



PROGRAMUL DE COOPERARE ELVEȚIANO-ROMÂN
SWISS-ROMANIAN COOPERATION PROGRAMME

Effects of Sex Steroids on Adult Stem/Progenitor Cell Mediated Cardiovascular Regeneration

Starting Date: 01.01.2013

Duration : 36 Months

Discipline : Medical/Biological Science

Main Goals

To facilitate Research & Education in Biomedicine between Switzerland & Romania with Specific Focus on Gender Based Regenerative Medicine. Sex Hormones, estrogens & androgens play a key role in directly modulating adult stem cell induced tissue repair and regeneration following myocardial infarction. As most patients receiving stem cells for cardiovascular repair are older, the low endogenous levels of sex hormones would decrease the potential of stem cell mediated tissue repair. Hence, using human adult stem cells [Progenitor endothelial cells (EPCs) and Mesenchymal cells (MSCs)], the objective of this proposal is to assess the effects of sex steroids on adult stem cell-induced tissue regeneration and define the cellular and molecular mechanisms involved. Our findings will help optimize protocols for stem cell therapy in clinics.

Activities

1: Facilitating the Scientific Experience & Development of Swiss & Romanian Students (2 Romanian PhD Students & 1 Swiss PhD Student) in the rapidly changing scientific environment of across the border interactions; 2: Performing experiments using state-of-the-art approaches to assess the impact of sex steroids on adult stem cells and assessing the potential of their gender specific application in older patients suffering from cardiovascular disease (myocardial infarction); 3: Presenting the findings at International and Local Conferences and preparing the work for publications and potential clinical application; 4; Promoting student exchange for practical experience across borders.

Expected results

Sex Steroids (Estrogens& Androgens) influence the growth of adult stem cells (EPCs & MSCs). Will identify main mechanisms responsible for mediating the regenerative/growth effects of sex steroids on adult stem cells. Expect 3 PhD students (1-SWISS & 2-Romanian) to obtain their PhD degrees on the results obtained at various levels and few publications.

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