithelial cell TLR-1-induced immunity to *Y. enterocolitica*

Yui Sugiura and co-workers demonstrate an important role for Toll-like receptor 1 (TLR1)-induced production of CCL20 and recruitment of CCR6⁺ dendritic cells in the induction of mucosal immunity against *Yersinia enterocolitica*. [See page 1101](#)



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Novel cytokine-trap vaccine for HIV

Charani Ranasinghe and co-workers describe the development of recombinant poxvirus-based HIV-1 vaccines that coexpress HIV antigens together with interleukin (IL)-13R α 2 that can temporarily inhibit IL-13 activity, and result in enhanced CD8⁺ T-cell responses.

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Epithelial HIF-1 α is essential for constitutive hBD-1 production

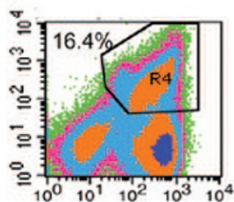
Caleb Kelly and colleagues identified a key role for hypoxia inducible factor-1 α (HIF-1 α) production by intestinal epithelial cells in the constitutive expression of human β defensin-1 (hBD-1). [See page 1110](#)

Menstrual cycle and HIV-1 cervical infection

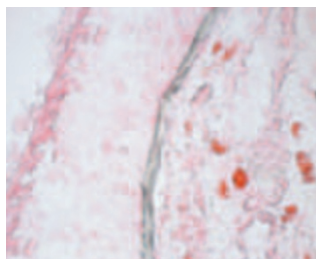
In a study using cervical-tissue explants exposed to R5 HIV-1 *ex vivo*, Elisa Saba and coauthors found that productive infection occurred only with tissue from women in the secretory phase of their menstrual cycles. [See page 1081](#)

Resolvin D1 blocks histamine action in the eye

Dayu Li and co-workers demonstrate that the lipid mediators resolvin D1 and aspirin-triggered resolvin D1 acting through the receptor GPR32 inhibit histamine-mediated responses in epithelial cells in the conjunctiva. [See page 1119](#)



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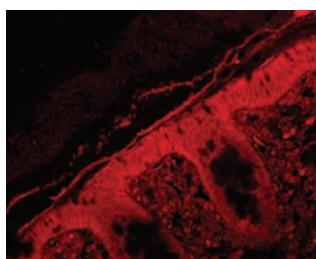
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TWEAK and chronic Th2 colitis

Using a chronic T helper type 2 (Th2) model of colitis, Aoi Son and colleagues found that the tumor necrosis factor–superfamily member TWEAK acts together with interleukin-13 to promote intestinal inflammation and fibrosis. [See page 1131](#)

Th17 cell plasticity

Peter Morrison and associates report a study in *Helicobacter hepaticus*-infected interleukin-10-deficient mice. Using cell-fate mapping, identification of histone modifications, and cytokine transcript changes, the authors determined that colonic T helper type 17 (Th17) cells induced in this setting readily convert into interferon- γ -producing T cells. [See page 1143](#)



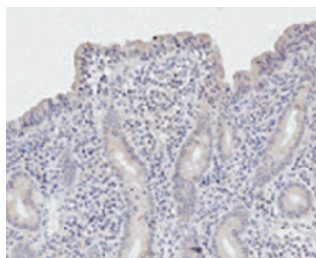
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TSLP influences mutualistic colon T-cell responses

Ilaria Mosconi and colleagues show a role for commensal bacteria-induced thymic stromal lymphopoietin (TSLP) in limiting expansion of T helper type 17 cells and promoting Helios⁺Foxp3⁺ regulatory T-cell accumulation in the colon of mice. [See page 1157](#)

Vaccine adjuvant targets connective-tissue mast cells

Yu Fang and associates demonstrate that cholera 131 toxin and staphylococcus protein A-derived



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CTA1-DD complexed to immunoglobulin G specifically targets connective-tissue mast cells to enhance immune responses after nasal immunization. [See page 1168](#)

Cell-mediated reduction of hBD-1

Simon Jaeger and colleagues demonstrate biochemical reduction and activation of human β defensin-1 (hBD-1) by intestinal cell thioredoxin and describe alterations in this process in patients with inflammatory bowel disease. [See page 1179](#)

CD30/CD30L and $\gamma\delta$ T cells

Xun Sun and colleagues show an important role for CD30L/CD30 interactions in the maintenance of interleukin-17A-producing $\gamma\delta$ T cells bearing V γ 6 in mucosa-associated tissues in mice. [See page 1191](#)

IL-21 predominates in celiac disease

M. van Leeuwen and coauthors identified a prominence of interleukin (IL)-21⁺, but not IL-17A-producing T cells in affected intestinal tissue from the majority of children and many adults with celiac disease and propose that chronic stimulation through Toll-like receptor 3 provokes IL-21 release by these cells. [See page 1202](#)