THE TECHNOLOGY

Required performance of gels for 3D Cell Culture:
(1) Ease of cell distribution; (2) Neutral pH; (3) Handling at 37°C (body temperature); (4) Rapid, reproducible gelation under mild conditions; (5) Good and tuneable mechanical stability (similar to that of tissue); (6) Uniformity of gel at the nano, micro and macroscopic levels; (7) Longevity in culture/in vivo; (8) Ease of biological functionalisation.

None of the existing commercial gel products accurately represent all of the above. Our peptide gels show significant improvement for the majority of these characteristics. In particular, they can be tailored to suit different cell types, including mesenchymal stem cells, chondrocytes, fibroblasts and hepatocytes both for 2D and 3D culture, and have mechanical properties which can be tailored to match those of natural tissue scaffolds.

KEY BENEFITS
Compatible with range of cell types; fully synthetic; gels are stable under biologically acceptable conditions; short peptide chains enable design flexibility; incorporation of biologically functional molecules.

OPPORTUNITY
Gels are now available for evaluation by industry and academe. For further information contact ri@strath.ac.uk

REFERENCES
1 WO2007/029003 – “Method of Preparing a Hydrogel”
2 US20070099840 – “Hydrogel Compositions”

KEYWORDS: Peptide, Enzyme, Biomaterial, Biomedicine, Cell Culture, Cell Biology, Hydrogel, Polymer, Protease, Regenerative Medicine, Tissue Engineering