

Alternative Meat; Lab-Grown

by Seth Baum

At first I was like WHAT?!?
That's ridiculous! Lab-grown meat?

That means meat without the animal! That's disgusting! Excuse me while I go be glad I'm a vegetarian.

Upon closer inspection, however, it's not only not at all disgusting, but a very promising technology currently under development. The process used to grow the meat is the same ordinary cell division process driving all animal growth, called mitosis. To cause mitosis outside an animal's body, we simply place some cells in a nutrient "soup." The first time anyone did this was all the way back in 1912. Nobel laureate Alexis Carrel kept part of the heart muscle of a chicken embryo growing for 32 years.

So why would anyone want meat produced without the animal? A better question might just be, why wouldn't anyone want it? By controlling the process much more precisely, this meat has the potential to be healthier, safer, and tastier than animal-grown meat. It could be done with none of the growth hormones and antibiotics common in today's factory-farm meat.

Because nothing is wasted on unnecessary body parts, it could also be less expensive, less polluting, and consume less energy. Did you know livestock is a leading source of greenhouse gas emission? Lab-grown meat may never beat plant food in energy efficiency, but it should beat animal meat convincingly.

Finally, lab-grown meat, of course, avoids the horrendous suffering of our factory farm livestock, since there's no animal to suffer. This could put those nasty factory farms we don't like to even think about out of business forever.

Winston Churchill wrote in 1932, "Fifty years hence we will escape the absurdity of growing a whole chicken in order to eat the breast or wing by growing these parts separately under a suitable medium." Well, 1982 may have given us *Thriller*, but it came and went without Churchill's prediction coming true. So, in 2007, we're still working on this technology.

The current wave of research started when NASA conducted research on growing fish parts to feed astronauts in 2002. In 2004, a group of researchers published a paper outlining methods to produce meat in vitro. Shortly afterwards, the Dutch government began funding a research effort to develop the technology, and a U.S. organization, New Harvest, was set up as a private, non-profit funding source.



They are still working to perfect the technology. It may be many years before this hits the grocery store. Jason Matheny, founder and director of New Harvest, estimates 10-15 years, but cautions that such predictions are "notoriously inaccurate." The culture that the meat cells grow in must become less expensive first, he says. It's now so expensive, the final product would cost about \$10,000 per kilogram. "But when it's cheap enough, I'll be in line," he adds. "I've been vegetarian over half my life, but this is meat I'd eat."

I'm almost disappointed that this alternative meat is so mundane. If it involved, say, freak mutant meat cells powered by nuclear radiation and leftover toxic sludge, it would make for a much more interesting story. Still, there are a few quirks. "I suppose the strangest is the frequency with which I get emails asking if one could eat meat grown from one's own stem cells," Matheny says. "Those emails have averaged at least once per week over the last year. I didn't know there was so much interest in self-cannibalization."

Technological progress has become so ubiquitous, flashy new innovations rarely catch my eye. But given the 24 billion chickens, 1.3 billion cows, and 960 million pigs worldwide suffering their living conditions, polluting our air and water, clogging our arteries, and taxing our pocketbooks, I'm really rooting for lab-grown meat. It may never beat a good old-fashioned vegetarian diet, but it's a great option to have. **WU**

Seth Baum says: Mmm, tofu...