USU Researchers Use Transgenic Silkworm Silk to Model Muscle Tissue

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Silk fibers are wound around an acrylic chassis to produce a three-dimensional cell culture device. Photo: Matt Jensen.

USU Biology faculty Justin Jones is part of a group of researchers from the Biological Engineering and Biology Departments that have developed a new method of growing skeletal muscle cells: not on a plastic surface but on the three-dimensional silkworm silk fibers. The cells grown on silkworm silk proved to more closely mimic human skeletal muscle than those grown on the usual plastic surface.

Native silkworm silks have been used previously as three-dimensional cell culture models, but this is the first time that transgenic silkworm silk has been used for skeletal muscle modeling. Elizabeth Vargis, Matthew Clegg and Jacob Barney of the Biological Engineering Department, and Justin Jones, Thomas Harris and Xiaoli Zhang of the Biology Department published their findings in ACS Biomaterials Science & Engineering. Read the entire story in USU Today here.