

MICROREN:

Development of regenerative therapies for acute kidney injuries based on microfluidic devices filled with microencapsulated cells

ADRESSED PATHOLOGY: Acute renal failure (AKI)

GENERAL OBJECTIVE:

The project targets the improvement of current hemodialysis processes towards the achievement of a bioartificial kidney. To this end, it is proposed a novel approach based on microfluidic systems coupled to "in-vitro" cell confinement. The device aims the culture and maintenance of selected kidney related cells to perform two main tasks, a restoring step for bioactive molecules previously lost during the blood filtering process and a regeneration therapy based on the use of cell secretion factors obtained naturally from the cell culture on the device.

PARTICIPANTS:

Luis J. Fernández, GEMM-I3A

José Luis Pedraz, *NANOBIOCEL-EHU*
Georgina Hotter/ Anna Sola, *GBIO-IDIBAPS*

CLINICAL/ EXTERNAL GROUPS:

Ignacio Giménez López, *Instituto Aragonés de Ciencias de la Salud*
Rosa Monge, *BEONCHIP SL*