



## Research Project Proposal

Academic year 2019-2020

### Project Nº 21 ASIGNADO

**Title: Elucidating the Mechanism of HDV-induced liver damage**

**Department/ Laboratory** *Laboratory where the project will be carried out indicating Department, Area, Faculty, CUN, CIMA etc.*

**Gene Therapy for hepatic diseases**

**Gene therapy and regulation of gene expression, CIMA.**

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### Summary

Hepatitis delta virus (HDV) infection induces the most severe form of human viral hepatitis and with the worst prognosis. However, the specific reasons for the severity of the disease remain unknown. It is still no clear whether HDV has a direct cytotoxic effect or it induces an immune mediated damage. Recently, we have developed a HDV replication mouse model in which, for the first time, transaminase elevation and over expression of genes associated with the induction of liver damage was detected.

The goal of this master research project will be to determine the role of the immune response in liver damage.

**METHODS:** HDV and HBV replication competent genomes will be delivered to the liver of mouse hepatocytes using AAV vectors (AAV-HDV/HBV).

Mice deficient in different components of the immune system as well as depletion and pharmacological inhibition studies will be performed to elucidate the causes of HDV-mediated liver damage.

Biochemical and histological analysis will be performed.

Virological markers will be determined by conventional molecular biology techniques.

yes	X
no	

**Does the project include the possibility of supervised animal manipulation to complete the training for animal manipulator?**