

# Grass fed artificial meat

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[2015-11-25 11:22:09](#) [http://www.thelancet.com/p-content/figures/S0140-6736\(15\)00823-1](#) I heard an article on the news about grass fed artificial meat this morning. This was from a group from a University in the South of England trying a new approach. The artificial meat cells were grass fed but in culture. The big problem with experiments in growing meat in culture up until now is the problem over the protein source. All cells need a protein source or at least a source of amino-acids. What normally happens is that any proteins provided are then broken down to their constituent amino-acids. These are then used to make new proteins by the cells. Having worked in animal cell lines I personally don't fancy eating cells grown on animal serum. The issue is two fold. The cells still require the use of animals to grow animal serum. This to me defeats the purpose. The second problem is the viruses that might be present in the serum. This is to be fair is a potential problem in many vaccines, where the viruses are cultured in mammalian cell lines. It doesn't seem to be problem with vaccines since hundreds of millions of people are vaccinated every year without a problem. However, there is a difference between the way vaccines are produced and cultured meat cell would be produced. Vaccines are freeze dried before use. That is the vaccine material is cooled under a vacuum, then the vials are sealed aseptically. This promotes "viral kill", (although technically viruses aren't alive). The reader will be aware that every time you're vaccinated the nurse or doctor has to reconstitute the lyophilised material with sterile water. As part of the development of the vaccine, virus models are used to determine that the viruses have been removed. I've been involved in some of this work in the past. The point is meat grown in culture will not be freeze dried, but merely recovered and processed in some way. The alternative is to use serum free media. In this amino-acids are added individually not formed as proteins. The work described on the radio was merely changing the carbon source of the cells grown as artificial meat. All cells require this as well as amino-acids and vitamins/minerals. The researchers are not literally adding grass but breaking the grass down to glucose. Does this really help though? The grass has to come from somewhere? So do the proteins or amino-acids. The people concerned reckoned their artificial meat had carbon emissions are less than a cow in a field. But really supplying all the nutrients etc. takes energy. Its a little bit to believe any industrial process is more efficient than an animal in a field. Neil

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