Leb2: Types of cell culture media

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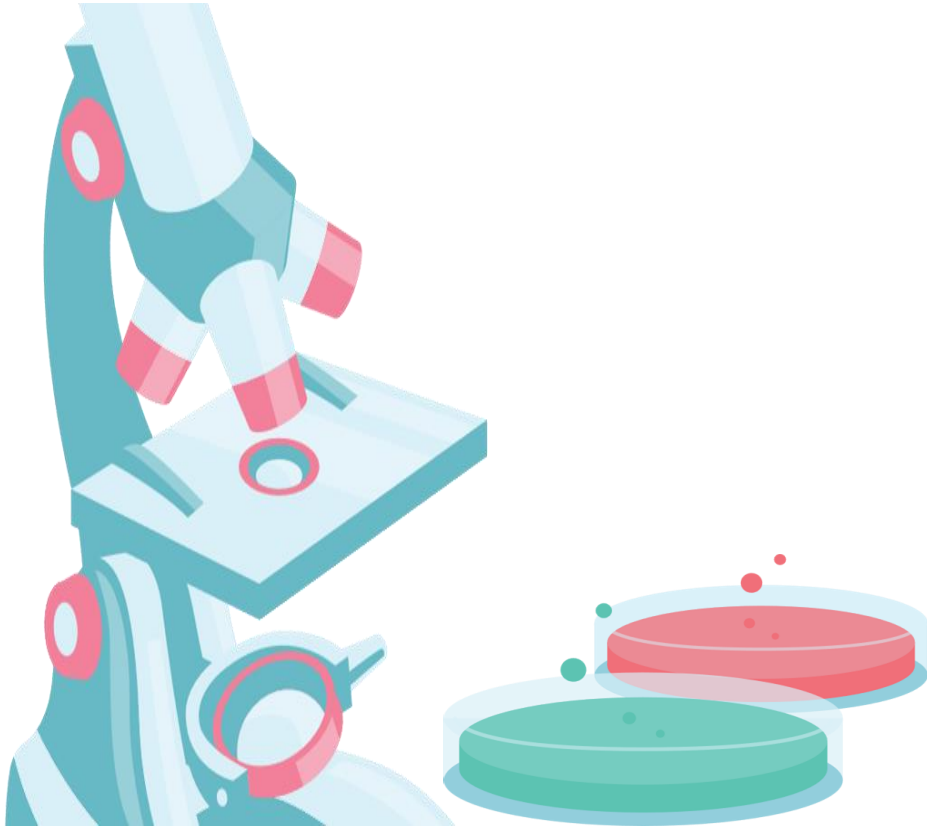
cell culture medium

Animal cells can be cultured either using a completely natural medium or an artificial/synthetic medium along with some natural products.

Media Type

Natural media

Artificial media



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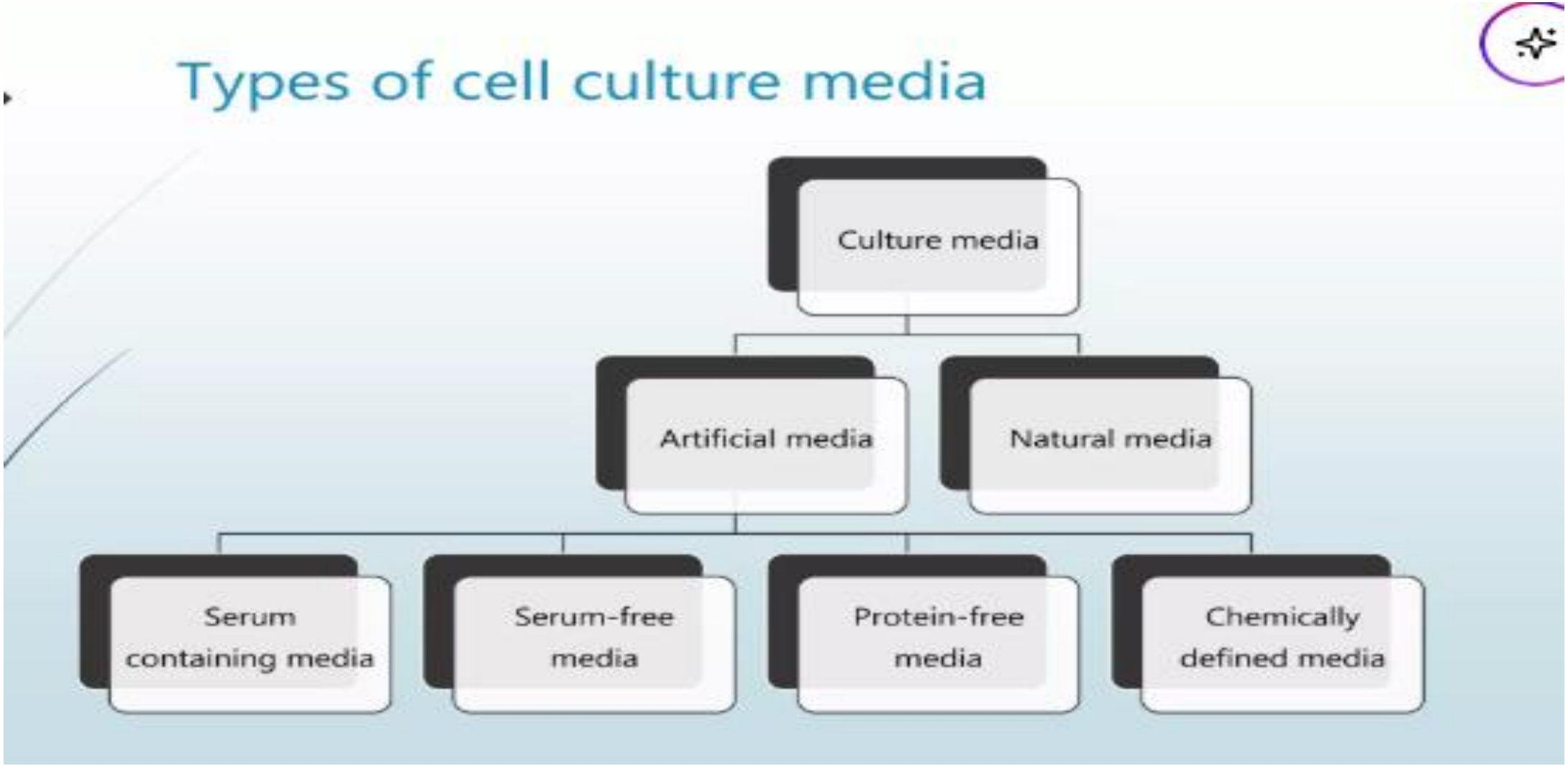

Types of cell culture media
Culture media
Artificial media
Natural media
Serum containing media
Serum-free media
Protein-free media
Chemically defined media

Natural media

- Biological Fluids plasma, serum, lymph, human placental cord serum, amniotic fluid
- Tissue Extracts Extract of liver, spleen, tumors, leucocytes and bone marrow, extract of the bovine embryo and chick embryo
- Clots coagulants or plasma clots
- Balanced salt solutions PBS, DPBS, HBSS, EBSS use Form the basis of complex media

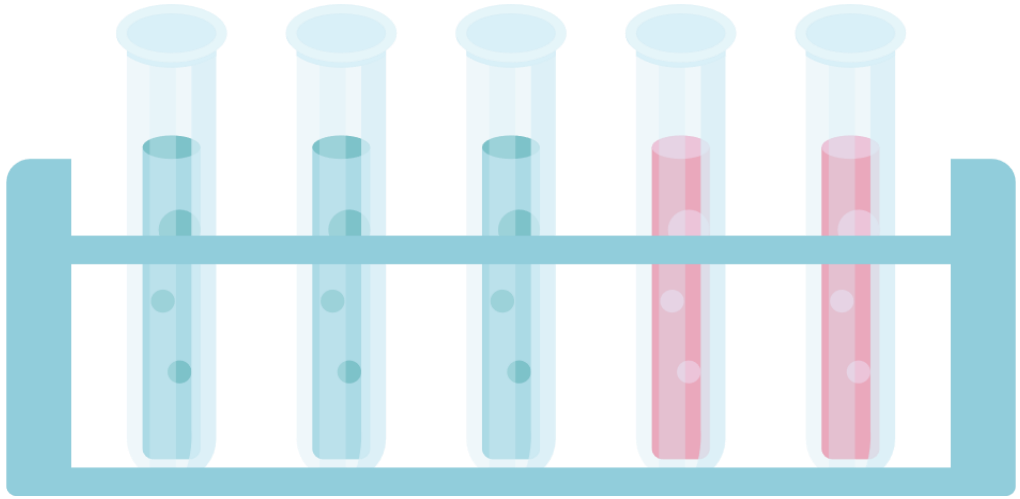
Artificial media

- Basal media MEM DMEM use Primary and diploid culture
- Complex media RPMI-1640, IMDM use Supports a wide range of mammalian cells

Natural media

Natural media consist solely of naturally occurring biological fluids. Natural media are very useful and convenient for a wide range of animal cell culture.

The major disadvantage of natural media is its poor reproducibility due to lack of knowledge of the exact composition of these natural media.



Artificial media

Artificial or synthetic media are prepared by adding nutrients (both organic and inorganic), vitamins, salts, O2 and CO2 gas phases, serum proteins, carbohydrates, cofactors

artificial media are grouped into four categories

1-serum containing media

Serum-containing media are basal culture media (DMEM أوMEM) supplemented with 5–20% of animal serum, usually Fetal Bovine Serum (FBS)

artificial media are grouped into four categories

2- serum free media

Serum-free media (SFM) are culture media formulated without animal serum Instead of serum, they contain precisely defined supplements such as hormones, growth factors, vitamins and trace elements required for specific cell types

artificial media are grouped into four categories

3- chemically defined media

Chemically defined media are synthetic cell culture media in which every component and its exact concentration are known.

They do not contain any undefined biological materials such as serum, hydrolysates, or extracts.

artificial media are grouped into four categories

4- protein free media

Protein-free media (PFM) are culture media that contain no proteins, peptides, or large macromolecules of animal or human origin

All components are chemically defined and small molecules

Thank you