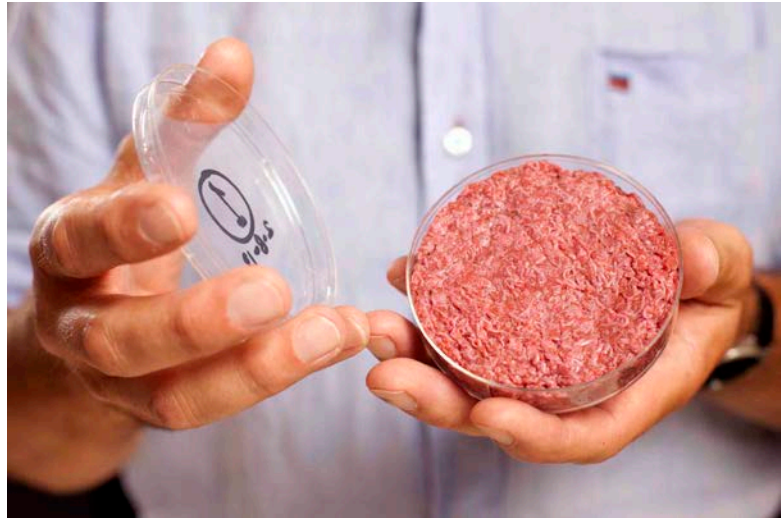# Factsheet: Cultured Meat

What is cultured meat?

Cultured meat (or "clean meat") is the same as conventional meat but, rather than growing an animal, the meat is produced by growing animal cells.

Cultured meat is real meat that under the microscope is indistinguishable from meat from a cow, pig or chicken.

The world's first cultured hamburger presented at a press conference in London in 2013.
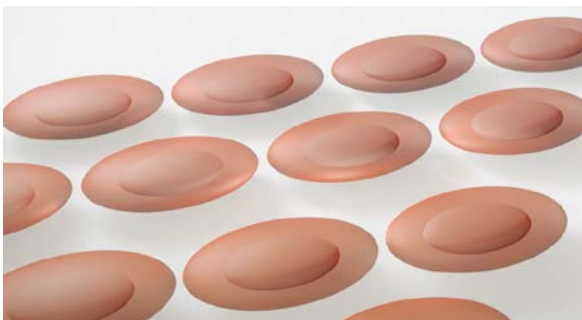
How is it made?

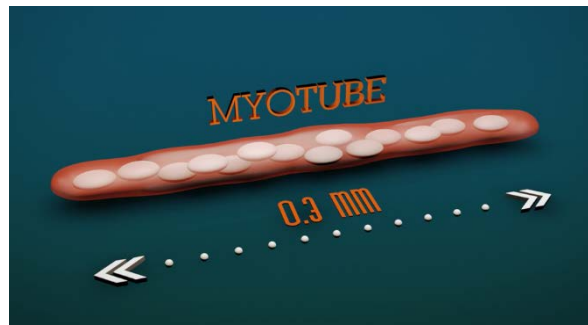The biological process is similar to making livestock meat, except the cells grow outside the animal's body.

The first step is to take some cells from the muscle of an animal, such as a cow if we're making beef, which is done with a small biopsy under anaesthesia.

The cells are placed in a medium containing nutrients and naturally-occurring growth factors, and allowed to proliferate just as they would inside an animal.

They proliferate until we get trillions of cells from a small sample. This growth takes place in a bioreactor, which looks similar to the bioreactors used in the production of foods such as cheese.

When we stop feeding the cells growth factors, they differentiate on their own. The muscle cells naturally merge to form "myotubes" (small primitive muscle fibres).

The myotubes are then placed in a gel that is 99% water, which helps the cells form the shape of muscle fibres. The muscle cells naturally contract and put on bulk, growing into a small strand of muscle tissue.

From one sample from a cow, we can produce 800 million strands of muscle tissue (enough to make 80,000 quarter pounders).

When all these strands are layered together, we get what we started with – meat. This can then be processed using standard food technologies, for example by putting them through a meat grinder to make ground beef. There is no genetic modification involved in the process (the cells are simply doing what they naturally do inside the animal).

To see an animated video showing the process of making cultured meat, please visit: https://vimeo.com/272116550