STUDY OF HEPATITIS E VIRUS IN RABBIT POPULATIONS IN BARCELONA

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INTRODUCTION:

Hepatitis E virus is a small, nonenveloped RNA virus that is transmitted via the faecal-oral route [Geng et al. 2010]. In the last years there have appeared cases in which HEV infection has been identified after ingestion of raw meat of some animals, demonstrating zoonotic transmission of the virus, and causing concern in developed countries.

Fig. 1 shows the classification of the virus. *Hepeviridae* family includes two Genera: *Orthohepevirus* and *Piscihepevirus*.

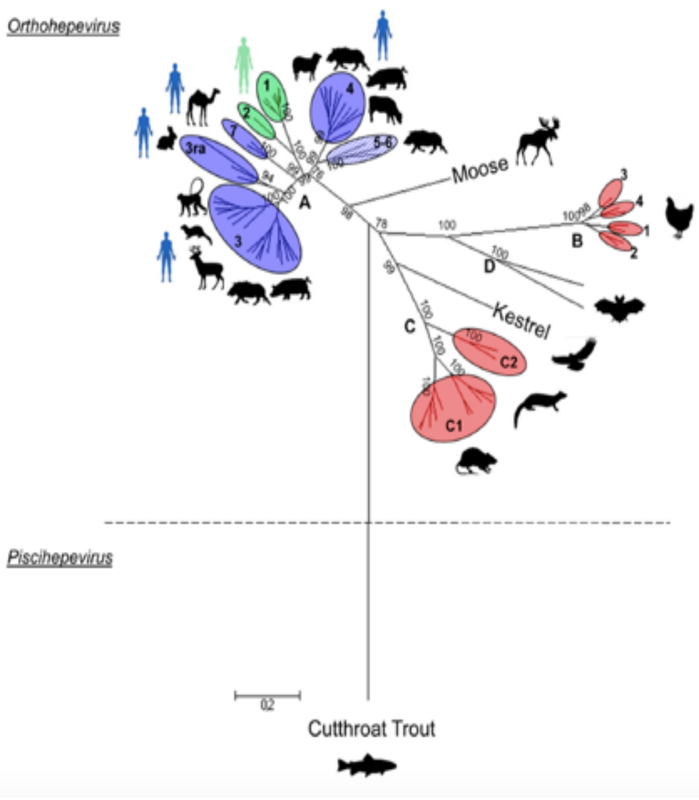

Fig 1. Phylogenetic tree of representative members of the *Hepeviridae* Family [Doceul et al. 2016].

The distribution is worldwide and the main outbreaks are related to genotype 1 and 2 in undeveloped countries. Genotype 3 is found mainly in developed countries [Kamar et al. 2017] and is zoonotic causing an important public health concern. There is a variant of genotype 3 identified in rabbits and it is zoonotic too (3ra).

OBJECTIVES AND JUSTIFICATION:

Main <u>hypothesis</u>: HEV 3ra can be circulating in rabbit population in our region (Barcelona), similarly than other European countries have demonstrated before.

<u>Objectives</u>:

-To determine HEV prevalence in different groups of rabbits: pet, farm and wild.

-To analyse factors that can explain differences, if they exist.

MATERIAL AND METHODS:

The study was performed from September 2019 until March 2020. Seventy-six rabbits were selected for the experimental study (Tab1). To determine the seroprevalence, the samples were analysed by a commercial ELISA. Figure 2 shows the basis of the technique.

Table 1. Summary of the rabbits samples collected for-the study.

Origin	Sera (n)	Faecal (n)	Other samples
Farm 1 (slaughterhouse)	20	20	
Farm 2 (slaughterhouse)	20	20	
Farm 3 (UAB)	5	5	
Vet hospital UAB	30	0	
Necropsy Service (wild)	1 (blood)	1	Liver, muscle

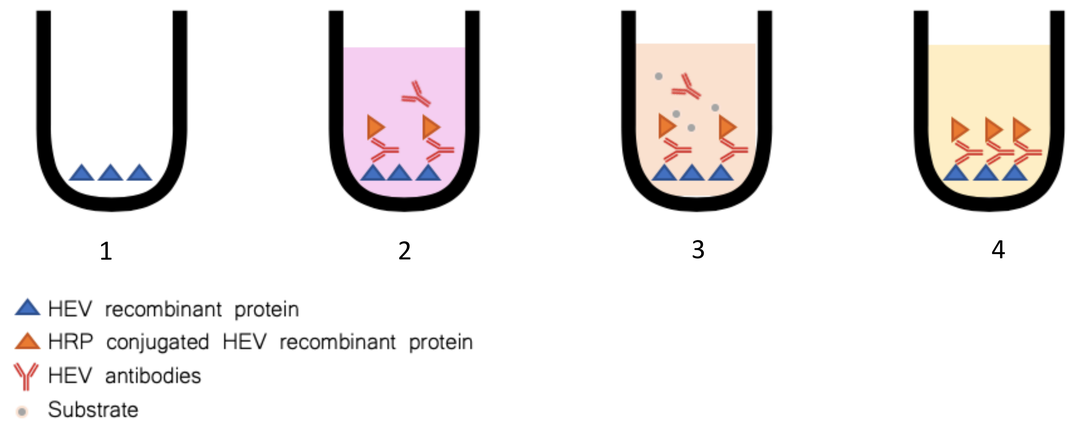

Fig 2. ELISA assay procedure.
1-HEV antigen coated well. 2- Add working conjugate and control sample. Incubate for 60 min at 37ºC. 3- Wash and add substrate. Incubate for 30 min at 37ºC in the dark. 4- Add stop solution. Read absorbance at 450 nm.

RESULTS

Results were below the cut-off (<0.2275) meaning that all were negative.

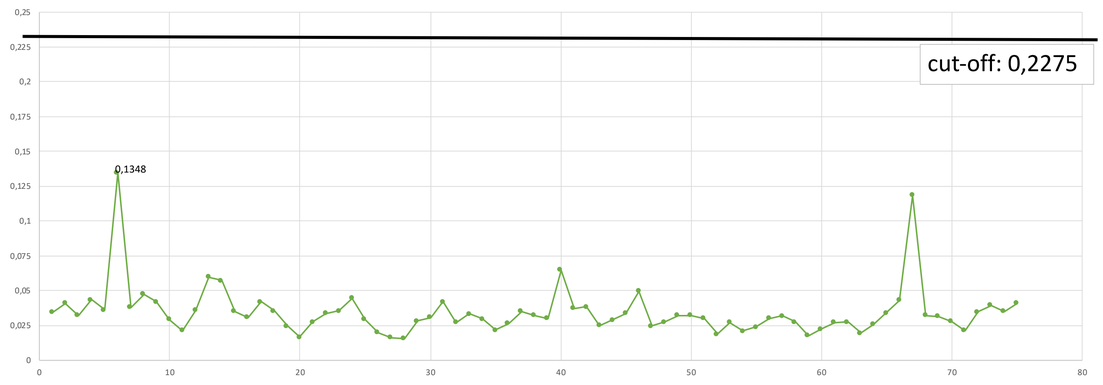

Fig 3. Absorbance of the rabbit samples from ELISA.

CONCLUSION

Although the results of this study have been negative, it cannot be confirmed that the country is free of HEV 3ra. The rabbit population in this study has been very limited and the samples were taken for convenience. The epidemiology of this virus in the rabbit population in Europe deserves to be studied in greater depth and in a greater number of individuals. It is necessary to invest in further studies to know if rabbits can be a reservoir for HEV.