Research Project Proposal
Academic year 2019-2020

Project Nº 56	
Title: *Molecular characterization of Brucella strains*	
Department/ Laboratory *Microbiology and Parasitology.*	
Director 1 *Raquel Conde-Álvarez* **Contact:** *rconde@unav.es* **Codirector:** *Ignacio Moriyón* **Contact:** *imoriyon@unav.es*	

Summary

Brucella is a genus or gram-negative bacteria that includes zoonotic and non-zoonotic intracellular parasites. Genetically and phenotypically, the genus is very uniform, which makes difficult to identify the *Brucella* species and requires specialized laboratories for fine typing and biovar identification, an information essential in epidemiological studies and in the identification of vaccine strains. Moreover, most species are level 3 pathogens and thus require a biosafety level 3 facility for such typing and identification. However, this requirement does not apply to the manipulation of clinically suspicious specimens that can be manipulated in class 2 facilities provided safety protocols specific for these bacteria are used. Accordingly, methods that could reduce laboratory manipulations during diagnosis and typing would represent a clear advantage over the current methodology. To meet these needs, the aim of the present project is twofold. First, to carry out a molecular typing of a collection of brucellosis vaccines and *Brucella* strains (the latter isolated from animals and infected humans) by means of multiplex PCR, previously developed in this Department and that is being upgraded for an improved vaccine typing. Second, to test the validity of the recently developed MALDI-TOFF methodology for bacterial typing applied to an identification/typing of *Brucella* isolates and vaccines directly either on colonies isolated on selective media or in broth cultures. The necessary equipment as well as Biosafety Level 3 and level 2 facilities are available at the Department.

yes		**Does the project include the possibility of supervised animal manipulation to complete the training for animal manipulator?**
no	**X**	