CLAIMS

We Claim:

1. A method of preparing a comestible meat product, comprising:
applying a plurality of non-human cells comprising one or more of myoblasts, mesoangioblasts, myofibroblasts, mesenchymal stem cells, hepatocytes, fibroblasts, pericytes, adipocytes, epithelial, chondrocytes, osteoblasts, osteoclasts, pluripotent cells, somatic stem cells, or endothelial cells, to a patterned texture substrate comprising a first patterned texture region having a first tissue adhesion quality and a second patterned texture region having a second tissue adhesion quality greater than the first tissue adhesion quality;
directing a cell culture medium continuously at a first fluid flow rate across or adjacent to the patterned texture substrate;

growing the plurality of non-human cells on the patterned texture substrate to form the comestible meat product; and

separating the comestible meat product from the patterned texture substrate by flowing fluid in a direction from the first patterned texture region towards the second patterned texture region.

2. The method of claim 1, wherein the comestible meat product is held intact by an extracellular matrix secreted by the plurality of non-human cells.

3. The method of claim 1, wherein the comestible meat product is separated contemporaneously as a cell sheet from the patterned texture substrate.

4. The method of claim 1, wherein at least one of the first patterned texture region or the second patterned texture region comprises one or more of channels, recesses, or protrusions.

5. The method of claim 1, wherein at least one of the texture of the first patterned

texture region or the texture of the second patterned texture region comprises a plurality of surface characteristics that correspond to a cell type or at least one of growth, retention, or release of the plurality of non-human cells.

6. The method of claim 1, wherein at least one of the first patterned texture region or the second patterned texture region comprises a set of linear channels in parallel to each other.

7. The method of claim 1, wherein at least one of a texture of the first patterned texture region or a texture of the second patterned texture region comprises a channel having a predetermined direction comprising one or more of a radial, circular, non-linear, spot, or cross-hatched pattern.

8. The method of claim 1, wherein the patterned texture substrate is arranged in a three-dimensional lattice with one or more additional substrates.

9. The method of claim 1 wherein the patterned texture substrate comprises a biocompatible coating.

10. The method of claim 1, wherein the patterned texture substrate comprises a non-patterned texture region.

11. The method of claim 1, wherein directing the cell culture medium comprises directing the cell culture medium according to a predetermined flow pattern.

12. The method of claim 11, wherein the predetermined flow pattern comprises a predetermined flow path over the patterned texture substrate.

13. The method of claim 1, wherein separating the comestible meat product comprises directing a fluid at the patterned texture substrate at a second fluid flow rate higher than the first fluid flow rate.

14. The method of claim 1, further comprising, prior to separating the comestible meat

product from the patterned texture substrate, directing the cell culture medium across or adjacent to the patterned texture substrate at a second fluid flow rate different from the first fluid flow rate.