

CLAIMS

1. A supramolecular structure comprising a plurality of fused fibrils wherein each fibril comprises a plurality of cell adhesion motif lipopeptides.
- 5 2. The structure of claim 1 wherein the cell adhesion motif is an extracellular matrix protein sequence or a fragment or a variant thereof.
3. The structure of claim 2, wherein the extracellular matrix protein is selected from the group
10 consisting of fibronectin, collagen, lumican, decorin, laminin, vitronectin, fibrinogen, elastin, biglycan, heparin, tenascin and osteopontin.
4. The structure of claim 2 or 3, wherein the cell adhesion motif is:
 - a) a fibronectin fragment comprising or consisting of an amino acid sequence selected from
15 RGD (SEQ ID NO: 1), RGDS (SEQ ID NO: 5), PHSRN (SEQ ID NO: 6), LDVP (SEQ ID NO: 7), WQPPRARI (SEQ ID NO: 8), IGD (SEQ ID NO: 9), REDV (SEQ ID NO: 10), and IDAP (SEQ ID NO: 11) or a variant thereof;
 - b) a collagen fragment comprising or consisting of an amino acid sequence selected from KTTKS (SEQ ID NO:2), GTPGPQGIAGQRGVV (SEQ ID NO: 12), GROGER (SEQ ID NO: 13), GLKGEN (SEQ ID NO: 14), GFOGER (SEQ ID NO: 15), and MNYYSNS (SEQ ID NO: 16) or a variant thereof; or
 - c) a lumican fragment comprising or consisting of an amino acid sequence selected from EVTLN (SEQ ID NO: 17), ELDLSYNKLLK (SEQ ID NO: 18) and YEALRVANEVTLN (SEQ ID NO: 3); or
 - 25 d) a laminin fragment comprising or consisting of an amino acid sequence selected from the YIGSR (SEQ ID NO: 19), IKVAV (SEQ ID NO: 20), CCRIKQVAVWLC (SEQ ID NO: 21) and RGD.
5. The structure of any preceding claim, wherein the plurality of cell adhesion motif
30 lipopeptides comprise at least two different cell adhesion motif lipopeptides.
6. The structure of claim 5, wherein the at least two different cell adhesion motif lipopeptides are:
 - a) a cell adhesion motif lipopeptide comprising or consisting of KTTKS (SEQ ID NO:2); and
 - 35 b) a cell adhesion motif lipopeptide comprising or consisting of YEALRVANEVTLN (SEQ ID NO: 3).

7. The structure of any preceding claim, wherein the lipopeptide comprises a lipid portion comprising a carbon chain of 6 to 24 carbon atoms.
8. An aqueous medium comprising a supramolecular structure as defined in any one of claims
5 1 to 7.
9. The medium of claim 8, wherein the medium is a cell culture medium.
10. The medium of claim 9, wherein the cell culture medium is serum free.
- 10 11. The medium of claims 9 or 10, wherein the cell culture medium is selected from the group consisting of Dulbecco's Modified Eagle Medium (DMEM), Ham's F12, Leibovitz's L-15 medium, RPMI-1640, Mesencult™ Basal Medium, or DMEM-F12.
- 15 12. A surface for cell maintenance, cell culture and/or cell bioprocessing, wherein immobilised in or on the surface is a supramolecular structure as defined in any one of claims 1 to 7.
13. The surface of claim 12, wherein the surface is 2D or 3D.
- 20 14. The surface of claim 13, wherein the 2D surface is a cover slip or a surface of a cell culture vessel, optionally wherein the cell culture vessel is selected from a tube, a flask, a dish or a plate comprising a plurality of wells.
15. The surface of claim 13, wherein the 3D surface is a scaffold, optionally wherein the
25 scaffold is a hydrogel or a polystyrene scaffold.
16. Use of a supramolecular structure as defined in any one of claims 1 to 7, or an aqueous medium as defined in any one of claims 8 to 11, or a surface as defined in any one claims 12 to 15, for maintenance, culture and/or bioprocessing of a cell.
- 30 17. The use according to claim 16, wherein the bioprocessing is for collagen production.
18. The use according to claim 16, wherein the supramolecular structure, medium or surface promotes cell growth.
- 35 19. The use according to any of claims 16 to 18, wherein the cell is selected from the group consisting of: a human stromal progenitor cell, a human adipose derived mesenchymal stem cell and an immortalised mouse myoblast cell.