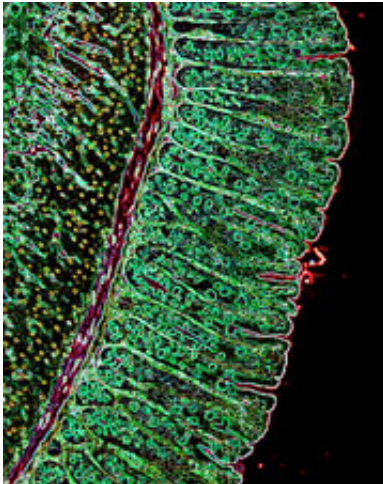


# Immune cells protect body from invaders

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Color-enhanced tissue section from colon of a *C. rodentium*-infected mouse that displays intestinal inflammation characterized by inflammatory cell infiltrates and crypt elongation. Credit: Gregory F. Sonnenberg, University of Pennsylvania School of Medicine

So-called barrier sites -- the skin, gut, lung -- limit the inner body's exposure to allergens, pollutants, viruses, bacteria, and parasites. Understanding how the immune system works in these external surfaces has implications for understanding such inflammatory diseases as asthma, psoriasis, IBD, and food allergies, all of which occur at the body's barriers.

David Artis, PhD, professor of Microbiology at the University of Pennsylvania School of Medicine, and Gregory F. Sonnenberg, a

predoctoral fellow in the Artis lab, have identified an immune cell population that acts as the body's border patrol with the outside world. They discovered that these lymphoid tissue inducer cells maintain immunity in the intestine of mice. The research appeared in the most recent online issue of *Immunity*.

Following [infection](#) by *Citrobacter rodentium* -- a model of human *E. coli* infection in the gut -- this cell population was the dominant source of IL-22, a molecule that helps in the immune response during the early phases of infection. When the inducer cells were eliminated from the intestine of the experimental mice, immunity was impaired, affecting the production of anti-microbial proteins required to fight infection. The mice eventually died.

This discovery could also represent a new line of research for HIV/AIDS, says Artis, since there is a breakdown of barrier immunity in the gut (a reservoir for HIV) that can lead to full blown AIDS. Therapeutics to target such immune [cells](#) could be an important new way to combat AIDS.

**More information:** [www.cell.com/immunity/abstract/S1074-7613\(2011\)02900488-7](http://www.cell.com/immunity/abstract/S1074-7613(2011)02900488-7)

Provided by University of Pennsylvania School of Medicine

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