are propagated in the 3-D culture (right panel).

[077] **FIG. 23A** shows trout myotubes that have successfully differentiated from myosatellite cells attached to glucomannan microscaffolds. **FIG. 23B** shows a negative control of undifferentiated myosatellite cells from the same preparation grown in identical cell culture conditions.

[078] **FIG. 24A** shows duck fibroblasts (arrowheads) successfully grown on glucomannan microscaffolds (arrows). **FIG. 24B** shows a representative glucomannan microscaffold.

[079] **FIG. 25** shows a still image captured from a video of duck muscle tissue demonstrating spontaneous contraction.

[080] **FIG. 26** shows duck liver pâté (left panel) and foie gras butter (right panel) made using duck steatotic liver cells.

[081] **FIG. 27** shows salmon pâté (left panel) and duck meat pâté (right panel) prototypes made according to the methods described herein.

[082] **FIG. 28A** shows an exemplary embodiment of a method of Cre delivery for the purpose of activating / silencing particular genes. **FIG. 28B** shows different methods of using Cre to induce a "switch" between activated gene sets relevant to meat creation (e.g., proliferation and differentiation).

[083] **FIG. 29** shows an embodiment of a method of transposon-mediated genetic self-excision for purpose of footprint-free gene editing.

[084] **FIG. 30** shows an embodiment of a solution blow spinning process for generating fibers.

[085] **FIG. 31** shows another embodiment of a solution blow spinning process for generating fibers.

DETAILED DESCRIPTION OF THE INVENTION

[086] Disclosed herein are systems and methods for producing food products using cellular agriculture. Cell cultured food products provide many advantages that obviate or greatly reduce the negative impacts caused by traditional food production. These advantages are particularly felt in the area of meat production, which are typically produced using intensive livestock production or through fishing and fisheries. Instead of raising or catching live animals and fish to be harvested for their meat, cells having self-renewal capacity are isolated or created and grown in cell culture. In some cases, the cells are naturally capable of self-renewal such as embryonic stem cells and pluripotent progenitor cells. Alternatively, or in combination, the cells are manipulated to acquire the ability to self-renew. These cells are cultured and expanded to a desired quantity. The