Universidad de Navarra

Máster en Investigación Biomédica
Facultad de Ciencias

Research Project Proposal
Academic year 2015-2016

Project Nº 47
Title: Mechanistic analysis of two new anti-fibrinolytic compounds
Department/ Laboratory Atherothrombosis Laboratory, Program of Cardiovascular Sciences, CIMA.
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Summary Bleeding represents a dangerous complication that can result in the need for blood transfusion and is associated with substantial morbidity and mortality. In trauma patients, severe hemorrhaging is responsible for 50% deaths within the first 24 h, with nearly 3-10% patients requiring massive blood transfusions. Hyperfibrinolysis contributes significantly to major bleeding events and anti-fibrinolytic drugs are extensively used in a variety of clinical settings, such as surgery and trauma, even though their use is currently limited by their reduced efficacy and undesired side effects. A new family of anti-fibrinolytic agents, more efficient and safer than currently available ones (tranexamic acid/TXA and □-aminocaproic acid/EACA), has been developed at CIMA (University of Navarra). This project aims to thoroughly analyze their anti-fibrinolytic activity, using the following methodological approaches: - turbidimetry of human plasma - thromboelastometric analysis of clot lysis, with human blood - thrombolysis assay under flow conditions - plasmin generation activity and TAFI activation - anti-fibrinolytic efficiency in blood samples from patients treated with anticoagulants (vitamin K antagonists and new oral anticoagulants) Results from this project will contribute to a better understanding of the mechanism of action for these new anti-fibrinolytic drugs, still in pre-clinical stage. **References** Orbe J, Barrenetxe J, Rodríguez JA, Vivien D, Orset C, Parks WC, Birkland TP, Serrano R, Purroy A, Martínez de Lizarrondo S, Angles-Cano E, Páramo JA. Matrix metalloproteinase-10 effectively reduces infarct size in experimental stroke by

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POSSIBILITY OF PhD

YES*

* (PhD grant required)