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CIC biomaGUNE
MEMBER OF BASQUE RESEARCH & TECHNOLOGY ALLIANCE

seminar

Wednesday, 4th May, 9.30am, Online

Host: Prof. Luis M. Liz-Marzán

Bringing nanosolutions closer to the clinic. Study of fibrosis in patients, in vivo, and in 3D models

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Group Leader at the UC and at the Institute of Biomedicine and Biotechnology of Cantabria (IBBTEC)

The Fibroheart group studies therapeutic solutions and mechanisms of action for fibrotic diseases such as cardiac fibrosis, scleroderma and COVID19-associated pulmonary fibrosis.

Studies on the mechanisms of action in fibroblasts, preclinical in vivo drug delivery and the biochemical and mechanical characteristics of 3D organoids after experimental therapies administration provide good opportunities to define new anti-fibrotic nanosolutions.

We apply engineered peptides, genetic delivery systems and site-directed biovesicles in our systems to reduce the activity of profibrotic signaling proteins such as the Hsp90 chaperone or metalloproteinase 2.

Assays to define the role of the chaperone Hsp90 as a biomarker of scleroderma or cardiac target to reduce fibrosis, together with the application of plant metabolites to detect the reduction of lung fibrosis can be performed in the experimental models we run.

In our experimental models, we have defined the role of the Hsp90 chaperone as a biomarker of scleroderma or cardiac target to reduce fibrosis, as well as the reduction of pulmonary fibrosis after application of plant metabolites.

These studies aim to approach the pathological behavior of fibroblasts and the understanding of the antifibrotic mechanisms of action provided by the proposed therapeutic solutions.