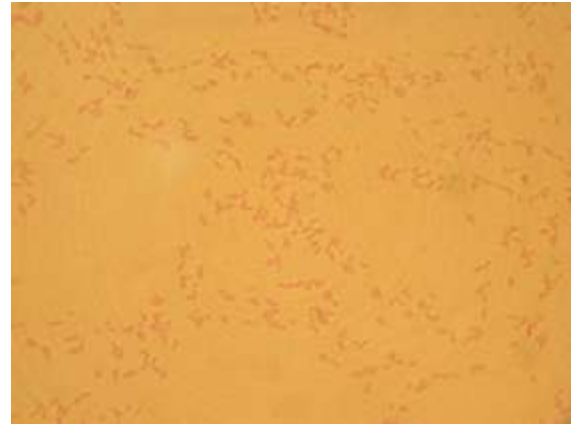


Gram Negative Rods - The Enterics

The Gram negative enterics are important both as natural flora in the intestinal tract and as pathogens of disease in the gastrointestinal tract and other sites. Four main families with numerous genera and species comprise the Gram negative enterics...Enterobacteriaceae, Pseudomonadaceae, Vibrionaceae, and Campylobacteraceae. You will only be working with organisms from the first two families.



There are several strategies for initially differentiating which Gram negative organism you have. Please note these characteristics are for the most common species and the ones you will be working with.

Almost every genus has species that exhibit other characteristics than those listed. The table below indicates the results of our strains of bacteria and how they respond to classical media tests. Click on a link to an organism to learn more about that specific organism. Click on a link to a media test to learn more about that specific media test. Click on a link to a specific result to see a picture and a more elaborate description of the reaction.

	<i>Escherichia coli</i>	<i>Klebsiella pneumoniae</i>	<i>Proteus vulgaris</i>	<i>Pseudomonas aeruginosa</i>	<i>Salmonella typhimurium</i>	<i>Shigella flexneri</i>
Macro morphology	Creamy/Tan Medium	Mucoid/Tan Medium	Translucent Diffusible	Translucent Diffusible	Creamy/Tan Medium	Creamy/Tan Medium
FTM	Facultative Anaerobe	Facultative Anaerobe	Facultative Anaerobe	Strict Aerobe	Facultative Anaerobe	Facultative Anaerobe
Motility	Motile	Non Motile	Motile	Motile	Motile	Non Motile
Catalase	Positive	Positive	Positive	Positive	Positive	Positive
Oxidase	Negative	Negative	Negative	Positive	Negative	Negative
Mac	Pink/Purple w/ precipitate	Purple/Yellow w/ precipitate	Colorless Yellow Media	Colorless Yellow Media	Colorless Yellow Media	Colorless Yellow Media
EMB	Black w/Green Metallic Sheen	Purple maybe Green Metallic Sheen	Colorless or Pink	Colorless or Pink	Colorless or Pink	Colorless or Pink
HEA	Yellow/Orange w/ precipitate Poor Growth	Yellow/Orange w/ precipitate Poor Growth	Yellow/Orange w/Black Centers precipitate	Clear Colonies Blue Media	Blue/Green w/Black Centers Blue Media	Clear Colonies Blue Media
MR/VP	+/-	+/-	+/-	-/-	+/-	+/-
Citrate	Negative	Variable	Negative	Positive	Positive	Negative
TSI	Yellow Slant Yellow Butt Gas	Yellow Slant Yellow Butt Gas	Yellow Slant Yellow Butt Gas, H₂S	Unchanged Slant & Butt	Red Slant Yellow Butt Gas, H₂S	Unchanged Slant Yellow Butt
Urea	Negative	Variable	Positive	Negative	Negative	Negative

Probable Results for Gram Negative Enteric Organisms

Click on a link to an organism to learn more about that specific organism. Click on a link to a media test to learn more about that specific media test. Click on a link to a specific result to see a picture and a more elaborate description of the reaction.