

HPV researchers set sights on preventing skin cancers

A new treatment under development aims to prevent and cure squamous cell skin cancers by targeting the human papilloma virus (HPV). Researchers hope to receive clearance to begin testing the approach in human clinical trials in Australia during the second half of 2009.

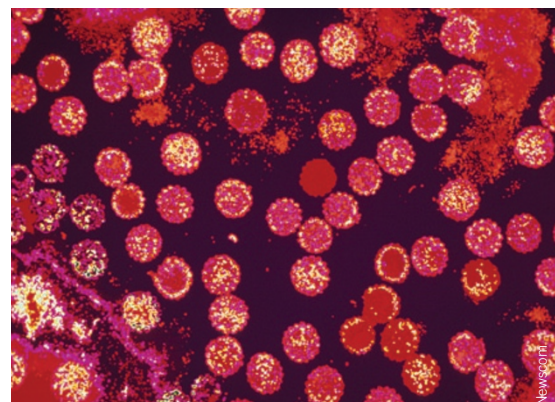
Ian Frazer, who led research to deliver a vaccine for HPV-related cervical cancer, outlined the new work at a November conference in Brisbane, Australia.

The cervical cancer vaccine, commercialized by Merck and GlaxoSmithKline, protects against HPV strains 6, 11, 16 and 18. The new skin cancer research focuses on HPV strains 5 and 8, which have been associated with squamous cell carcinoma for at least 30 years (*Proc. Natl. Acad. Sci. USA* 75, 1537–1541,

1978; *Bull. Cancer* 65, 151–164; 1978.).

Frazer, director of the Diamantina Institute for Cancer, Immunology and Metabolic Medicine at the University of Queensland, acknowledges uncertainty over links between skin cancer and HPV strains carried by most humans. “There are people in the scientific community who believe that virtually no skin cancers are caused by papilloma viruses and others who believe that virtually all skin cancers are caused by papilloma viruses,” he says.

But he adds that “a very large number of papilloma viruses infect normal healthy skin at a low level—we don’t know whether they are passengers that don’t cause any problems or whether they do cause problems.” Frazer explains that HPV strains 5 and 8 are associated with the development of skin cancers in



Unwelcome guest: HPV wreaks havoc

people with immune systems weakened by chemotherapy, transplant medication or other causes. These HPV strains are far less likely to occur in skin cancers in otherwise healthy individuals.

The attempt to target HPV in skin to prevent cancer breaks new ground, says virologist Arno Mullbacher of the John Curtin School of Medical Research at the Australian National University. However, Mullbacher cautions that immune interventions using vaccines as tools have generally achieved very low success rates.

Frazer, who is preparing to apply to the University of Queensland’s ethics committee to conduct phase 1 human trials, believes this is the first attempt to tackle skin cancer by targeting its HPV links. (He is wary of raising hopes for the ‘immunotherapeutic’ treatment, which he estimates could require at least a decade to develop.) Vaccine and adjuvant components will support a biopharmaceutical element that temporarily enables antigen-specific T cells to kill skin cells with HPV-specific antigen markers.

The treatment is designed to stimulate T cells to attack skin cells that have turned cancerous or that are infected with HPV. If it works, it might initially be given to patients whose immune systems are due to be challenged by chemotherapy or other medications, reducing their risk of squamous cell cancer by clearing the HPV strains from their skin.

Frazer says animal studies conducted by his team have suggested that targeting HPV-infected skin might work (*J. Natl. Cancer Inst.* 96, 1611–1619; 2004). A key challenge going forward, however, is to ensure that the treatment does not expose healthy skin to T cell attack.

Simon Grose, Canberra, Australia

Report details scientific self-censoring

Political controversies may exert a ‘chilling effect’ on scientific research, according to a recent study (*PLoS Med.* 5, e222; 2008). The analysis focused on a controversy that began in 2003 when a US congressman, backed by the conservative Washington, DC-based Traditional Values Coalition, criticized HIV-related research grants funded by the country’s National Institutes of Health (NIH), calling them a “waste of taxpayer money.” Joanna Kempner, a professor at Rutgers University and author of the new study, surveyed 82 researchers who received such grants for their work investigating sex- and drug-related behavior or mental health topics. Kempner found that about 51% of the targeted scientists she interviewed had responded to the criticism from Congress by removing controversial words from titles and abstracts in subsequent

grant applications to the NIH between 2003 and 2005. The scientists cited a belief that conservative critics selected their list of grants to target from an NIH database designed to inform taxpayers about scientific findings. The survey also revealed that researchers would rather remove controversial aspects of their work than find another funder: 24% of those surveyed had changed their research agendas and 17% dropped controversial topics completely from subsequent grant applications, including sexual health, abortion and homosexuality.

In an official response to the controversy, NIH Acting Director Raynard Kington said, “I want scientists to use accuracy and precision in their descriptions, so other scientists can understand and perhaps replicate their studies—and not worry what may appeal to the political winds. That’s a dangerous and sad direction.”

According to Kempner, “the real challenge for policymakers is to figure out how to encourage this public voice in scientific decision-making while enabling scientists to submit and conduct innovative studies, even when they may provoke controversy.”

Michael Halpern, manager of the Scientific Integrity Program at the Union of Concerned Scientists, says that it’s appropriate for the government to set general research priorities, but not to micromanage the scientific enterprise.

What to say? Scientists think twice

Genevive Bjorn, Maui, Hawaii

