

PayPal founder bankrolls 3-D printed meat

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(Phys.org) -- A Missouri-based company may have an impact on environmental issues raised by nations of meat-eaters and populations bearing the brunt of world hunger with an alternative, bioprinted meat. According to the company, Modern Meadow, creating “a strip of edible porcine tissue using print-based tissue engineering approach” is “scaffold-free,” in that it does not rely on artificial material to form the desired structure. The company founders aspire to develop lab-grown meat as a source of animal protein and to benefit from a technology with great market potential. The company, aptly named Modern Meadow, is founded by Gabor Forgacs and Andras Forgacs.

Bioprinted [meat](#) is a concept that is not a rarity for scientists interested in technologies for creating medical-grade tissue. Modern Meadow is taking off from what it knows about regenerative medicine and 3-D printing to explore this edible solution. The basic idea is layering cells,

rather than inks, into a structure using print technology. Gabor Forgacs has already made a name in the area of research looking at regenerative medicine. As the scientific founder of Organovo, which has been recognized for its work in bioprinting, he set out to show that if cells are precisely placed with the proper natural developmental cues, they could self-assemble into fully formed, functional tissue. The idea is that via computer-aided design and high precision, one can recreate the micro-architecture of human tissue. Similarly, the company says that mixtures of cells of different types layered in a specific structure is a feasible way to produce edible meat.

According to a statement from the company, “We anticipate that this Phase I application will result in a macroscopic size (~2 cm x 1 cm x 0.5 mm) edible prototype and will demonstrate that bioprinting-based in vitro meat production is feasible, economically viable and environmentally practical.”

Environmentalists do not disagree that engineering meat in a lab poses advantages. Lab-grown meat would not produce the methane that cows emit; animals would require less water and grain; pasture lands would benefit as well. Modern Meadow co-founder Andras Forgacs has called the hamburger an environmental train wreck.

The venture is backed by Thiel’s foundation via its Breakout Labs, which is a revolving fund to promote scientific and technological innovation. Successful grantees return a modest royalty and warrant stake to Breakout Labs. The exact dollar amount of the donation is not given, but the announcement dated August 15 said “To date Breakout Labs has awarded a total of nine grants, of up to \$350,000 each.”

More information: www.breakoutlabs.org/uploads/m...
[ase_2012-8-14_01.pdf](#)

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