



# EuroTravNet

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European Travel and Tropical  
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## EUROTRAVNET SCIENCE WATCH : SEPTEMBER 2009

**Scientific Advances** – Recently introduced *Aedes albopictus* in Corsica is competent to Chikungunya virus and in a lesser extent to dengue virus. Moutailler S, et al. Trop Med Int Health 14: 1105-1109

**Scientific Advances** – Human *Plasmodium knowlesi* infection detected by rapid diagnostic tests for malaria. van Hellemond JJ, et al. Emerg Infect Dis; 15: 1478-1480

**Scientific Advances** – Imported and autochthonous hepatitis E virus strains in Spain. Fogeda M, Avellón A, Cilla CG, Echevarría JM. J Med Virol. 2009 Oct;81(10):1743-9.

**Scientific Advances** – Artemisinin resistance in *Plasmodium falciparum* malaria. Dondorp AM, et al. N Engl J Med. 2009 Jul 30;361(5):455-67.

**Scientific Advances** – Recently introduced *Aedes albopictus* in Corsica is competent to Chikungunya virus and in a lesser extent to dengue virus

Moutailler S, Barre H, Vazeille M, Failloux AB

Trop Med Int Health 14: 1105-1109

#### **Description**

Experimental infections showed that *Aedes albopictus* established in Corsica since 2006, was highly competent to Chikungunya virus variant (E1-A226V) (disseminated infection rates ranging from 75% to 100%) and to a lesser extent, to dengue virus (12.5–68.8%). Moreover, *A. albopictus* ensured a high level of viral replication and was able to transmit the virus as early as 2 days after ingestion of infected blood with around 1 000 viral RNA available in salivary glands.

#### **Link to the article**

<http://www3.interscience.wiley.com/journal/122574046/abstract?CRETRY=1&SRETRY=0>

**ECDC comment:** 2009-09-29

*Aedes albopictus* has been established in Europe for some decades rendering temperate countries vulnerable to tropical diseases. The Italian chikungunya (CHIK) outbreak in the summer of 2007 demonstrated that indigenous transmission of CHIK was possible in Europe. The risk for a local transmission of CHIK is likely in Corsica, if other parameters determining the vector capacity of *A. albopictus* are suitable.

**Keywords :** Chikungunya - France – *Aedes albopictus*

This paper has been selected by Dr Philippe PAROLA (philippe.parola@univmed.fr) from Marseille, France.

## Scientific Advances – Human *Plasmodium knowlesi* infection detected by rapid diagnostic tests for malaria

van Hellemond JJ, Rutten M, Koelewijn R, Zeeman AM, Verweij JJ, Wismans PJ, Kocken CH, van Genderen PJJ

Emerg Infect Dis; 15: 1478-1480

### Description

The authors describe a PCR-confirmed case of *Plasmodium knowlesi* infection with a high parasitemia level and clinical signs of severe malaria in a migrant worker from Malaysian Borneo in the Netherlands. Investigations showed that commercially available rapid antigen tests for detection of human *Plasmodium* infections can detect *P. knowlesi* infections in humans.

### Link to the article

<http://www.cdc.gov/eid/content/15/9/1478.htm>

**ECDC comment:** 2009-09-29

*Plasmodium knowlesi* naturally occurs in long-tailed and pig-tailed macaques in Southeast Asia. However a large number of infected humans in Malaysian Borneo and other countries in Southeast Asia have been reported, and the infection has emerged in returned travellers. Microscopic analysis of asexual stages of *P. knowlesi* can misidentify these parasites as *P. malariae*, but *P. knowlesi* infection can be severe and even fatal. The fact that commercially available rapid diagnostic antigen tests for human *Plasmodium* species can detect *P. knowlesi* infections in humans, is of interest. The different tests commercially available are discussed.

**Keywords : Plasmodium - Malaysia – Borneo – The Netherlands**

This paper has been selected by Dr Philippe PAROLA (philippe.parola@univmed.fr) from Marseille, France.

**Scientific Advances – Imported and autochthonous hepatitis E virus strains in Spain.**

**Fogeda M, Avellón A, Cilla CG, Echevarría JM.**

**J Med Virol. 2009 Oct;81(10):1743-9.**

**Description**

Using three sets of new, hepatitis E virus (HEV) -specific primers, viral genome fragments were amplified from serum samples from 13 patients with acute hepatitis in different regions of Spain. Direct sequencing of these fragments and analysis of sequences lead to identify six genotype 1, six genotype 3, and one genotype 4 viral strains. Genotype 1 sequences were found in the clade with subtype 1a strains, and were amplified from travelers from India and Bangladesh, and from an African immigrant. Genotype 3 sequences were found in the clade with subtype 3f strains, were always amplified from patients who did not travel abroad recently, and were closely related to sequences from swine strains isolated in Spain. The single genotype 4 sequence detected was amplified from a traveler returning from Vietnam.

**Link to the article**

<http://www3.interscience.wiley.com/journal/122565583/abstract?CRETRY=1&SRETRY=0>

**ECDC comment:** 2009-09-30

HEV causes hepatitis E, an acute liver disease displaying diverse epidemiological patterns that correlate with the genetic diversity of the virus. Only a few strains have been characterized to date from cases of hepatitis E in Spain. Hepatitis E is both an imported and an autochthonous disease in Spain.

**Keywords : Hepatitis E virus - India – Bangladesh – Africa – Vietnam – Spain**

This paper has been selected by Dr Philippe GAUTRET (philippe.gautret@ap-hm.fr) from Marseille, France.

**Scientific Advances – Artemisinin resistance in Plasmodium falciparum malaria.**

**Dondorp AM, Nosten F, Yi P, Das D, Phyo AP, Tarning J, Lwin KM, Arieu F, Hanpithakpong W, Lee SJ, Ringwald P, Silamut K, Imwong M, Chotivanich K, Lim P, Herdman T, An SS, Yeung S, Singhasivanon P, Day NP, Lindegardh N, Socheat D, White NJ.**

**N Engl J Med. 2009 Jul 30;361(5):455-67.**

**Description**

In two open-label, randomized trials, the authors have shown that *P. falciparum* has reduced in vivo susceptibility to artesunate in western Cambodia as compared with northwestern Thailand. Resistance is characterized by slow parasite clearance in vivo without corresponding reductions on conventional in vitro susceptibility testing. Containment measures are urgently needed.

**Link to the article**

<http://content.nejm.org/cgi/content/abstract/361/5/455>

**ECDC comment: 2009-09-24**

Artemisinin-based combination therapies are the recommended first-line treatments of falciparum malaria in all countries with endemic disease.. The question emerging from several discussions is "is artemisinin resistance already a reality"? A letter in the same issue of the journal (Noedl H, et al. N Engl J Med. 2009;361(5):540-1.) support this hypothesis. The spread of artemisinin resistance could have a devastating effect on global malaria-control efforts.

**Keywords : Malaria - Artemisinin – Plasmodium falciparum**

This paper has been selected by Dr Bruno Pradines (bruno.pradines@free.fr) from the French Military Institute for Tropical Medicine, Le Pharo IMTSSA, Marseille.