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the production of actin-rich membrane waves, which open up the holes. — SMH

J. Cell Biol. **173**, 809 (2006).

IMMUNOLOGY

Another Function for AID

Activation-induced cytidine deaminase (AID) plays a pivotal role in the immune system, controlling antibody class switching and generating diversity through somatic hypermutation of immunoglobulin genes. AID is also part of a larger group of deaminases, which include the antiretroviral APOBEC family members.

Gourzi *et al.* explored the possibility that AID might possess a similar capacity for protection against retroviruses and found that cells from mice lacking AID were indeed less able to cope with a replication-deficient form of the transforming Abelson murine leukemia virus (Ab-MLV). In response to infection, AID activity was induced in the bone marrow, extending its territory beyond the B cell germinal center. Furthermore, mice succumbed to transformed B cell tumors more rapidly if they lacked AID, and showed a corresponding failure to control cellular proliferation.

AID activity induced phosphorylation of the cell cycle checkpoint kinase Chk1 and increased the sensitivity of host cells to killing by natural killer (NK) cells by up-regulating NK cell receptor ligands. These observations fit well with a model in which generalized DNA damage caused by widespread AID-induced mutations in transcribed genes prompts both checkpoint arrest and elimination by the immune system. It will now be interesting to see how broadly the scope for AID in protecting host from pathogen might extend. — SJS

Immunity **24**, 10.1016/j.immuni.2006.03.021 (2006).

BIOMEDICINE

Carbs Worth Remembering

The brains of patients with Alzheimer's disease (AD) show an aberrant buildup of oligomeric aggregates of amyloid β peptide ($A\beta$). These aggregates are neurotoxic and are believed by many researchers to be a central cause of the memory loss and cognitive decline that characterize the disease. Hence, interventions that inhibit $A\beta$ oligomerization would be expected to slow or prevent disease progression.

McLaurin *et al.* test this hypothesis in a mouse model of AD by administering cyclohexanehexols,

a group of small carbohydrate-like molecules that had been found in previous cell culture studies to stabilize $A\beta$ in a conformation that precluded its assembly into oligomers. The treated mice showed improved cognitive function and reduced neuropathology, and they lived longer than control mice. The cyclohexanehexols were effective not only in a prevention setting but even when given to mice after the onset of symptoms. These results underscore the pathogenic role of $A\beta$ oligomerization in AD and raise the possibility that derivatives of these compounds, which cross the blood/brain barrier and can be taken orally, may offer therapeutic benefit to patients with the disease. — PAK

Nat. Med. **12**, 10.1038/nm1423 (2006).

NANOTECHNOLOGY

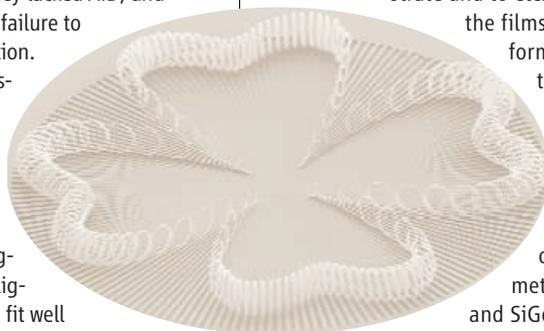
All Wound Up

Nanohelices can be used in micro- and nanoelectromechanical systems as resonators, mechanical components, or sensors. One route for the controlled fabrication of nanohelices is to grow strained heterofilms on a substrate and to etch and release

the films, which then form coiled structures attached to the substrate at one end.

Previously, Zhang *et al.* developed such a method for SiGe and SiGe/Cr films on single-crystalline Si(100) substrates that was limited to helical angles of 45° or more (the maximum orientation mismatch). They now report that as the width of the stripes is decreased below 1 μ m, edge effects lead to tighter pitches and cause the handedness of the helices to reverse (from right to left, through a disordered transition regime); even concentric multiwall rings can be fabricated. Although the Cr layers are isotropic, they change the edge stresses and cause the onset of anomalous coiling (deviation from the preferred <100> scrolling direction) to occur at larger stripe widths. The authors map out the conditions for controlling helical angles to less than 10° and model the relaxation behavior of these films with finite-element simulations. — PDS

Nano Lett. **6**, 10.1021/nl053240u (2006).

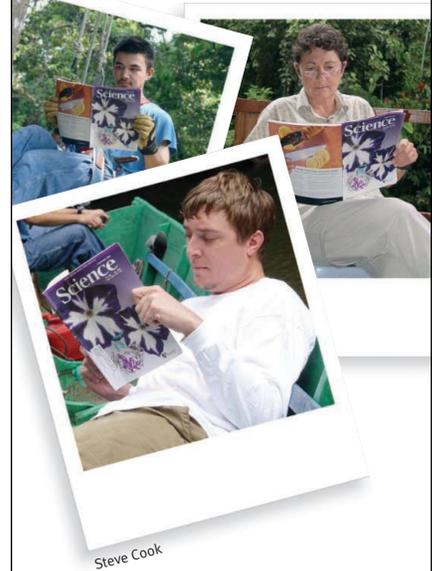


Scanning electron micrograph of Si/Cr bilayers; the similarity of coiling illustrates the dominant effect of the Cr layer over substrate direction.

Q Who's delivering science to every corner of the world?

Chris Bernau

Dr. Dinah Davidson



Steve Cook

“ Sharing one copy of *Science* around our research camp in Brunei requires a plan as systematic as the ants we're studying. On the boat, in a treetop, or on the deck after dinner, we all get our chance to catch up on what's new ” in science.

AAAS members Chris Bernau, Dr. Dinah Davidson, and Steve Cook

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