

## PDIA-093

**A novel indirect hepatitis E virus ELISA: establishment and application for a seroepidemiological study**

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Hepatitis E virus (HEV) is the causative agent of an acute hepatitis in humans. In industrialized countries, autochthonous cases are linked to zoonotic transmission from red deer, domestic pigs and wild boars. The main route of human infection is consumption of contaminated and insufficiently heated meat. Farmers, slaughterers and forest workers are expected to be risk groups as they work close to potentially infected animals.

In this study we tested several *Escherichia coli*-expressed segments of the capsid protein of a German wild boar-derived HEV genotype 3 strain for their diagnostic value in an indirect ELISA. We determined a 285 amino acids-long carboxy-terminal segment as the most useful. Based on this segment an ELISA for detection of anti-HEV immunoglobulin G (IgG) antibodies in human sera was established. A total of 563 sera from forest workers of all forest offices of Brandenburg/Germany and 301 sera of blood donors from Berlin and Brandenburg were surveyed. A commercial recomLine HEV Immunoblot test (Mikrogen, Martinsried, Germany) was used as reference assay. The commercial test revealed seroprevalence rates of 11% for blood donors and 20% for the forest workers, which resemble those obtained by the in-house test (12% and 22%). Hence, the in-house test performed strikingly similar to the commercial test (sensitivity 0.943, specificity 0.924). Future investigations have to prove the performance of this novel IgG ELISA in large scale seroepidemiological studies. In addition, the observed elevated seroprevalence in a forest worker group has to be confirmed by studies of additional forest worker groups from other regions.