

2. Classification by Physical State (Consistency)

Physical State	Sub-types / Examples	Composition & Technical Info	Principal Purpose
Solid Media	Agar plates (e.g., Nutrient Agar, Blood Agar) .	Contains 1.5%–2.0% agar. Solidifies at $37^{\circ}C$.	Used for isolation of bacteria as pure cultures by streaking.
Semi-Solid Media	Mannitol Motility Medium.	Contains agar at 0.5% or less. Jelly-like consistency.	Used to demonstrate bacterial motility and support microaerophilic growth.
Liquid Media	Nutrient Broth (NB) , Tryptic Soy Broth (TSB) , MR-VP Broth.	No agar added.	Used for growing large numbers of bacteria and biochemical studies.

		inhibitory substances ↗	mixed cultures by stimulating growth of desired microbes ↗	<i>Salmonella, Shigella, Vibrio cholerae</i> ↗
Selective	Solid	Inhibitory substances added to solid media ↗	Specifically select for a desired bacterium while inhibiting others ↗	<i>M. tuberculosis</i> (LJ), <i>V. cholerae</i> (TCBS), Gram-negative (MacConkey) ↗
Differential / Indicator	Solid/Liquid	Contains indicators (e.g., Neutral red, Urea) ↗ ↗	Distinguish between bacteria based on biochemical properties ↗	Lactose fermenters (Pink) vs. Non-lactose fermenters (Colorless) ↗
Transport	Semi-solid	Non-nutrient; may contain reducing agents/charcoal ↗	Keeping delicate organisms alive during transport to the lab ↗	<i>Gonococci</i> (Stuart's), Enteric bacilli (Buffered glycerol saline) ↗
Semi-Solid	Semi-solid	0.5% agar or less ↗	Testing for motility; growth of microaerophilic bacteria ↗	Motile vs. Non-motile bacteria ↗
Sugar Media	Liquid	1% sugar + indicator + Durham's tube ↗	Detection of sugar fermentation and gas production ↗	Any fermentable substance users ↗

Basal Media (Simple Media) ↗ ↗	Nutrient Broth (NB) ↗ ↗	Supports growth of <i>Staphylococcus</i> and <i>Enterobacteriaceae</i> . ↗	Consists of peptone, meat extract, NaCl, and water. ↗
	Nutrient Agar ↗ ↗	General purpose for non-fastidious bacteria. ↗ ↗	Nutrient Broth with 2% agar added. ↗
Enriched Media ↗ ↗	Blood Agar ↗	<i>Streptococcus pyogenes</i> . ↗	Basal medium plus blood, serum, or egg. Shows three types of hemolysis (α , β , γ). ↗ ↗
	Chocolate Agar ↗	<i>Neisseria gonorrhoeae</i> . ↗	Heated blood agar used for nutritionally "exacting" bacteria. ↗ ↗
Enrichment Media (Liquid) ↗ ↗	Selenite F Broth / Tetrathionate Broth ↗ ↗	Isolation of <i>Salmonella</i> and <i>Shigella</i> . ↗ ↗	Inhibits unwanted bacteria (like coliforms) to favor pathogens. ↗ ↗
	Alkaline Peptone Water ↗	Isolation of <i>Vibrio cholerae</i> . ↗	Stimulates growth of desired bacterium from mixed cultures. ↗
Selective Media (Solid) ↗ ↗	MacConkey's medium ↗	Gram-negative bacteria. ↗	Contains inhibitory substances to suppress unwanted organisms. ↗ ↗

**Selective
Media (Solid)**



**MacConkey's
medium**



Gram-negative bacteria.

Contains inhibitory substances to suppress unwanted organisms.



TCBS Agar



Vibrio cholerae.

Thiosulfate citrate bile salts sucrose agar.

LJ Medium



Mycobacterium tuberculosis.



Lowenstein-Jensen medium specifically for TB.

**Differential /
Indicator
Media**



**MacConkey
Agar**



Distinguishes Lactose fermenters (pink) from non-fermenters (colorless).



Contains Neutral red (indicator), lactose, and taurocholate.



**Wilson-Blair
Medium**



Salmonella typhi forms black colonies.

Changes color when a specific bacterium grows.

**McLeod's
Medium**



Diphtheria bacilli.

Uses Potassium tellurite as an indicator.

Urease Medium



Urease producing bacteria.

Medium turns pink due to NH_3 production.

Non-nutrient soft agar gel with

**Wilson-Blair
Medium** [↗](#)

Salmonella typhi forms black colonies. [↗](#)

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Medium** [↗](#)

Diphtheria bacilli. [↗](#)

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Urease Medium
[↗](#)

Urease producing bacteria.
[↗](#)

Medium turns pink due to NH_3 production. [↗](#)

**Transport
Media** [↗](#)
[↗](#)

Stuart's Medium
[↗](#)

Gonococci. [↗](#)

Non-nutrient soft agar gel with charcoal and a reducing agent.
[↗](#)

**Buffered
Glycerol Saline**
[↗](#)

Enteric bacilli. [↗](#)

Prevents delicate organisms from dying during transport. [↗](#)

UTM-RT [↗](#)

Viruses, ***Chlamydia***,
Mycoplasma, and
Ureaplasma. [↗](#)

Universal Transport Medium for clinical specimens. [↗](#)

Sugar Media
[↗](#)

**Peptone Water +
Sugar** [↗](#)

Detects gas-producing bacteria. [↗](#)

1% sugar plus indicator and a Durham's tube for gas detection.
[↗](#)