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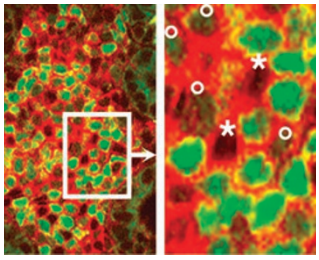

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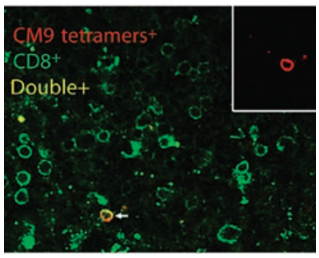
The ROR over the origin of intestinal T cells

Whether intestinal T cells are derived from the thymus or develop locally is an ongoing controversy. Naito and colleagues provide new data supporting an essential role for intra-intestinal T-cell development. Furthermore, they indicate a nonessential contribution by the transcription factor RORγt in intestinal T-cell differentiation, a finding at odds with recently published studies. In a related commentary, Hayday and Gibbons, adeptly place these new findings into context with our current understanding of this complex issue. **See pages 172 and 198**



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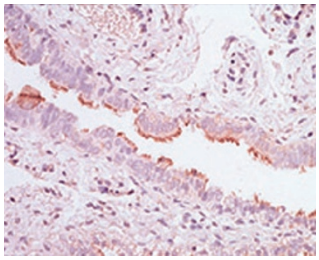
Signaling the end for lamina propria T cells in IBD therapy

Despite advances in our understanding of the pathogenesis of IBD and the introduction of therapies targeted to tumor necrosis factor, there remains considerable unmet clinical need. In this review, Atreya and Neurath outline recent findings indicating that one of the major ways that inflammatory cytokines may contribute to IBD pathogenesis is by enhancing the activation and survival of lamina propria T cells. They go on to describe how novel therapeutic approaches aimed at restoring the susceptibility of these T cells to apoptosis via modulation of the signaling of cytokines such as interleukin (IL)-6, IL-12, and IL-23 may provide more effective and less toxic treatments for IBD. **See page 175**



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On the front line

Linden and colleagues provide a comprehensive review of the roles of that critical component of mucosal immunity: mucus. Mucin glycoproteins are the main structural components of the mucus layer, which provides not only a physical barrier but also a matrix for antimicrobial molecules and commensal flora. This review details the important structural and biochemical components of mucin glycoproteins, how their production is regulated, and how they interact with other innate as well as adaptive immune responses. Also highlighted are mechanisms used by pathogens to subvert this critical first line of mucosal defense. **See page 183**

Cross-protection by intranasal influenza vaccine

Activation of natural killer T cells by intranasal coadministration of α-GalCer with an inactivated influenza vaccine results in enhanced protective immunity in mice. Kamijuku and colleagues demonstrate that this immunization strategy can induce cross-protection against different strains of influenza virus, which may depend on enhanced mucosal IgA production. **See page 208**

Local T-cell responses with lentivirus vaccination

Live-attenuated lentivirus immunization induces consistent protection against intravaginal challenge with SIV. Genescà and colleagues demonstrated that challenge of rhesus macaques with attenuated SHIV induced persistent antiviral CD4 and CD8 T-cell responses in tissues, including the vagina, suggesting that local T-cell responses may be important for mediating long-term protection. **See page 219**

Gonococcal LOS triggers TREM-2

Quan and colleagues describe the unexpected expression of triggering receptor expressed on myeloid cells-2 (TREM-2) on reproductive epithelia, and report that binding of TREM-2 on these cells by gonococcal lipooligosaccharides can trigger signaling events resulting in induction of cytokines that may afford protection from invasion. These studies begin to shed light on the earliest protective mucosal response that might be elicited following exposure to sexually transmitted pathogens such as *Neisseria gonorrhoeae*. **See page 229**

Psoriasin at the tip of your tongue

Although the human tongue is under a constant barrage of insults from living microorganisms, it is resistant to infection. Here, Meyer and colleagues identify the S100A7 protein psoriasin as the dominating factor conferring protection against microbes such as *Escherichia coli*. **See page 239**