

## NIH Agency Report to PharmPAC

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### NIH FUNDED RESEARCH

#### **New Vaccine Offers Better Protection Against Tuberculosis**

Scientists have developed a new tuberculosis vaccine that targets proteins from both early and later stages of the disease. The new vaccine, called H56, prevents TB in infected mice more effectively than the current vaccine. These findings offer hope for a better defense against the disease, which kills nearly 2 million people every year. <http://www.nih.gov/researchmatters/january2011/01312011tuberculosis.htm>

**ARTICLE:** C Aagaard *et al.* A multistage tuberculosis vaccine that confers efficient protection before and after exposure. *Nature Medicine*. DOI: 10.1038/nm.2285 (2011).

#### **Alcoholism Treatment Success May Hinge on Genes**

The effectiveness of an experimental treatment for alcoholism depends on the genetic makeup of the people who receive it, according to a new study. The finding may help doctors personalize treatments for people who abuse alcohol. The chemical messenger serotonin plays a vital role in helping brain cells communicate. It mediates many processes in the brain, including the rewarding effects of alcohol. The serotonin transporter protein binds serotonin in the space between brain cells and brings it back into the cell for reuse. A team of researchers led by Dr. Bankole Johnson at the University of Virginia in Charlottesville previously showed that variations in the gene that encodes the serotonin transporter can significantly influence drinking intensity. Specifically, the LL and TT variants were associated with more severe drinking problems. Johnson and his colleagues have also found that the medication ondansetron may be an effective therapy for some people with alcoholism. Ondansetron works by blocking receptors for the serotonin transporter. It is currently used to treat nausea and vomiting, often following chemotherapy. <http://www.nih.gov/researchmatters/january2011/01312011alcoholism.htm>

#### **Antibiotics Best Treatment for Ear Infections in Toddlers, NIH Grantees Find**

Adding new evidence to the debate on the best treatment for middle-ear infections, or acute otitis media, in young children, clinical researchers at the Children's Hospital of Pittsburgh of the University of Pittsburgh Medical Center have found antibiotics to be more effective than a placebo in relieving symptoms. These findings appear in the January 13th issue of the *New England Journal of Medicine*. The study was funded by the National Institute of Allergy and Infectious Diseases, part of the National Institutes of Health. <http://www.niaid.nih.gov/news/newsreleases/2011/Pages/AcuteOtitisMedia.aspx>

**ARTICLE:** A Hoberman *et al.* Treatment of acute otitis media in children under 2 years of age. *New England Journal of Medicine*. DOI: 10.1056/NEJMoa0912254 (2011).

#### **Antibodies Identified after 2009 H1N1 Infection Neutralize Multiple Flu Virus Strains: Findings Offer Clues for Universal Flu Vaccine**

By analyzing blood samples taken from a small group of people infected with the 2009 H1N1 influenza virus, scientists have identified antibodies that can neutralize multiple influenza strains in laboratory experiments and also protect mice from disease. These data add to other evidence suggesting that the development of a universal influenza vaccine may be possible.

<http://www.niaid.nih.gov/news/newsreleases/2011/Pages/H1N1Bcell.aspx>

**References:** J Wrammert *et al.* Broadly cross-reactive antibodies dominate the human B cell response against 2009 pandemic H1N1 influenza virus infection. *Journal of Experimental Medicine*. DOI: 10.1084/jem.20101352 (2011).

#### **Daily Drug Reduces Risk for HIV Infection**

A pill that's currently used to treat HIV infection can also greatly reduce the risk of acquiring HIV among at-risk men. The results, reported in the November 23, 2010, online edition of the *New England Journal of Medicine*, showed that the drug (*emtricitabine and tenofovir*) reduced the risk of acquiring HIV infection by nearly 44%. Specifically, 36 HIV infections occurred among the 1,251 participants who received the antiretroviral therapy, compared to 64 HIV infections among the 1,248 people who received the placebo. <http://www.nih.gov/researchmatters/december2010/12062010hiv.htm>