



PRINCIPE FELIPE

CENTRO DE INVESTIGACION

## The Future of Biomedical Research Lecture Series

### Targeting nanoparticles towards zinc-metalloproteinases to deliver anti-inflammatory drugs in atherosclerosis

Speaker: **Vincent Dive, PhD**

Institut de Biologie et de Technologies de SaclayCenter, Saclay, France

Date: **06/10/2017- 12:30h**

Place: Sal6n de Actos CIPF

#### Abstract:

MMP-12 or the “macrophage zinc-metalloelastase” is a zinc-metalloprotease over-expressed by macrophages in diverse inflammatory conditions (cancer, atherosclerosis and arthritis..). The development of the first potent and selective inhibitor of MMP-12 has permitted to confirm that this protease is a potential therapeutic target in preclinical studies of atherosclerosis and viral infection. Based on these finding, it has been proposed to use in vivo expression of MMP-12 on the surface of macrophages to target nanoparticles loaded with anti-inflammatory towards sub-population of macrophages by grafting selective MMP-12 inhibitors on the surface of these nanoparticles. First results obtained with different nanoparticles to target MMP-12 in atherosclerosis will be reported, as well as efforts to develop probes able to detect active forms of MMP-12 in vivo.

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