

Thursday, 26th September, 12.00 pm, Seminar Room

Host: Dr. Jesús Ruiz-Cabello

Gene-modified minipigs with atherosclerosis: Applications in translational imaging

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Experimental research in animals is an important tool to explore disease mechanisms in atherosclerosis and to develop therapies and technologies by which atherosclerosis can be detected, treated and monitored. Yet every animal model has limitations that restrict the type of question that can be addressed and the translational value of the answers that may be found. For research in atherosclerosis imaging in particular, human-sized atherosclerosis models, such as minipigs, come with important advantages. They allow the use of clinical equipment without modifications and they provide arteries and atherosclerotic plaques with near-human-like size and structure. This facilitates rapid translation to and from the clinical setting.

Using genetic engineering in cells followed by somatic cell nuclear transfer, we have created lines of hyperlipidemic Yucatan minipigs that develop progressive atherosclerotic lesions in clinically-relevant arterial beds, including the coronary arteries. The presentation will review these models and provide examples of how they are proving useful in testing of existing and new imaging techniques.