IN BRIEF

HIV

Successful protection

Barouch *et al.* report on the development of a vaccine that protects rhesus macaques against the acquisition of neutralization-resistant simian immunodeficiency virus (SIV). Previous studies have reported successful protection against neutralization-sensitive, but not neutralization-resistant, virus. The new study assessed the efficacy of different prime–boost combinations of the modified vaccinia Ankara (MVA) and adenovirus serotype 26 (Ad26) vaccines carrying the SIV Gag, Pol and Env immunogens. The results showed that, although all animals could eventually be infected by repeated challenge, three of the combinations tested reduced the per-exposure chance of infection by >80%. This study also provides information on the immune correlates of protection, which should be extremely useful in the quest to develop a successful HIV-1 vaccine.

ORIGINAL RESEARCH PAPER Barouch, D. H. *et al.* Vaccine protection against acquisition of neutralization-resistant SIV challenges in rhesus monkeys. *Nature* 4 Jan 2012 (doi: 10.1038/nature10766)

ANTIMICROBIALS

Stressed by HOCl

Hypochlorous acid (HOCl), or bleach, is one of the reactive oxygen species that is produced by neutrophils in response to bacterial infection and is also widely used as a disinfectant. Although much is known about the mechanisms by which HOCl exerts its bactericidal effects, less is known about the bacterial response to the presence of this extreme oxidative stress. Gebendorfer *et al.* found that in *Escherichia coli* the transcription factor YjiE (also known as QseD) forms part of a HOCl stress response. This response is specific for HOCl and is not induced by peroxide or diamide. Analysis of gene expression patterns revealed that YjiE regulates the expression of several genes in response to HOCl stress, including upregulating genes involved in sulphur, methionine and cysteine metabolism and downregulating genes involved in iron acquisition and homeostasis.

ORIGINAL RESEARCH PAPER Gebendorfer, K. M. *et al.* Identification of a hypochlorite-specific transcription factor from *Escherichia coli*. *J. Biol. Chem.* 4 Jan 2012 (doi: 10.1074/jbc.M111.287219)

VIROLOGY

Back to the HSV drawing board

The results of a large-scale double-blind, randomized field trial of a glycoprotein D (gD)-based vaccine against herpes simplex virus type 2 (HSV-2) have been reported in the *New England Journal of Medicine* and, to the surprise of many in the field, have proved disappointing. Previous efficacy trials had shown that, in HSV-discordant couples, the vaccine conferred >70% protection against HSV-2-mediated genital disease in HSV-seronegative women. The current trial recruited 8,323 HSV-seronegative women between 18 and 30 years of age, who were given three doses of either the test vaccine, comprising 20 μg of HSV-2 gD combined with an alum and monophosphorylated lipid A adjuvant, or a control, which was an inactivated hepatitis A virus vaccine. Although the vaccine provided 58% protection against HSV-1-mediated genital disease and 35% protection against HSV-1 infection, only 20% of participants were protected against HSV-2-mediated disease, the primary end point of the trial, and there was no protection against HSV-2 infection. The authors concluded that the failure of this study compared with previous studies could be due to differences in the study populations.

ORIGINAL RESEARCH PAPER Belshe, R. B. *et al.* Efficacy results of a trial of a herpes simplex vaccine. *N. Engl. J. Med.* **366**, 34–43 (2012)