OSTEOSILK:
Silk/graphene-based biomaterials as scaffolds for orthopaedic surgery and bone tissue engineering

ADRESSED PATHOLOGY: Trauma, bone regeneration

GENERAL OBJECTIVE:

To study the use of silk fibroin (SF) sponges as scaffolds for bone regeneration. Since the properties of this material (biomechanical features, tunable degradation rate and osteoconductivity) have been shown to be highly interesting in this field and might be able to surpass most of the drawbacks associated with collagen, it is proposed to study different surface modifications of the sponges to try to make this material more osteoinductive. Finding a more suitable biomaterial for incorporating it in implantable prostheses or for treating problematic fractures or large bone gaps created by resection can have an enormous beneficial impact on both the patients and healthcare systems.

PARTICIPANTS:

Rick Visser, *LABRET-UMA*
María Luisa González, *AM-UEX*
José Luis Pedraz, *NANOBIOCEL-EHU*

CLINICAL/ EXTERNAL GROUPS:

José Becerra, *LABRET-UMA*
José Luis Cenis Anadón, *IMIDA*

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Bioingeniería, Biomateriales y Nanomedicina

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