**Research Project Proposal**
Academic year 2019-2020

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| **Project Nº 27** |
| **Title:** Impact of thrombus composition on neurovascular damage in ischemic stroke. |
| **Department/ Laboratory** *Laboratory where the project will be carried out indicating Department, Area, Faculty, CUN, CIMA etc.*<br>*Laboratory of Atherothrombosis*<br>*Programme of Cardiovascular Diseases.*<br>*CIMA-Universidad de Navarra* |
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**Summary**

*The prevalence of stroke, currently the leading cause of morbidity and mortality worldwide, is increasing with the aging of the population. The enormous clinical and socio-economic burden of ischemic stroke (IS), contrasts with the limited therapeutic options: 1) thrombolysis with tissue plasminogen activator, and 2) endovascular thrombectomy to recanalize the occluded vessel. Moreover, despite angiographic revascularization, some patients lack of clinical benefit (futile recanalization). Access to thrombi represents an opportunity to study its components and their impact on recanalization rate, leading to the discovery of new biomarkers and therapeutic targets with clear translational implication. The aims of this study are: 1) to analyse whether the presence of relevant proteins involved in thrombus formation and stabilization (FXIII, NETs, microvesicles (MVs), etc) can condition the recanalization rates and the prognosis (Immunohistochemistry, Flow cytometry); 2) to evaluate the effect of available therapies on ex vivo thrombus lysis(thromboelastometry); 3) to study the transcriptome of thrombus and plasma MVs (RNA-seq) to discover new molecular targets to improve recanalization as well as circulating biomarkers of the thrombus structure usable for an accurate diagnosis, patient stratification and prediction of treatment response. This information will be crucial both for making decisions about the most appropriate procedure for each patient and for the design of safer and more efficient thrombolytic strategies (precision medicine).*

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