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Cellular agriculture

Glossary of common terms

Acellular	Non-living. Something that contains no living material. This includes proteins, fats and flavours.
Acellular agriculture	Acellular agriculture is a type of cellular agriculture where the target components are produced within cells (most commonly bacteria or fungi) then isolated and formulated into products for consumption. Examples include the production of milk proteins (casein, beta-lactoglobulin), fatty acids, vanillin and collagen.
Alternative protein	A broad term to describe sources of dietary protein that are alternatives to conventional meat and dairy products including plant-based milk and meat, insects, cellular agriculture products, unconventional grains and novel crops.
Bovine	Cow
Caprine	Goat
Cell bank	A collection of cells stored in cryo conditions (at very low temperatures).
Cell culture	The lab-based process where cells (animal cells, bacteria or fungi) are grown in the lab. Cells are first isolated from living tissue, then fed and proliferated under controlled conditions.
Cell line	Isolated/cultured cells that can grow in vitro for an extended period. Cell lines generally have defined characteristics and are categorised as continuous, stem cell lines, or finite cell lines.
Cell sourcing	The process of isolating (primary) cells from an animal.
Cell substrate	A cell population that is used to manufacture biological products, such as proteins or vaccines.
Cell-based meat	Describes meat produced from animal cells using cell culture.
Cellular agriculture	Cellular agriculture is the process of producing agricultural products (proteins, flavours, animal cells) using cell culture.
Cellular products	Are products made of living or once living cells including products such as meat, wood, fur and leather.
Co-cultures	When two or more cell types are simultaneously cultured.
Continuous cell line	Are cells with an infinite capacity to double. They do not age (or age very slowly) and are also known as immortal cell lines. Typically, they are derived from tumours or embryonic tissues.
Cryo	Cold, typically referring to temperatures below 80 °C.
Cryopreservation	A process used to preserve intact living cells using low temperatures.
Differentiate	The process of one cell type becoming another, usually involving specialisation.
Diploid cell line	Cell line that contains two complete sets of chromosomes.

Foetal bovine serum	Abbreviated as FBS. A serum isolated from cow foetus that is traditionally used as a nutrient during cell culture.
Finite cell lines	Are cells that have a passage limit due to aging.
Food	As defined in the Food Standards Australia New Zealand Act 1991; food is any substance or thing that is capable of being used for human consumption. Food encompasses live animals and plants.
In vitro	A term that describes lab processes in which the conditions differ from the normal biological environment. Cell culture is an in vitro process.
IP	Intellectual property - the ownership of knowledge
Master cell bank	Abbreviated as MCB. A cell bank produced from an initial cell batch at low passage level.
Myocyte	A key cell type in muscle tissue.
Media	A liquid that is fed to cells during tissue-engineering which contains a mixture of nutrients and growth factors including serum.
Myofibril	Structures within myocytes that are composed of actin, myosin and tropomyosin. They are responsible for muscle contraction.
Myogenesis	The process through which myocyte cells develop.
Non-traditional food	Is defined as a food that does not have a history of human consumption in Australia or New Zealand.
Novel food	As defined in Standard 1.5.1, under the Food Standards Australia and New Zealand Act 1991, a novel food means novel food means “a non-traditional food that requires an assessment of the public health and safety considerations”.
Passage	The process of subculturing cells into a new culture vessel to allow propagation and growth. Each subsequent transfer is called a passage.
Patent	A legally binding ownership of an invention.
Poultry	Chicken
Primary cell culture	Cells that are freshly sourced from an animal.
Serum	An essential ingredient for in vitro cell culture that contains essential molecules for cell metabolism including immunoglobulin, growth factors and hormones, binding and transport proteins, amino acids, vitamins, trace elements, fatty acids, lipids and protease inhibitors. It can be animal-derived or animal-free.
Stem cell line	A continuous cell line generated from stem cells. Stem cells it can differentiate into a number of different cell types.
Tissue-engineering	The engineering of cells in vitro to form functional structures including organs, scaffolds and tissues.
Working cell bank	Abbreviated as WCB. A sub-bank produced from one or more vials of the MCB by serial expansion or passaging.

The following terms are used interchangeably to describe cell-based meat:

Animal-free meat, artificial meat, cell-based meat, clean meat, cultivated meat, cultured meat, franken-meat, in vitro meat, slaughter-free meat, synthetic meat, tissue-engineered meat, vat-grown meat.

The following terms are used interchangeably to describe products produced using acellular agriculture:

Acellular agriculture, cultivated proteins, cultured foods, cultured proteins, fermentation based-cellular agriculture, fermented proteins.