

A 3D Printed Synthetic Scaffold for *Ex-vivo* Human Colonic Tissue Culture Model

Colonic Tissue Culture Model

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Before being given to patients potential new drugs are tested on laboratory grown cells. Growing cells in the laboratory is done on flat plastic surfaces which is very artificial and unnatural since it provides no resemblance to the bodily environments in which cells normally reside. This means that many drugs that show promise in a laboratory environment don't work when tested in other situations. This costs those researching new drugs both time and money as they work with compounds that are later found to be ineffective. There is therefore a need in the global biomedical research market for a more sophisticated cell model of the human intestinal tract that can be used to investigate the mechanisms of disease risk. 3D cell culture scaffolds provide a significantly better representation of the natural environment experienced by cells within living systems than the conventional plastic surfaces. Under these conditions, cells behave and respond more like they should in the patient.

Dr Aram Saeed and Dr Mark Williams (UEA) are developing a bespoke 3D synthetic matrix. This product is unique as it uses cells provided by the NNUH tissue bank which allows researchers access to more realistic models, reduce the number of costly late-stage failures in drug research and the needs for animals testing. The Norwich Research Park Translational Funding will support development of the new system and build relationships with companies who may work with UEA to bring the product to market.