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Disease Watch

TRACKING ARTEMISININ RESISTANCE

A new study reports the existence of multiple populations of artemisinin-resistant *Plasmodium falciparum* parasites in western Cambodia, a known resistance hot spot. An analysis of genomic variation among 825 *P. falciparum* samples from a range of Asian and African locations revealed that there was higher genetic diversity between subpopulations in western Cambodia than is typically observed between parasite populations on different continents. Interestingly, three distinct artemisinin-resistant founder subpopulations showed evidence of recent expansion and were particularly enriched for SNPs in transporter genes and DNA mismatch repair genes. The discovery of multiple resistant subpopulations in this region suggests that there are several forms of *P. falciparum* resistance, and the identification of genetic markers for resistance is expected to assist malaria eradication efforts.

ORIGINAL RESEARCH PAPER Miotto, O. *et al.* Multiple populations of artemisinin-resistant *Plasmodium falciparum* in Cambodia. *Nature Genet.* 28 Apr 2013 (doi:10.1038/ng.2624)

A CURE FOR THE FLU?

Mice lacking Toll-like receptor 4 (TLR4) have previously been shown to be highly refractory to influenza-induced mortality. Shirey *et al.* now show that the synthetic TLR4 antagonist eritoran (also known as E-5564; Eisai) prevents lethality in influenza-infected mice and significantly reduces lung pathology, clinical symptoms and viral titres, even when administered as late as 6 days after infection. Furthermore, the drug blocks the production of cytokines and oxidized phospholipids, which are associated with influenza-induced inflammation. Together with the favourable safety profile of the drug, these data indicate that eritoran could represent a novel therapeutic strategy for influenza infections.

ORIGINAL RESEARCH PAPER Shirey, K. A. *et al.* The TLR4 antagonist Eritoran protects mice from lethal influenza infection. *Nature* 1 May 2013 (doi:10.1038/nature12118)

OUTBREAK NEWS

H7N9. The number of infections with the H7N9 avian influenza virus strain, which has thus far killed more than 20 people, continues to rise in China. Infections have been linked to exposure to poultry, and although there is little evidence for human-to-human transmission, reports of family clusters are a cause for concern. There are suspicions that many mild infections go undetected, which means that identifying the viral reservoirs and monitoring transmission are difficult. **WHO/BBC News**

Measles. The number of cases of measles in the Welsh city of Swansea has now exceeded 1,000 since November 2012. The epidemic is attributed to the low uptake of the measles, mumps and rubella (MMR) vaccine in the 1990s owing to false claims that it was linked to autism. A catch-up vaccination campaign is ongoing in Wales, and in England one million unvaccinated schoolchildren will now be targeted for preventative measures. **BBC News/*Independent***