

**Research Project Proposal**  
Academic year 2015-2016

<b>Project Nº 7</b>
<b>Title:</b> NEW THERAPEUTIC TARGETS FOR THE TREATMENT OF FIBROSIS IN MYOCARDIAL INFARCTION
<b>Department/ Laboratory</b> Stem Cell Laboratory, CIMA
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<p><b>Summary</b></p> <p>The cardiovascular diseases constitute the greatest health risk in the occidental countries. According with the last inform of the World Health Organization (1), these pathologies provoke at the global level, around 30% of the deaths, equivalent to more than 17 million annual deaths, from which the ischemia is the principal cause. In the case of the cardiac ischemia, the main problem is the lack of an effective regeneration of the myocardium after ischemia, which ends up in an irreversible lost of the cardiac tissue and its substitution by a non-functional scar. Fibroblasts get activated and derive into myofibroblasts, which are the principal mediators of collagen deposit and scar formation (2). Interestingly, epigenetic mechanisms are involved in the fibroblasts-myofibroblasts transition (3).</p> <p>In this project, we will study such mechanisms in a transgenic mouse model WT1-GFP (healthy and infarcted). WT1+ (myo)fibroblasts will be selected and gene/microRNA expression analyzed by microarray. Histological characterization will be performed also in order to determine the mechanisms involved.</p> <p><b>References</b>  <b>(1):</b> <a href="http://www.who.int/cardiovascular_diseases/en">http://www.who.int/cardiovascular_diseases/en</a>  <b>(2):</b> Ruiz-Villalba A. et al. JACC 2015  <b>(3):</b> Ono K. et al. FEBS J 2011</p>
<p><b>POSSIBILITY OF PhD</b></p> <p>YES** (PhD grant required)</p>