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## Investigation of Hemorrhagic Fever Viruses inside Wild Populations of Ticks: One of the Pioneer Studies in Saudi Arabia

Areej Abdulkareem Al Khalaf<sup>1\*</sup>, Rania Ali Mohamed<sup>1</sup>, Nahla Mohamed<sup>1</sup>, Fadilah Sfouq Aleanizy<sup>2</sup>, Fulwah Yahya Alqahtani<sup>1</sup> and Lamya Ahmed AlKeridis<sup>1</sup>

<sup>1</sup>Princess Nourahbint Abdulrahman University, Kingdom of Saudi Arabia

<sup>2</sup>King Saud University, Kingdom of Saudi Arabia

**Objective:** To screen hemorrhagic fever viruses inside wild populations of ticks collected from Riyadh, Saudi Arabia between January and March 2016.

**Methods:** Ticks were identified depending on their morphological features using classical keys then grouped into pools. Ticks in each pool were processed separately using the sterile pestles and mortars. Viral RNA was extracted using Qiagen RNeasy Mini Kit and Qiagen RNeasy Columns (Qiagen, Hilden, Germany) according to the instructions of manufacturers. A total number of 1, 282 hard ticks were collected, and 582 of them were precisely identified then screened for the presence of arboviruses using quantitative real-time PCR. The four species were screened for six viruses: Rift Valley fever virus (RVFV), Chikungunya virus (CHIKV), Crimean-Congo hemorrhagic fever virus (CCHFV), Alkhurma virus (INKV), Sindbis virus (SINV), and Pan Hanta virus (HANTA). CT value for the negative control (RNA free water) was zero. Negative and positive controls were tested for each test to confirm the specificity of the selected primer pairs. SYBR Green One step RT-PCR Master Mix (KAPA Biosystems, Boston, MA) was tested along with primers.

**Results:** Ticks identification resulted into four species: Hyalommaschulzei, Hyalommaonotoli, Boophiluskdhlsi and Hyalommdromedarii. All the ticks' species (except Boophiluskdhlsi) were positive for the following viruses: SINV, RVFV, CHIKV, and CCHFV. While HANTA viruses have been detected in a single species (Hyalommdromedarii).

**Conclusions:** According to our knowledge this research may be one of the pioneer studies in Kingdom of Saudi Arabia. Incrimination of the above-mentioned ticks species as well as their vectorial capacity is highly recommended for investigation in the upcoming researches.

### Biography:

Dr. Areej Abdulkareem Alkhalaf is associate professor of entomology at Princess Nourahbint Abdulrahman University (Biology department) Riyadh, Saudi Arabia. She is a member in some scientific societies such as Entomological Society of America. She has more than 20 published scientific researches. Her research focuses on insect's biology, histology, behavior, molecular, classification, ecology microbial control and pest management. She participated and attended many of the internal and external conferences in the area of specialization, bio nanotechnology, e-learning, quality, planning, leadership and management. She has held several managerial positions during her career and research. She was the Dean of Scientific Research at PNU. Head of Biology Dept. Vice Head of Zoology Dept. Quality Control Officer. Chairperson of the Environment Committee, Scientific Research Co-coordinator at College of Science, Chief of the Biology Department laboratories.