

Entity: Vall d'Hebron Institut de Recerca (VHIR)

Research group, Unit or Department: Diagnostic Immunology

Student's tutor: Dr. Ricard Pujol Borrell

Positions available: 1

Project description/ Research lines: Research Line: Graves' Disease as a model for understanding autoimmunity

Graves' disease (GD) is a relatively frequent thyroid autoimmune disease that is unusual because of the production of stimulating auto-antibodies to the thyrotropin receptor (TSHR). One outstanding feature of GD is that thyroid tissue is hyperplastic and healthy in spite of progressive lymphocytic infiltration that may contain abundant CD8+ T cells. It is well established that in GD thyroid follicular cells (TFC) overexpress HLA-class I and expresses inappropriately HLA-class II. HLA-class I and -class II are inducible by cytokines that are present in thyroid autoimmune glands. It has been postulated that TFC can present antigen directly to T lymphocytes, and this way contribute to trigger/perpetuate the disease. However, TFC may also inhibit the effect of cytotoxic T cells by expressing co-inhibitory molecules, among them, PD-L1 the ligand of PD1 is the best known and whose expression is inducible.

The objectives of the project are 1) To determine whether PD-L1 and related co-inhibitory molecules are expressed by TFC in normal thyroid and whether its expression is increased in GD. 2) To determine PDL1 expression regulation by TSH and by cytokines in TFC and 3) provide a functional experimental basis to understand the role of TSHR, HLA and co-inhibitory molecule expression by TFC in GD pathogenesis.

This project is a part of the large project "ROLE OF THYROTROPIN RECEPTOR IN THYMOCYTES IN EARLY STAGES OF GRAVES DISEASE AND THYROIDITIS MECHANISMS" funded by the Instituto de Salud Carlos III PI14/00848, to Dr R. Pujol Borrell.

Period for the internship: 2015-16 Academic Year

Requirements:

- Degree in Biology, Biochemistry, Biomedicine, Medicine or related Life Sciences
 - Good command of the English language
 - Be enrolled in the [Master of Advanced Immunology of the UB/UAB](#), the [Master of Translational Biomedical Research](#) of VHIR or the Immunology PhD program of the UAB.
-

Where to apply: Interested candidates please send a letter of intention, CV and academic records to Ricardo Pujol Borrell (rpujol@vhebron.net)
