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Vaccine to Inhibit Autochthonous Transmission of Hepatitis E (VaccInATE)

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Being a widespread pathogen, Hepatitis E virus (HEV) is the most common cause of hepatitis worldwide. While in Asia and Africa genotype 1 and 2 viruses are endemic, infections in Germany are mainly linked to genotype 3 viruses. Pigs and wild boar are known to be the main reservoir of HEV3 with a prevalence up to 98% in life stocks. Infections are transmitted zoonotically and mostly attributed to consumption of contaminated meat products or close contact to infected animals, leading to estimated 417000 human seroconversions per year in Germany. Usually HEV3 is asymptomatic or causes mild and subclinical courses within healthy patients. However, affecting immunosuppressed individuals HEV3 can trigger a severe acute or chronic hepatitis with liver fibrosis, cirrhosis as well as extrahepatic manifestations, which can all lead to life threatening conditions. 15% of these severe diseases are resistant to available therapeutics. Therefore, the VaccInATE project steps in with the aim to perform a proof-of-concept study to evaluate different vaccination strategies of pigs for HEV. Thus, the transmission of HEV to humans could consequently be prevented - supporting the One Health idea of this application. The second part of the project aims to determine anti-HEV IgG seroprevalence in the population of Pomerania by using blood samples of the well-controlled SHIP cohort (population-based project Study of Health in Pomerania), followed by in depth analysis of antibody profiles. In addition, underlying epidemiological data will be spotted and extrahepatic manifestations identified.