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► **COVER:** 'Sweet treats' by Simon Bradbrook, inspired by the Review on p874.



ELAINE BELL



LUCY BIRD



KIRSTY MINTON



OLIVE LEAVY



SARAH ALLAN

**M**any immunologists devote much of their time to dissecting the mechanisms used by the host to resist infection. These efforts can provide great insights into disease pathogenesis and are a prerequisite for the development of effective treatments. So, this month we bring you several articles that discuss some of these host mechanisms for resistance to infection.

In the Review article on [page 849](#), the family of tripartite motif-containing (TRIM) proteins is described. Members of this family have a central role in restricting infection by lentiviruses, including HIV-1, but also have broader antiviral and antimicrobial activity due to their involvement in innate immune signalling pathways that are triggered by pathogens.

Recent insights into the regulation of antimicrobial proteins, which provide a first line of defence at the skin and mucosal surfaces, are described in the Progress article on [page 829](#). Although some of these factors are constitutively expressed, new evidence suggests that they can be dynamically regulated in response to environmental stress or invasion by pathogens.

But even with these and other defence mechanisms, pathogens such as herpesviruses can persist indefinitely in the body in a latent form. As described in the Review article on [page 861](#), this can be achieved through mimicry and evasion of host responses by the viruses, and establishes a balance between host survival and viral control.

So, could this balance be seen as a form of tolerance to infection? The concept that immune defence involves not only resistance but also tolerance (that is, the ability to limit the health impact of a given pathogen burden) is presented in the Opinion article on [page 889](#), which also discusses the implications of these two defence mechanisms for the treatment of infectious diseases.

#### EDITORIAL OFFICES

**LONDON** NatureReviews@nature.com  
The Macmillan Building, 4 Crinan Street,  
London N1 9XW, UK

Tel: +44 (0)20 7843 3620;  
Fax: +44 (0)20 7843 3629

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The Macmillan Building, 4 Crinan Street,  
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Fax: +44 (0)20 7843 4596/7

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**NEW YORK** nature@natureny.com  
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