

# Seeking for arbovirus in ticks (TIBO project)

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## **Background**

Ticks species and pathogens transmitted by ticks are poorly documented in Lao PDR. The TIBO project aims to draw up a map of tick species distribution in Laos and explore the putative pathogens they may harbor. Tick identification has been performed in collaboration with the Walter Reed Army Institute for Research/Smithsonian Institute, Washington DC, USA (see medical entomology unit section). Arbovirus screening has been performed by IPL whereas bacterial investigations have been conducted by the Lao-Oxford-Mahosot Wellcome Trust Research Unit (LOMWRU).

A total of 6692 ticks, mainly larvae and nymphs, were collected in two different remote areas. After sorting the ticks by place of capture, stage of development and similarity of morphology, pools of up to 10 specimens were prepared. Specimens representative of the different species were saved for entomological identification. After grinding with specific zirconium bead, total nucleic acids were extracted from half of the samples and subjected to pan-alphavirus or pan-flavivirus RT-PCR. Of the 768 pools tested, 15 were found positive for pan-alphavirus sequences and 3 for pan-flavivirus sequences. Sequencing of amplicons is ongoing to attempt to determine the complex of the virus within the flavivirus and alphavirus genus. These preliminary results shed light on a class of South-East Asian arthropods whose study has been largely neglected, both for their diversity as well as their potential role in pathogen transmission.

