CLAIMS

WHAT IS CLAIMED IS:

1. An in-vitro cultured meat product, comprising: a population of cells comprising fibroblasts, myoblasts, or a combination thereof, the population of cells being transdifferentiated to express adipocyte phenotypes; wherein the transdifferentiation involves transfection to induce steatosis via an overexpression of CEPBalpha, CEPBgamma, PPARgamma, SREBP1, SREBP2 or a combination thereof;
wherein the population of cells is transfected to downregulate at least one of OSR1, PRRX1, LHX9, TWIST2, and INSIG2;
wherein transdifferentiation occurs without endogenous hormones or small molecules recognized to transdifferentiate cells into adipocyte phenotypes; and
wherein the transdifferentiated population of cells retains proliferative capacity at late passage.

2. An in-vitro cultured meat product, comprising: a population of cells comprising fibroblasts, myoblasts, or a combination thereof, the population of cells being transdifferentiated to express adipocyte phenotypes; wherein the transdifferentiation involves transfection to induce steatosis via an overexpression of CEPBalpha, CEPBgamma, PPARgamma, SREBP1, SREBP2 or a combination thereof; and wherein the population of cells is transfected to overexpress HNF4alpha.

3. An in-vitro cultured meat product, comprising: a population of cells comprising fibroblasts, myoblasts, or a combination thereof, the population of cells being transdifferentiated to express adipocyte phenotypes; wherein the transdifferentiation involves transfection to induce steatosis via an overexpression of CEPBalpha, CEPBgamma, PPARgamma, SREBP1, SREBP2 or a combination thereof;

wherein the population of cells includes myoblasts having wildtype MyoD; and wherein the wildtype MyoD is overexpressed.