

**Título:**

Papel da LCN2 nas alteracións óseas subcondrais de la artrose e novas abordaxes terapéuticas para bloquear a súa indución e outras respostas inmunes innatas nos tecidos articulares.

**Resumen:**

Considering the key role of the subchondral bone in the OA progression and taken into account that LCN2 induction is a major innate immune response (IIR) in other joint tissues. We will study the role of LCN2 in the OA-subchondral bone catabolic and anabolic processes. Likewise, we will also investigate the contribution of the mechanical loading to the regulation of LCN2 in this environment. To do this LCN2 and the expression of osteoblastic marker genes will be measured by RT-PCR during osteoblast differentiation and after stimulation with inflammatory and catabolic factors in MC3T3 or SaOs2 cells as well as in primary human osteoblasts. LCN2 gene expression will also be studied in human osteoblasts in the presence of TGF $\beta$  and IGF-1. The catabolic effect of LCN2 will be studied by measuring its effects on cell viability and MMP-9 activity by MTT assay and gelatin zymography, respectively. LCN2 expression in the bone-cartilage relationship will be analysed by incubating human chondrocytes or osteoblasts with conditioned media from pre-stimulated cells. The mechanical loading effect will be assayed by means of the Flex Cell technology on basal or induced LCN2 expression. Pharmacological inhibition of the IIR in joint cells has been suggested as a therapeutic target to treat OA. Since TLR4 is a master mediator of these responses we will study the anti-TLR4 activity of natural and synthetic compounds.

**Código de expediente:**

CP15/00007

**Investigador principal:**

Rodolfo Gómez Vaamonde

**Entidade beneficiaria:**

Servizo Galego de Saúde

**Centro de realización:**

EOXI de Santiago/Instituto de Investigación Sanitaria de Santiago de Compostela (IDIS)

**Entidade financiadora:**

Instituto de Salud Carlos III

**Financiamento:**

121.500 €



"Una manera de hacer Europa"

**Este proxecto está cofinanciado polo Fondo Europeo de Desenvolvemento Rexional (FEDER). "Unha maneira de facer Europa"**