



Research Project Proposal
Academic year 2021-2022
Máster en Investigación Biomédica

Project Nº 39	
Title: Synthesis and biological evaluation of new nitric oxide donors as antimicrobial agents	
Department/ Laboratory Laboratory where the project will be carried out indicating Department, Area, Faculty, CUN, CIMA etc. Institute of Tropical Health, Pharmaceutical Technology and Chemistry Department, UNAV.	
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Summary: Nitric oxide (NO) is a potent broad spectrum antimicrobial and part of the body's defense mechanism that is activated by inflammatory cells (neutrophils and macrophages) which are responding to invading pathogens such as bacteria, virus, protozoa, and fungi. The antimicrobial activity of NO is attributed to the reactive nitrogen oxide species (RNOS) that are produced through the spontaneous reaction of NO with oxygen or superoxide that cause damage to DNA, proteins and lipid membranes of microbes. The aim of this work is the synthesis of new NO-hybrids prepared from antimicrobial drugs as well as their <i>in vitro</i> biological evaluation against different <i>Leishmania</i> strains. These novel molecules are expected to exert higher activity than the parent drugs. Some of the methods that the study requires are: Purification techniques (Column chromatography), drug characterization techniques (FT-IR, NMR), cellular culture, parasite culture, MTT assays, Griess assays, RNA extraction or PCR.	
yes	Does the project include the possibility of supervised animal manipulation to complete the training for animal manipulator?
no	