Dottorato di ricerca in Scienze Veterinarie [XXXVI] CICLO - Anno di corso: [2°/3°]Dott. Filippo Maria DiniCurriculum: Sanità AnimaleSupervisor: Prof. Roberta GaluppiCosupervisor: Prof. Monica Caffara

## Exploring Toxoplasmosis in Emilia-Romagna Region: A One Health Perspective on Animal Infections and Public Health

**Objective:** Toxoplasma gondii is a worldwide Apicomplexa protozoon considered one of the most important food-borne parasite globally. The aim of the present project was to carry out an epidemiological study in Emilia-Romagna Region on *Toxoplasma infection* from a One health perspective, assessing the presence of the infection in synanthropic rodents and studying the disease dynamics in beef cattle.

Materials & Methods and Results:

## Count and Fibrinogen T0: 30.6% analysis Sanger Sequencing 44.6% DNA extraction and PCR n=197 18SrDNA of Sarcocystidae Comparative analysis of the heart Effect of positivity on blood analysis n=166 findings LMCV (p<0.05) tongue n=88 n=202 Neutrophil/Lymphocyte ratio Blood and Serum 25% of animals positive for collection at different Sarcocystidae parasites Effect of Ab titer on blood analysis production time: 15% of animals with a equence of 18SrDNA with T0: arrival to the unit high similarity with T. gondii Ab titre Neutrophils T1: 15 days after arrival T. gondii IgG IFAT on sera and Hammondia T2: slaugher (only sera) hammondii samples

Conclusions: The high exposure of synanthropic rodents to *T. gondii/H. hammondii* suggests the important role of these species as environmental indicator of feline-shed oocysts contamination. The findings in cattle contribute to elucidate the complex pathophysiological mechanisms of bovine toxoplasmosis.

Future Proposal: Further analyses will be performed to discriminate *T. gondii* from *H. hammondii* infection in synanthropic rodents and to genotype *T. gondii* positive samples. Regarding beef cattle, direct detection of *T. gondii* on heart samples will be carried out to compare serological results

with molecular ones and to evaluate the risk of beef consumption.

Period Abroad: The candidate is currently spending his period abroad at Saluvet Group (Complutense University, Madrid), focusing his research in *T. gondii* genotyping and quantitative techniques for toxoplasmosis diagnosis.



IgG kinetics: % of seropositive animals

Complete Blood