

# Al-Mustaqbal University

College of Science
Principle of Biochemistry
Theoretical Lecture 8
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## Culture media:

Microorganisms require accessible nutrients and a conducive growth environment to survive and proliferate. The nutrient preparations used in the lab to cultivate microorganisms are referred to as media (plural: medium). In other word the food we use to cultivate molds, bacteria, and other microorganisms is known as media.

### Types of Media

Media fall into three general categories based on their properties: physical state, chemical composition, and functional type.

#### A. Physical form of Media

Three physical forms are used: liquid, or broth media; semisolid media; and solid media. The major difference among these media is that solid and semisolid media contain a solidifying agent (usually agar), A liquid medium, however, does not.

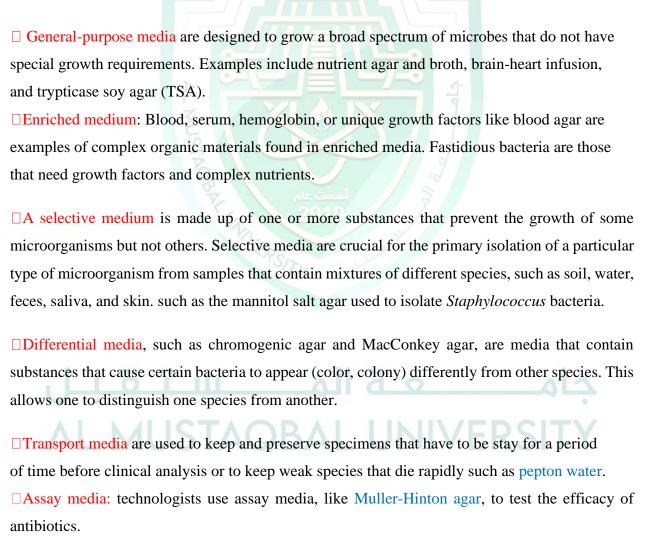
- •Broth is a liquid medium that does not solidify when the temperature rises above freezing. As growth spreads throughout the container, it may appear distinct and hazy. Large numbers of organisms are propagated using these media. For example, Nutrient broth.
- •Solid media, such as blood agar and nutrient agar, are helpful for isolating and cultivating bacteria because they offer a firm surface on which cells can form distinct colonies.
- Semisolid media fall in between liquid and solid media., like Manitol Motility media, are used to measure the motility of bacteria, despite having solidifying agents like agar or gelatin, which makes them similar to solid media.

Agar, is a <u>jelly-like substance</u> consisting of <u>polysaccharides</u> obtained from the cell walls of some species of <u>red algae</u>, primarily from "ogonori" (<u>Gracilaria</u>)

#### Chemical media

Synthetic media are defined by a precise formula and have a chemical composition. Pure chemical nutrients are present in such media. complex or non-synthetic medium. There is no precise chemical formula for this kind of medium's composition. Extracts from plant or animal tissues, blood, serum, and meat extracts, such as nutrient broth, blood agar, and MacConkey agar, are examples of substances that can render it non-synthetic. For microorganisms with intricate nutritional requirements, they offer a diverse range of nutrients.

#### Functional type of media





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