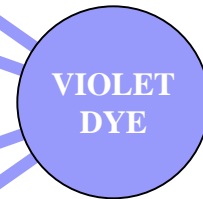
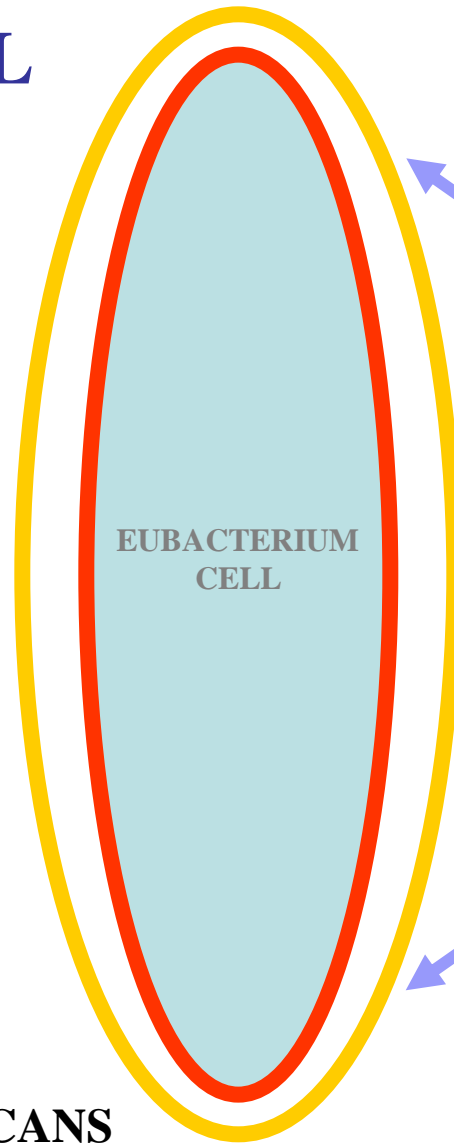


EUBACTERIUM CELL WALL

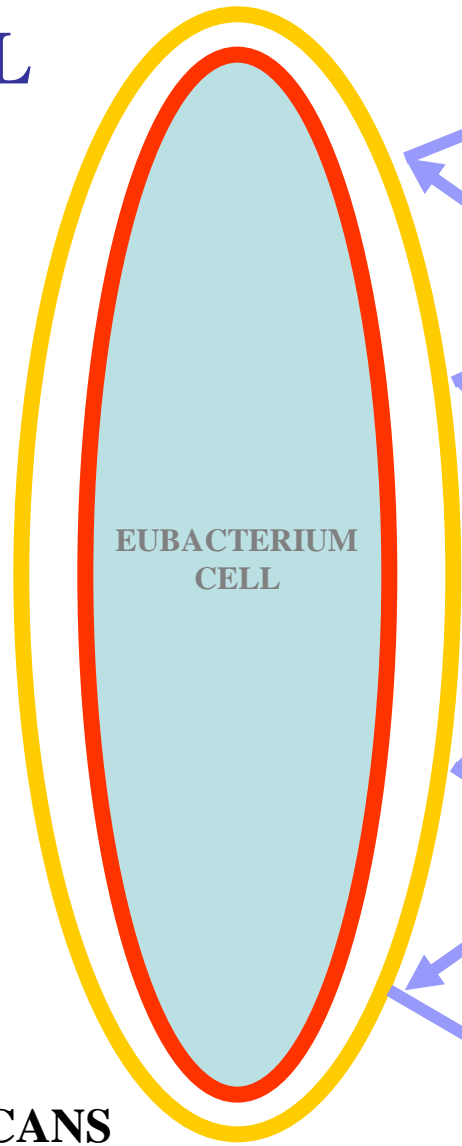
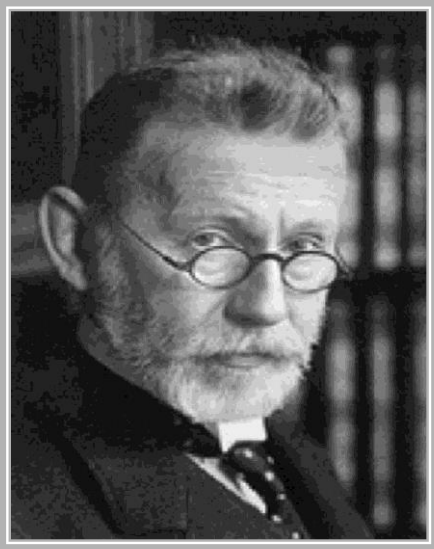
GRAM STAIN TEST



 = PEPTIDOGLYCANS

 = LIPOPOLYSACCHARIDES – **PRESENT**

EUBACTERIUM CELL WALL





**REPEL
VIOLET DYE**

D

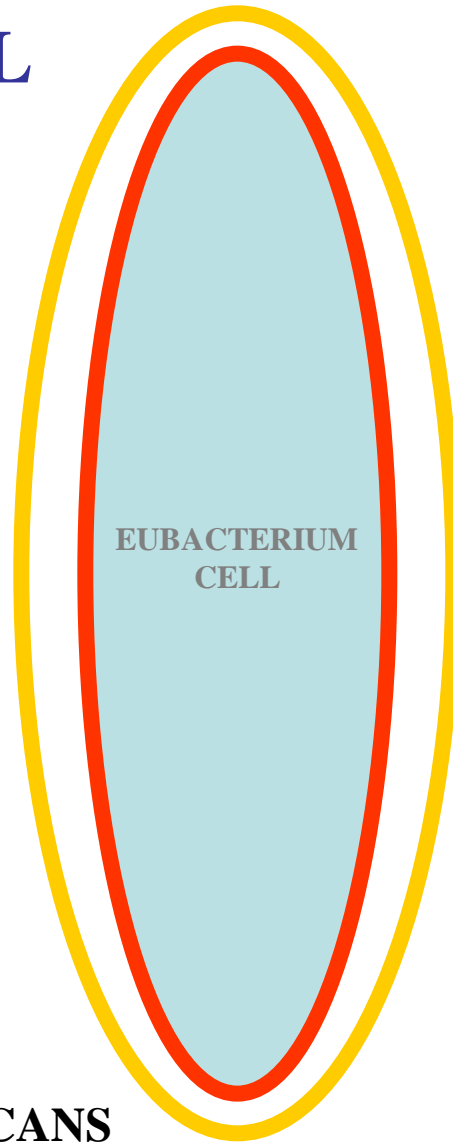
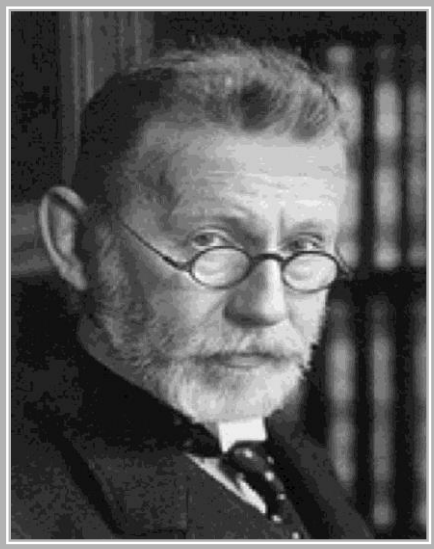
**VIOLET
DYE**

**REPEL
VIOLET DYE**

-  = PEPTIDOGLYCANS
-  = LIPOPOLYSACCHARIDES – **PRESENT**

EUBACTERIUM CELL WALL

GRAM STAIN TEST



**PEPTIDOGLYCANS
DO NOT ABSORB
VIOLET DYE**

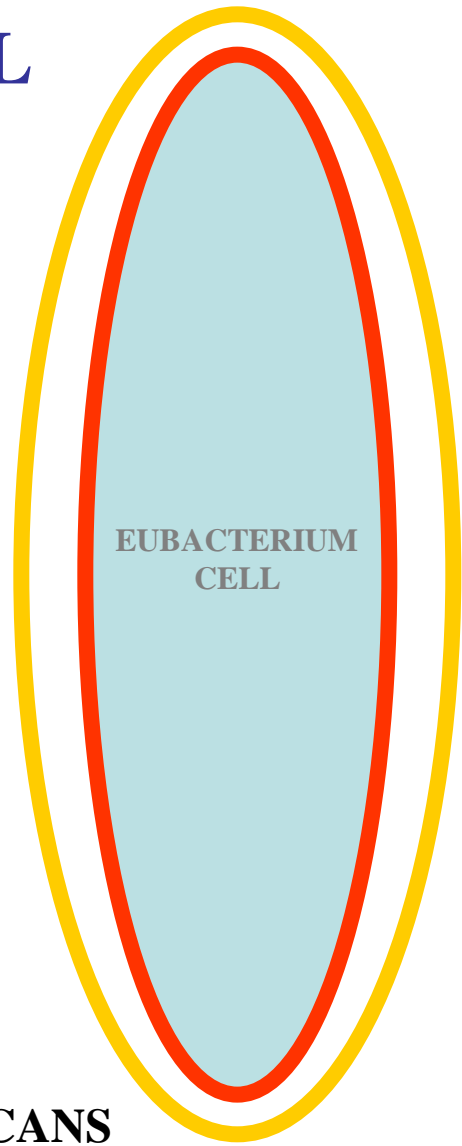
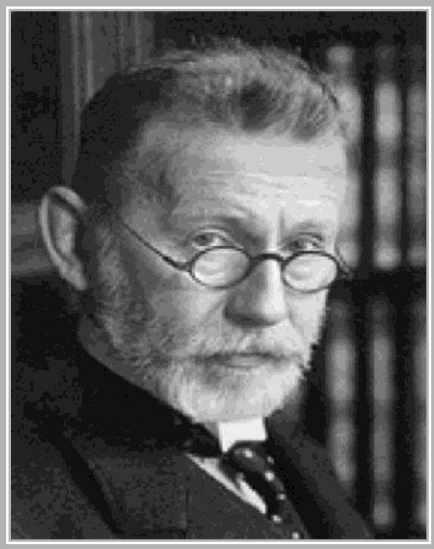
 = PEPTIDOGLYCANS

 = LIPOPOLYSACCHARIDES – **PRESENT**

EUBACTERIUM CELL WALL



GRAM STAIN TEST



**CELL WALL
DOES NOT TURN
VIOLET**

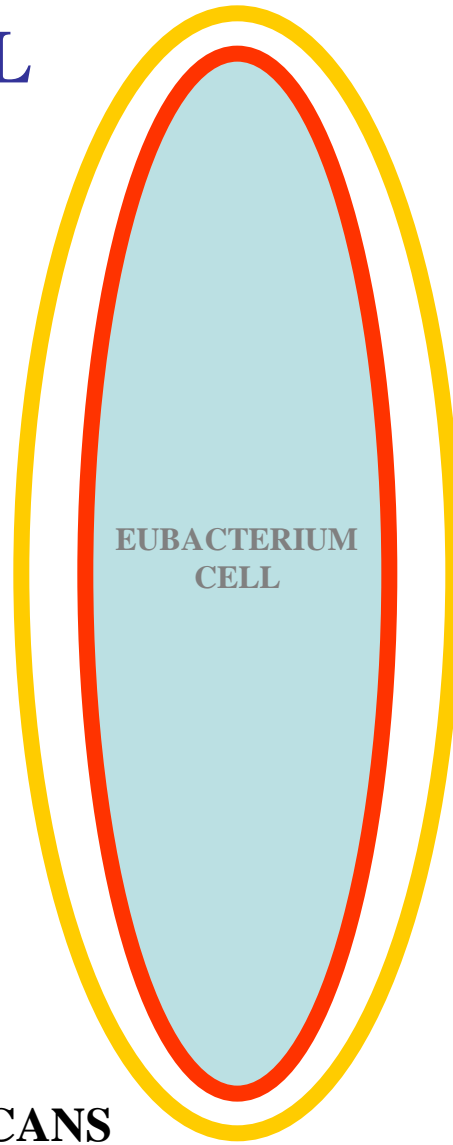
 = PEPTIDOGLYCANS

 = LIPOPOLYSACCHARIDES – **PRESENT**

EUBACTERIUM CELL WALL



GRAM STAIN TEST



**GRAM -
EUBACTERIUM**

 = PEPTIDOGLYCANS

 = LIPOPOLYSACCHARIDES – **PRESENT**

QUESTION

**WHY IS THE
GRAM STAIN TEST
IMPORTANT?**

QUESTION

ANSWER

**ANTIBIOTIC
USE**

ANSWER



GRAM STAIN TEST & ANTIBIOTIC USE



THROAT CULTURE

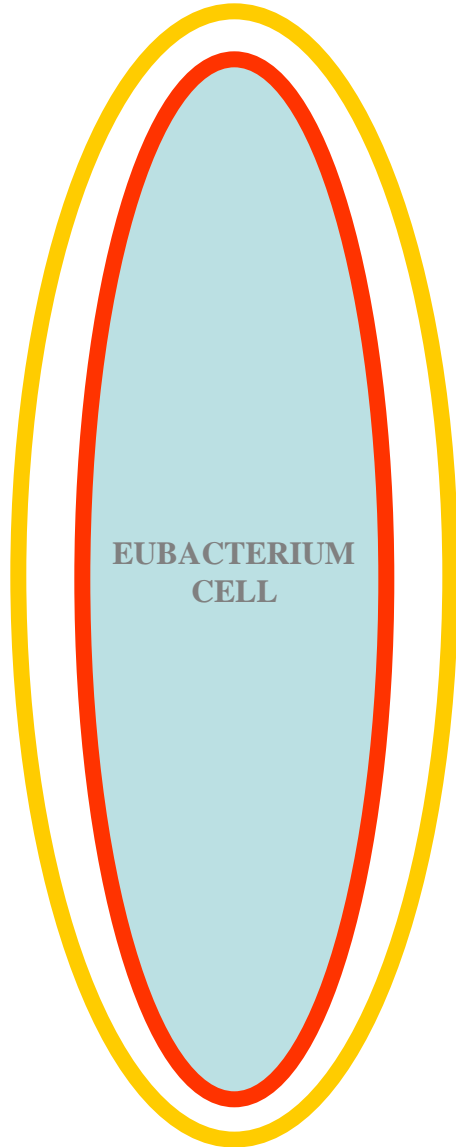




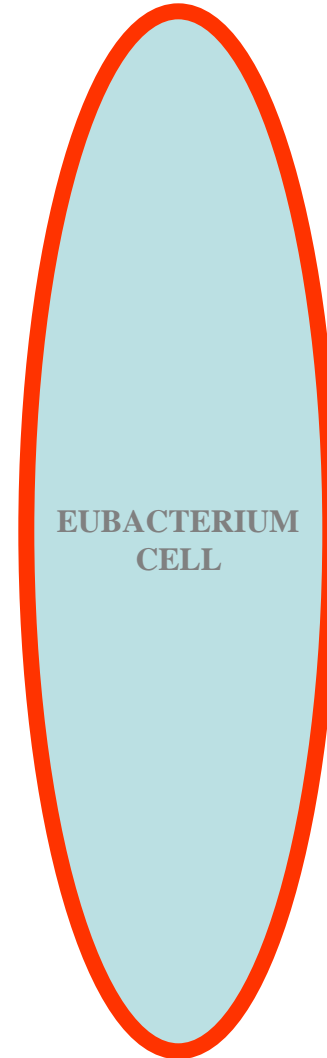
GRAM STAIN TEST

GRAM - EUBACTERIUM

GRAM + EUBACTERIUM



EUBACTERIUM
CELL



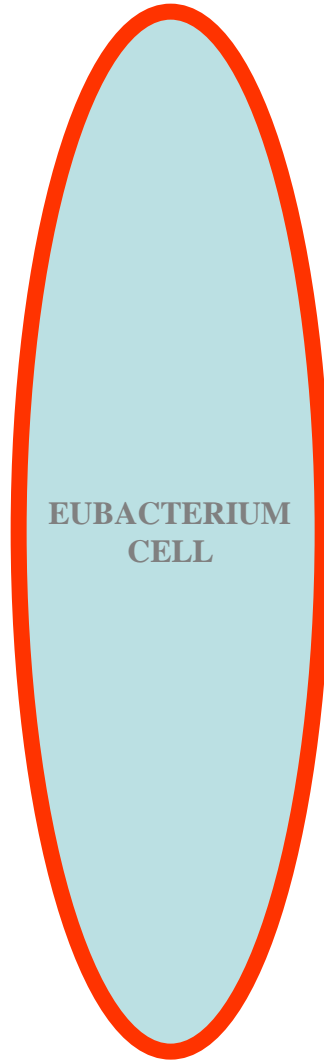
EUBACTERIUM
CELL

**GRAM STAIN
TEST**



GRAM + EUBACTERIUM



CELL WALL
LIPOPOLYSACCHARIDES
ABSENT



CELL WALL
LIPOPOLYSACCHARIDES
ABSENT

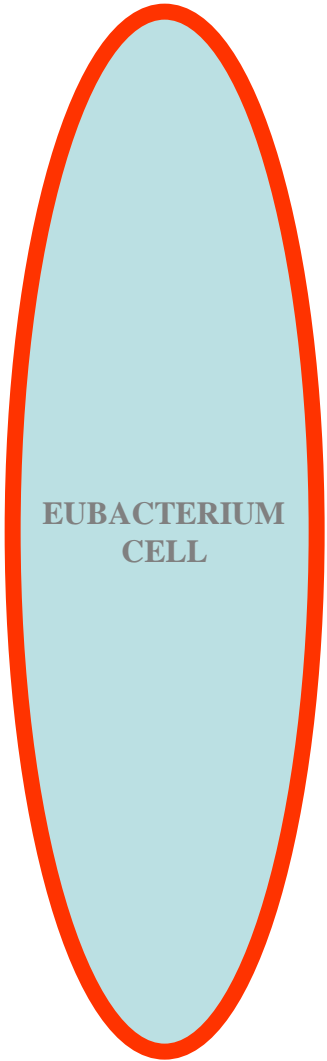
-  = PEPTIDOGLYCANS
-  = LIPOPOLYSACCHARIDES





GRAM + EUBACTERIUM



CELL WALL
PEPTIDOGLYCANS
EXPOSED



CELL WALL
PEPTIDOGLYCANS
EXPOSED

-  = PEPTIDOGLYCANS
-  = LIPOPOLYSACCHARIDES



GRAM + EUBACTERIUM

AT



ANTIBIOTIC



EUBACTERIUM
CELL



ANTIBIOTIC

 = PEPTIDOGLYCANS

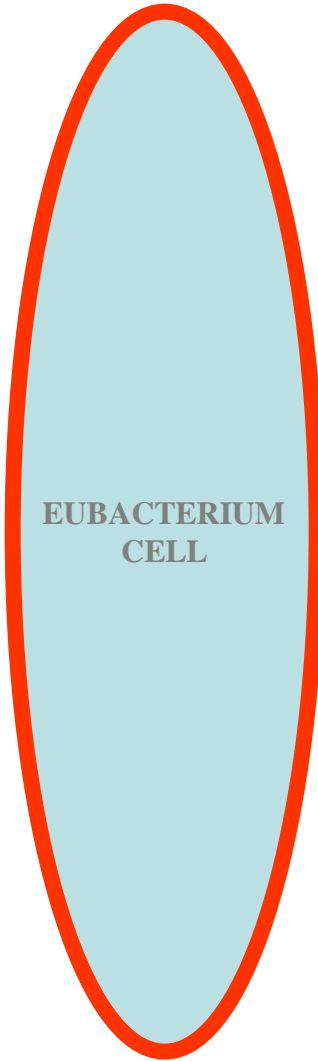
 = LIPOPOLYSACCHARIDES



GRAM + EUBACTERIUM



ANTIBIOTIC
ATTACKS
PEPTIDOGLYCAN
CELL WALL



ANTIBIOTIC
ATTACKS
PEPTIDOGLYCAN
CELL WALL

 = PEPTIDOGLYCANS

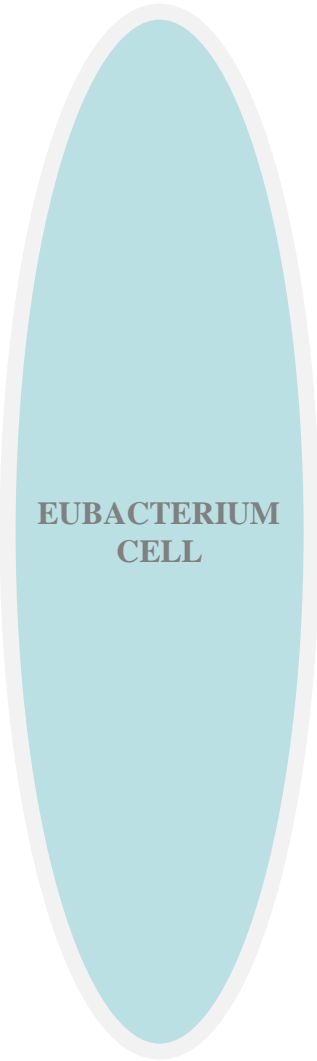
 = LIPOPOLYSACCHARIDES





GRAM + EUBACTERIUM



ANTIBIOTIC
ATTACKS
PEPTIDOGLYCAN
CELL WALL



ANTIBIOTIC
ATTACKS
PEPTIDOGLYCAN
CELL WALL

-  = PEPTIDOGLYCANS
-  = LIPOPOLYSACCHARIDES



GRAM + EUBACTERIUM



ANTIBIOTIC
ATTACKS
PEPTIDOGLYCAN
CELL WALL

EUBACTERIUM
DIES

ANTIBIOTIC
ATTACKS
PEPTIDOGLYCAN
CELL WALL

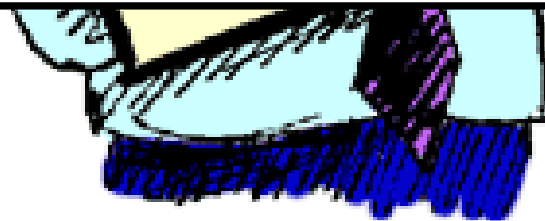
 = PEPTIDOGLYCANS

 = LIPOPOLYSACCHARIDES





**SORE THROAT
FEELS BETTER**

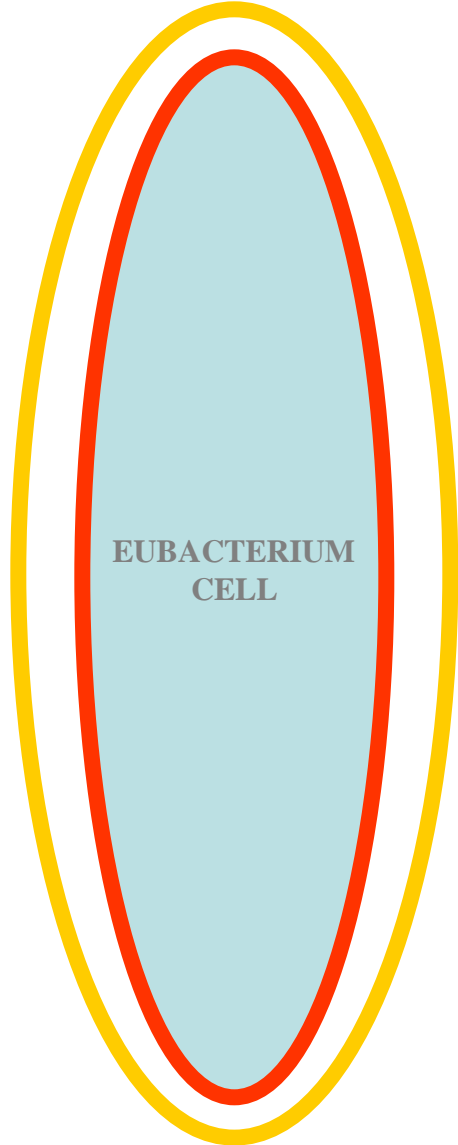




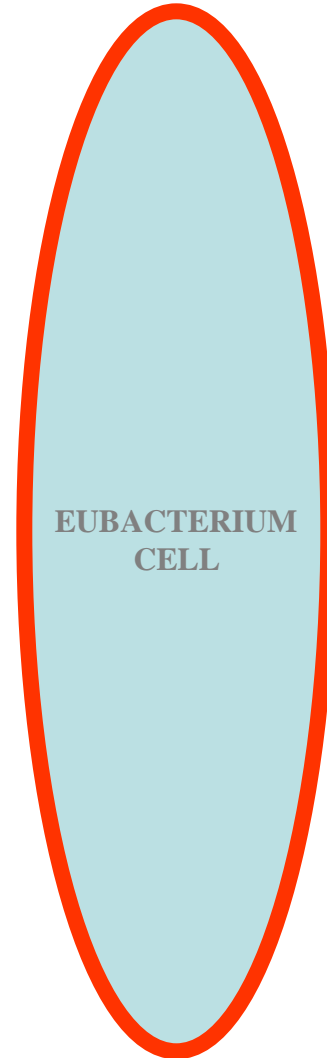
GRAM STAIN TEST

GRAM - EUBACTERIUM

GRAM + EUBACTERIUM



EUBACTERIUM
CELL



EUBACTERIUM
CELL

GRAM STAIN TEST

GRAM - EUBACTERIUM



CELL WALL
LIPOPOLYSACCHARIDES
PRESENT

EUBACTERIUM
CELL

CELL WALL
LIPOPOLYSACCHARIDES
PRESENT

 = PEPTIDOGLYCANS

 = LIPOPOLYSACCHARIDES



GRAM - EUBACTERIUM



G+

CELL WALL
PEPTIDOGLYCANS
NON-EXPOSED

EUBACTERIUM
CELL

CELL WALL
PEPTIDOGLYCANS
NON-EXPOSED

 = PEPTIDOGLYCANS

 = LIPOPOLYSACCHARIDES

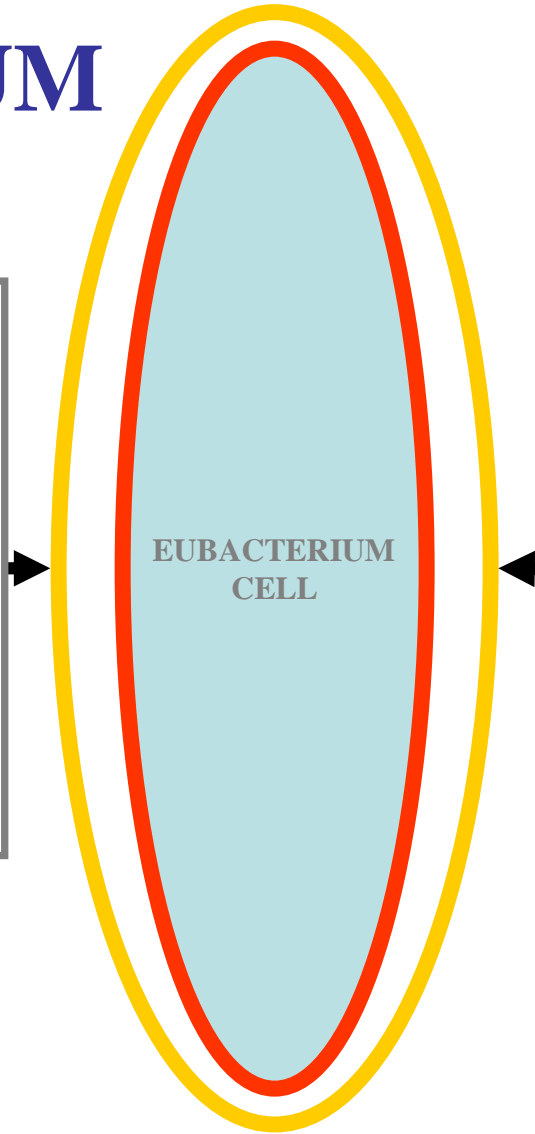


GRAM - EUBACTERIUM

DF



GRAM +
ANTIBIOTIC
CANNOT
ATTACK
PEPTIDOGLYCAN
CELL WALL



GRAM +
ANTIBIOTIC
CANNOT
ATTACK
PEPTIDOGLYCAN
CELL WALL

 = PEPTIDOGLYCANS

 = LIPOPOLYSACCHARIDES



GRAM - EUBACTERIUM

AT



DIFFERENT
ANTIBIOTIC

EUBACTERIUM
CELL

DIFFERENT
ANTIBIOTIC

 = PEPTIDOGLYCANS

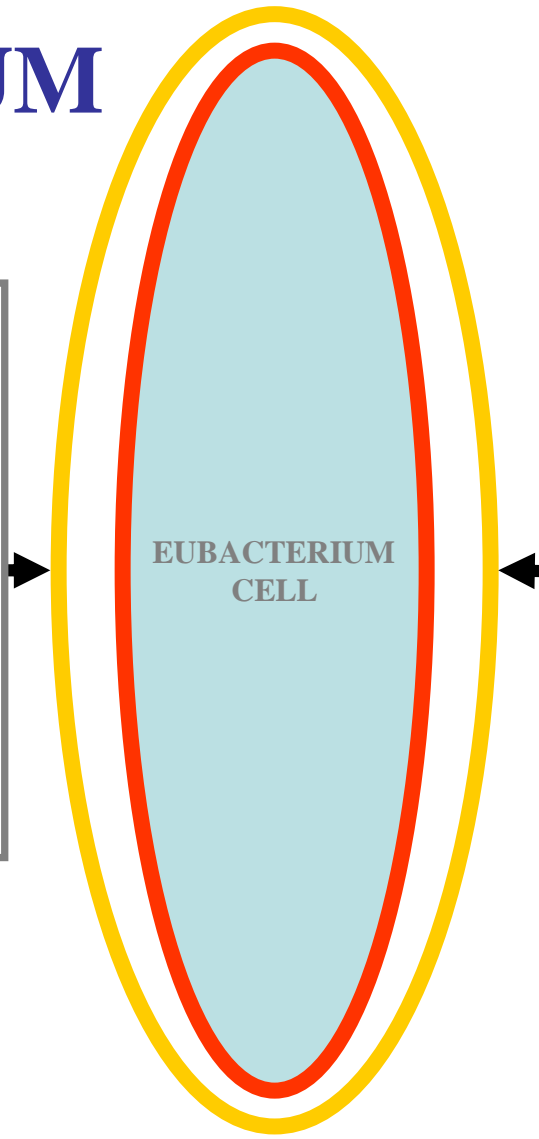
 = LIPOPOLYSACCHARIDES





GRAM - EUBACTERIUM



ANTIBIOTIC
ATTACKS
CELL
RIBOSOMES



ANTIBIOTIC
ATTACKS
CELL
RIBOSOMES

-  = PEPTIDOGLYCANS
-  = LIPOPOLYSACCHARIDES



GRAM - EUBACTERIUM



ANTIBIOTIC
ATTACKS
CELL
RIBOSOMES

EUBACTERIUM
DIES

ANTIBIOTIC
ATTACKS
CELL
RIBOSOMES

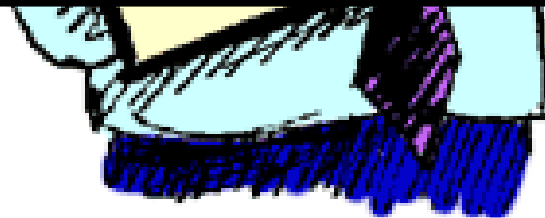
 = PEPTIDOGLYCANS

 = LIPOPOLYSACCHARIDES





**SORE THROAT
FEELS BETTER**



QUESTION

**WHY IS THE
GRAM STAIN TEST
IMPORTANT?**

QUESTION



ANSWER

GRAM STAIN TEST

DETERMINES

CORRECT

ANTI-BIOTIC

ANSWER

QUESTION

**ARE ANTIBIOTICS
UNDER OR OVER
PRESCRIBED?**

QUESTION



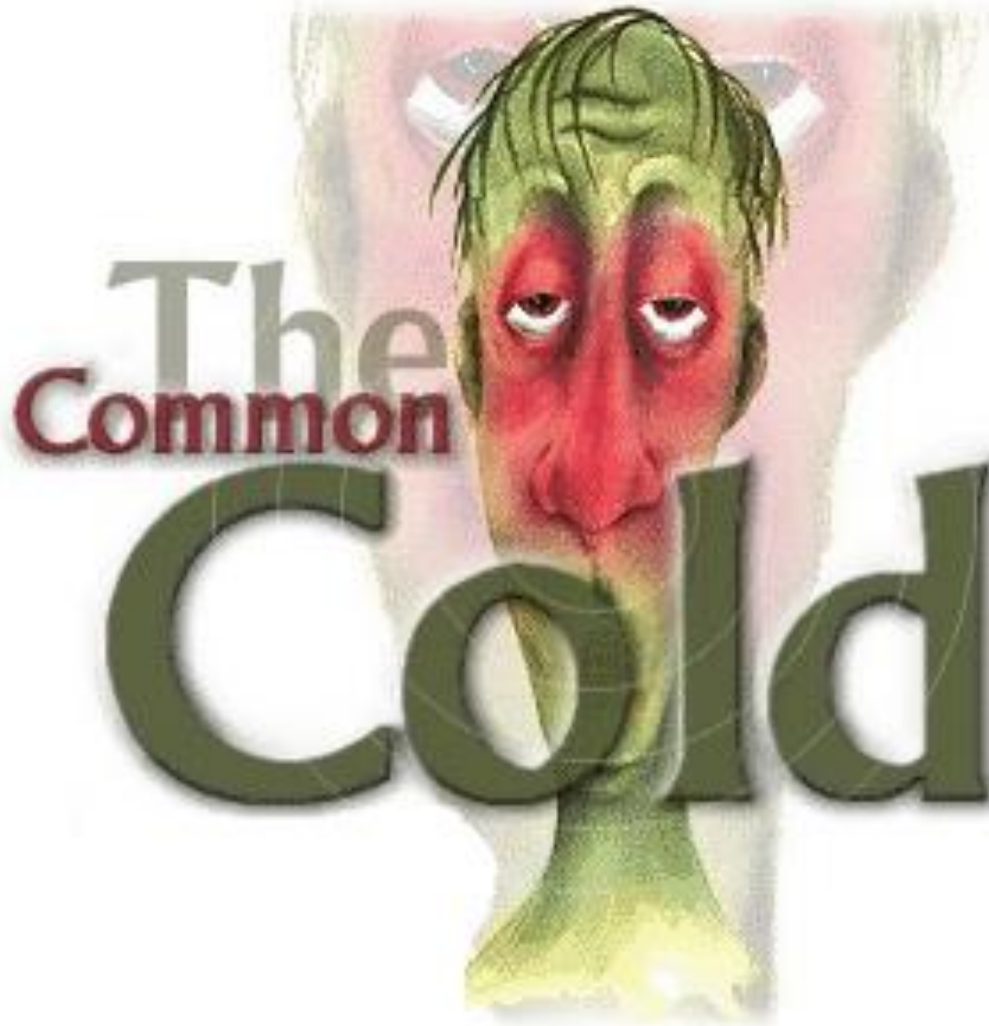
ANSWER

**ANTIBIOTICS
ARE OVER
PRESCRIBED**

ANSWER

Educating Parents Key To Reducing Antibiotic Overuse

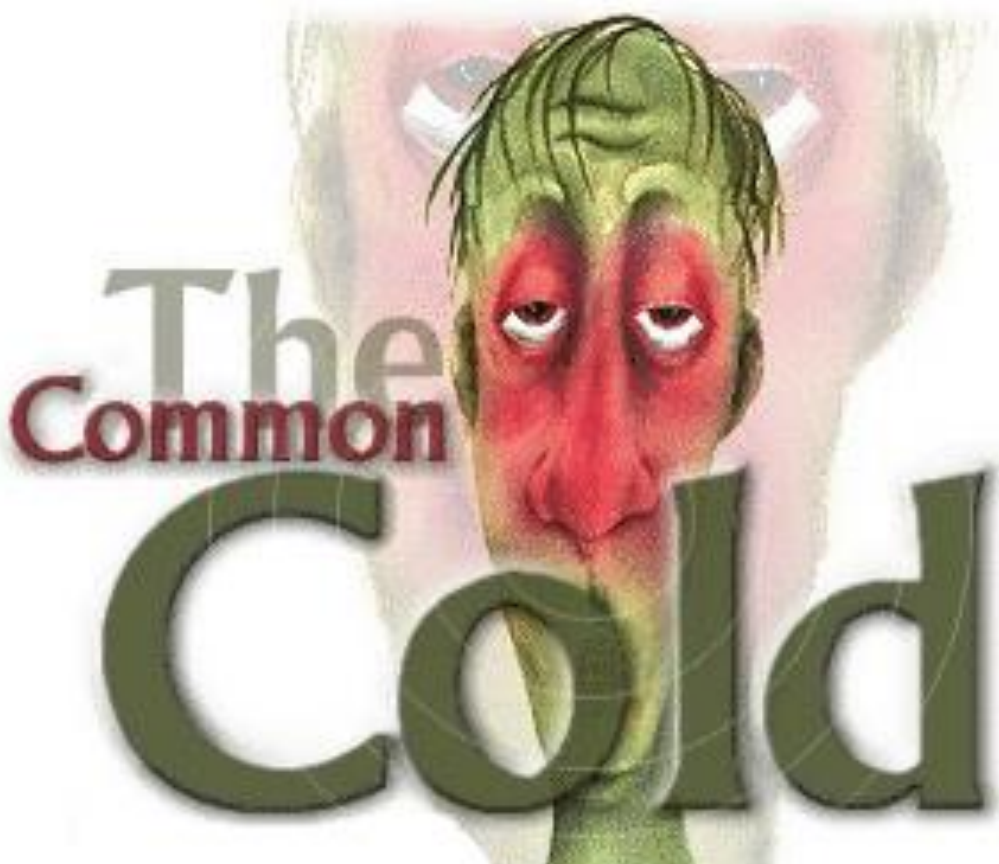
American Academy Of Pediatrics





Educating Parents Key To Reducing Antibiotic Overuse

American Academy Of Pediatrics



VIRUS INFECTION

QUESTION

**ARE ANTIBIOTICS
EFFECTIVE AGAINST
VIRUS INFECTIONS?**

QUESTION

ANSWER

NO

ANSWER





*ANTIBIOTICS
INEFFECTIVE
AGAINST
VIRUS
INFECTIONS*



*ANTIBIOTICS
EFFECTIVE
AGAINST
BACTERIA
INFECTIONS*

VIRUS INFECTION



COMMON COLD

VIRUS INFECTION

ANTIBIOTICS

DOCTORS

OVER

PRESCRIBE





ANTIBIOTICS

BACTERIA

BECOMING

IMMUNE

GET SMART ABOUT ANTIBIOTIC USE

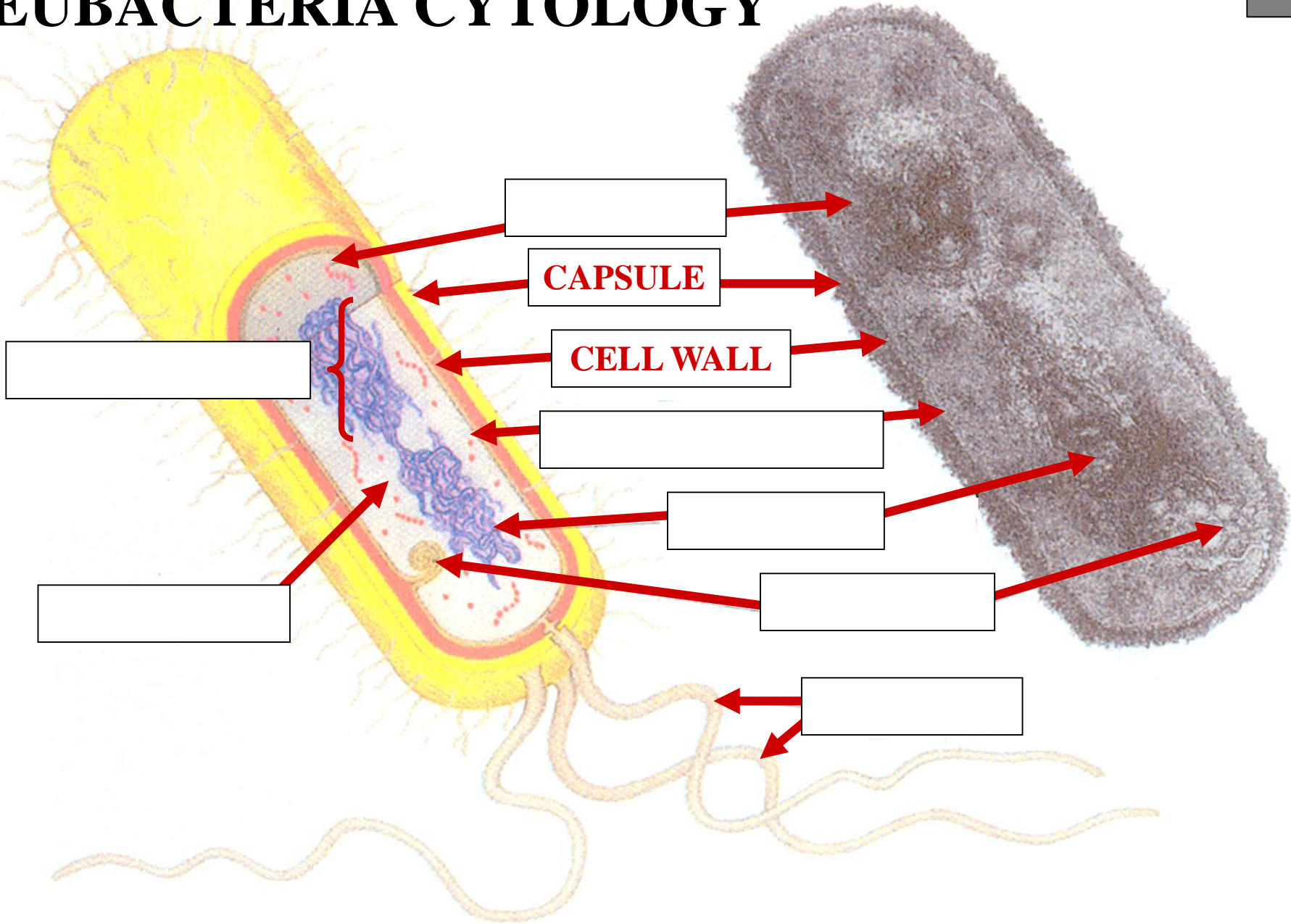


COMMON COLD



GET SMART ABOUT ANTIBIOTIC USE

EUBACTERIA CYTOLOGY



PROTOPLAST

PROTOPLAST

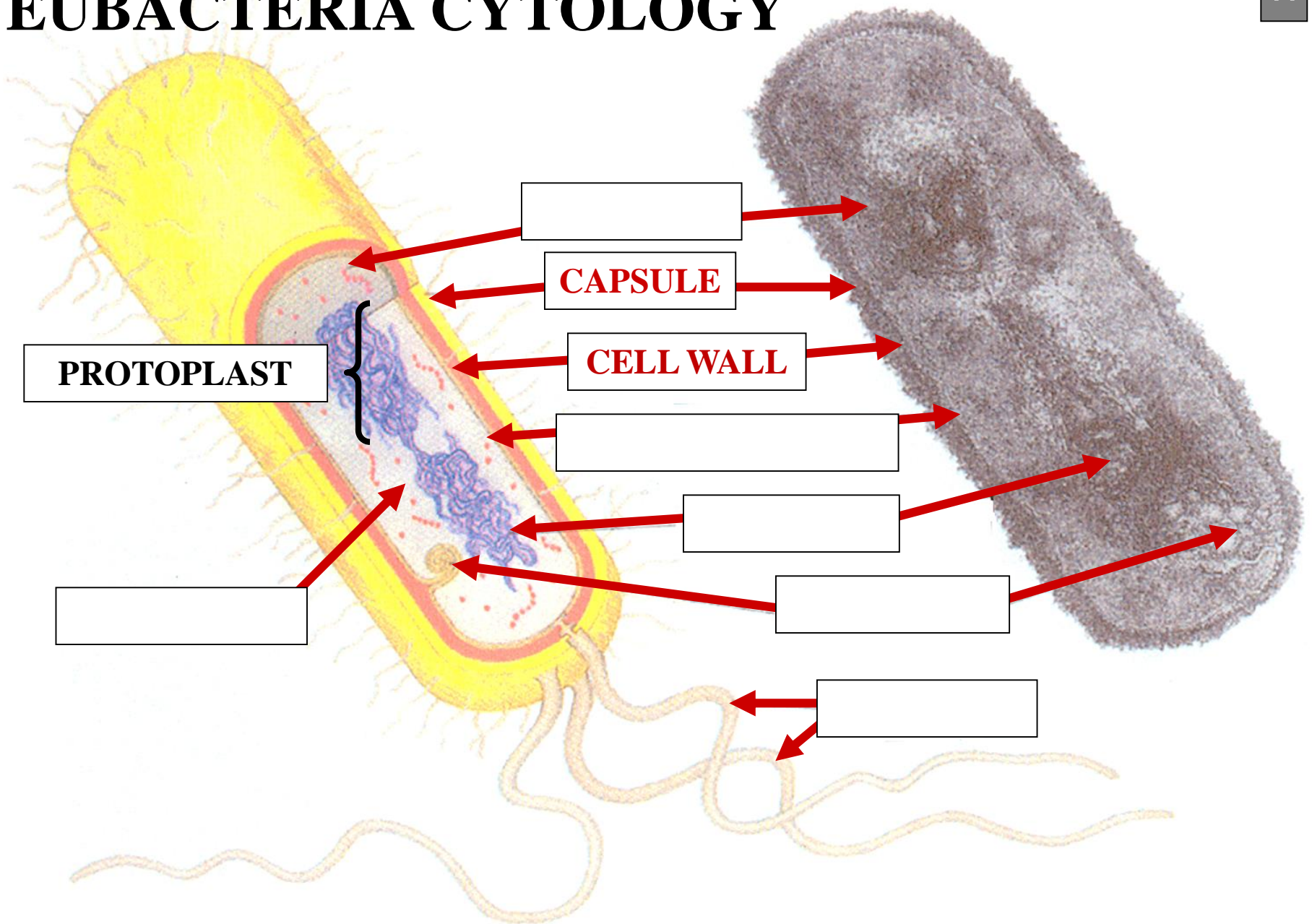


PROTOPLAST

**LIVING CONTENT
BEYOND CELL WALL**

PROTOPLAST

EUBACTERIA CYTOLOGY



CELL MEMBRANE

CELL MEMBRANE



CELL MEMBRANE

**OUTER PROTOPLAST
BOUNDARY**

CELL MEMBRANE



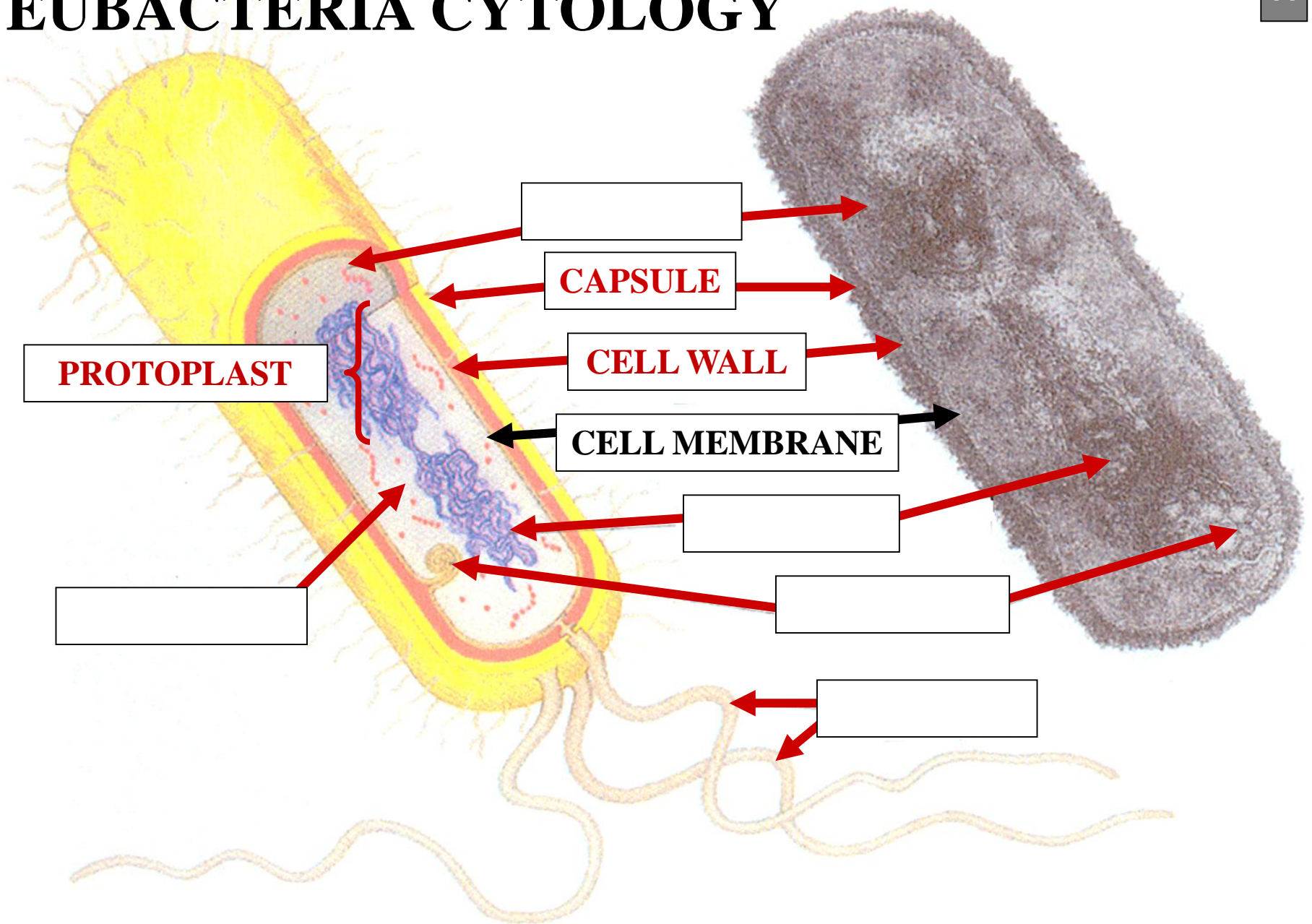
CELL MEMBRANE

**OUTER PROTOPLAST
BOUNDARY**

**MEDIATES TRANSPORT
INTO & OUT OF CELL**

CELL MEMBRANE

EUBACTERIA CYTOLOGY



MESOSOMES

MESOSOMIE



MESOSOME

CELL MEMBRANE INVAGINATION

MESOSOME



MESOSOME

CELL MEMBRANE INVAGINATION

INCREASES SURFACE AREA

MESOSOME



MESOSOME

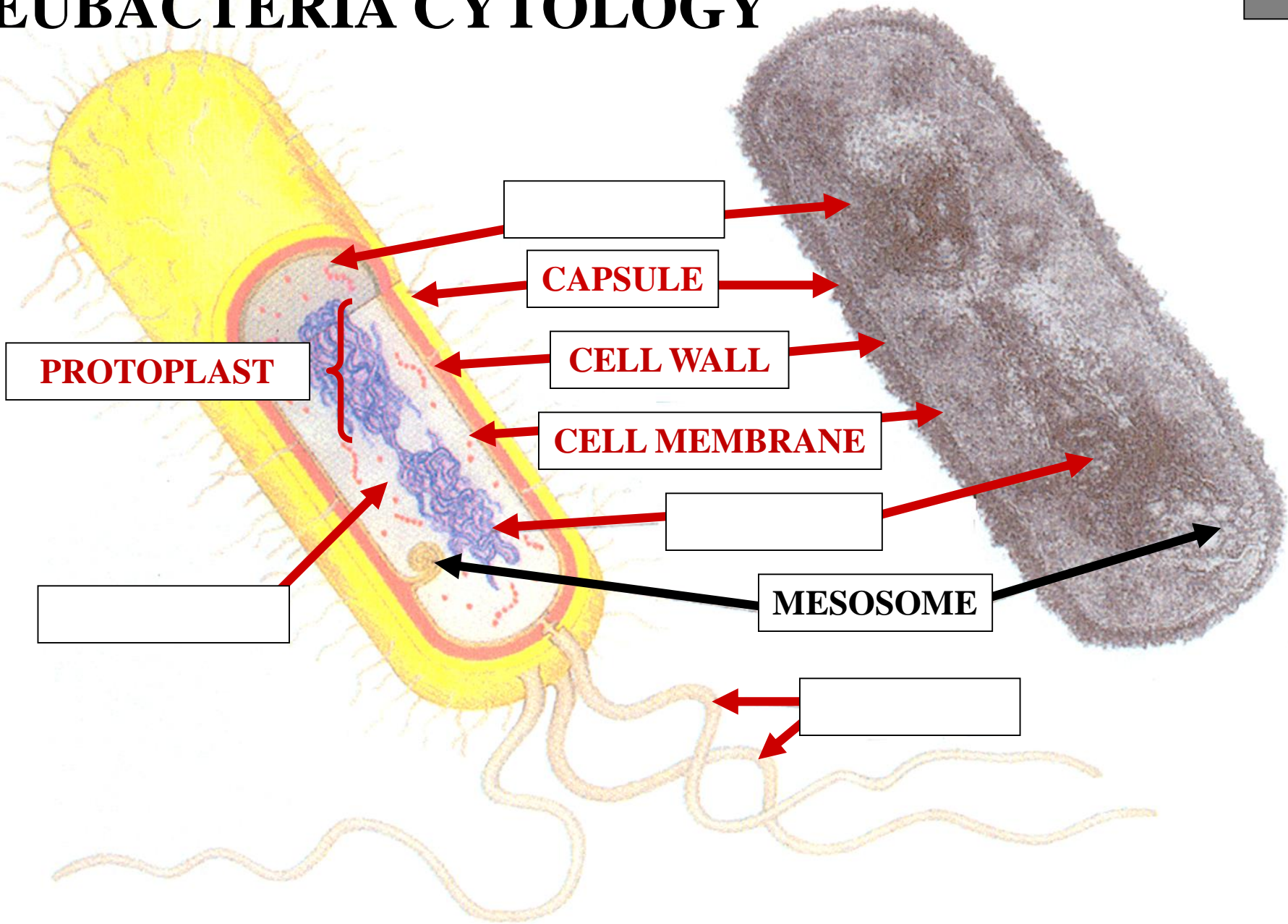
CELL MEMBRANE INVAGINATION

INCREASES SURFACE AREA

INCREASES FUNCTIONAL CAPACITY

MESOSOME

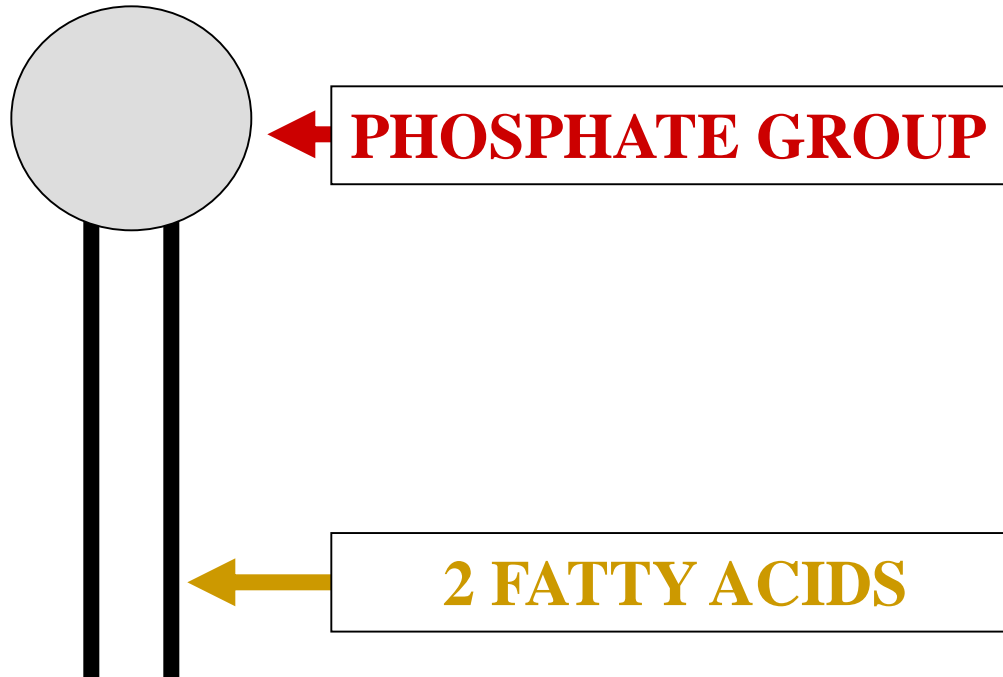
EUBACTERIA CYTOLOGY





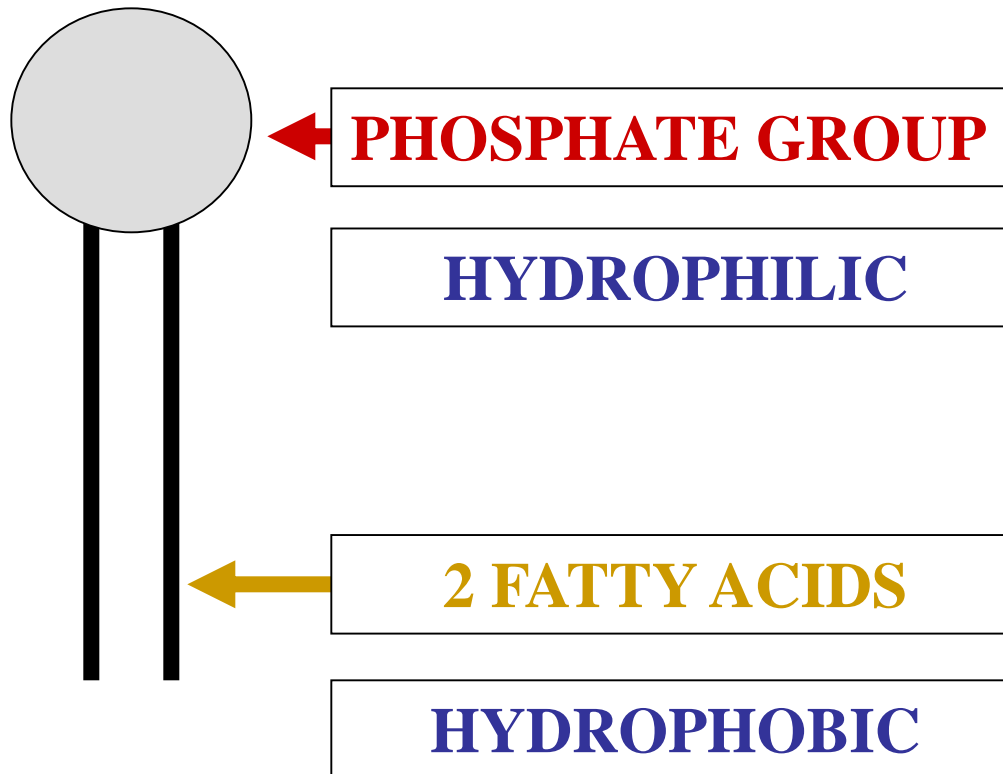
CELL MEMBRANE COMPOSITION

CELL MEMBRANE COMPOSITION



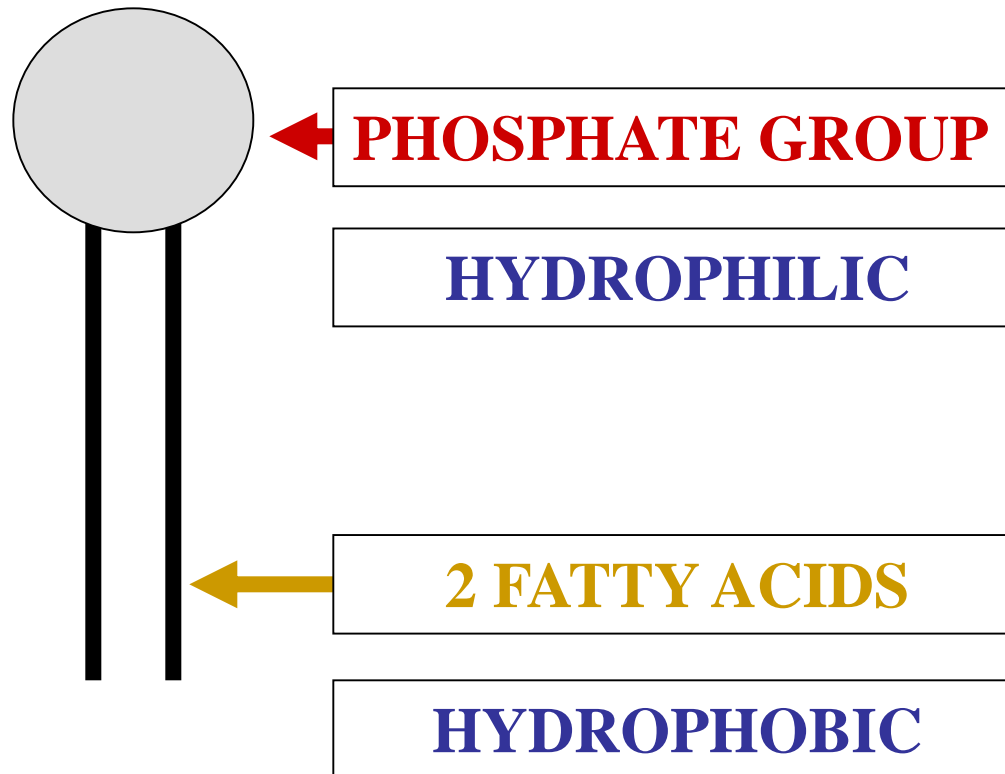
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CELL MEMBRANE COMPOSITION



PHOSPHOLIPID

CELL MEMBRANE COMPOSITION



PHOSPHOLIPID: AMPHIPATHIC



AQUEOUS SOLUTION

PROKARYOTE

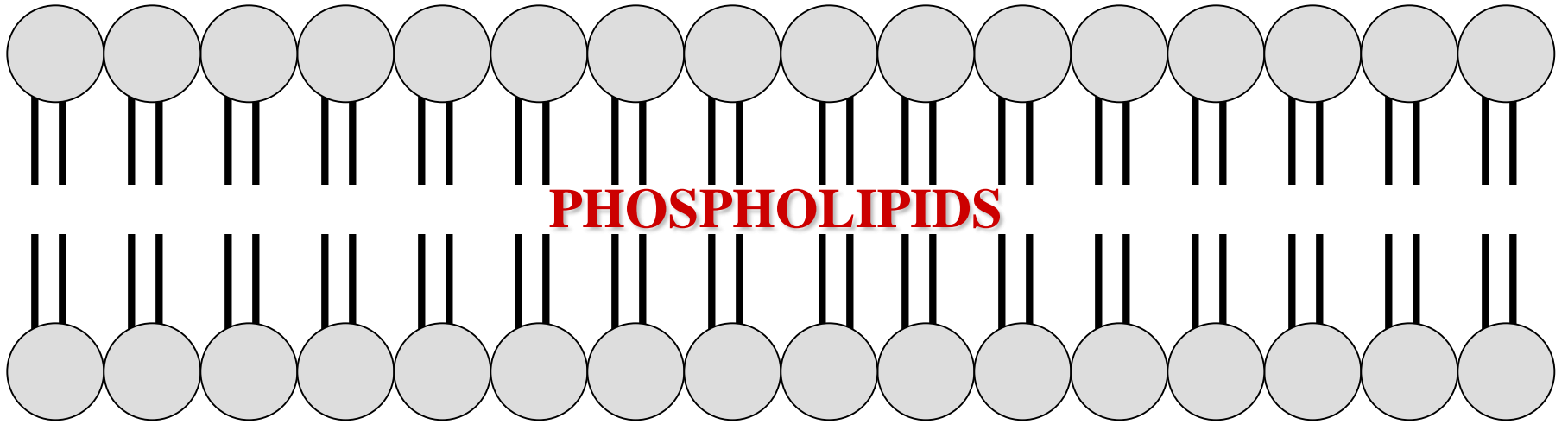
CELL MEMBRANE COMPOSITION



WATER

WATER

WATER



PHOSPHOLIPIDS

WATER

WATER

WATER

CELL MEMBRANE COMPOSITION

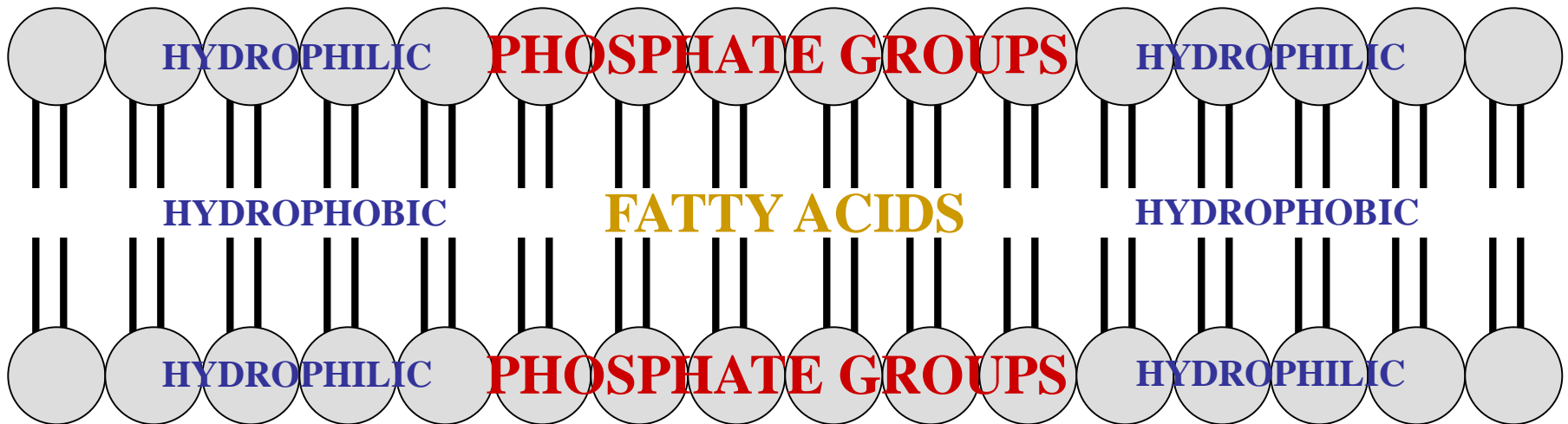
CELL MEMBRANE COMPOSITION



WATER

WATER

WATER



WATER

WATER

WATER

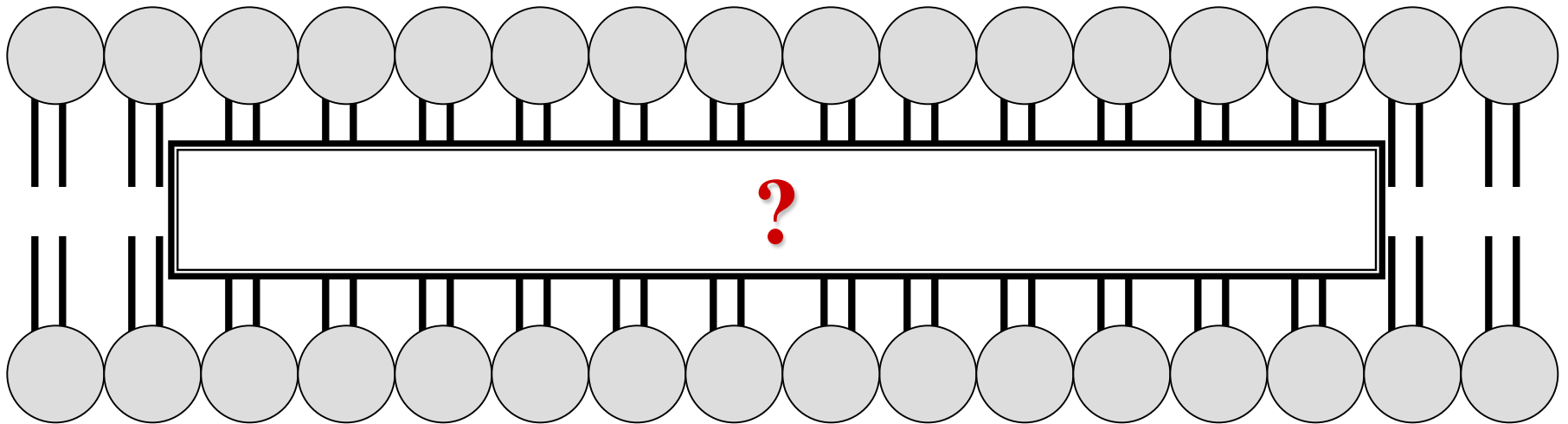
CELL MEMBRANE COMPOSITION

CELL MEMBRANE COMPOSITION

WATER

WATER

WATER



WATER

WATER

WATER

CELL MEMBRANE COMPOSITION

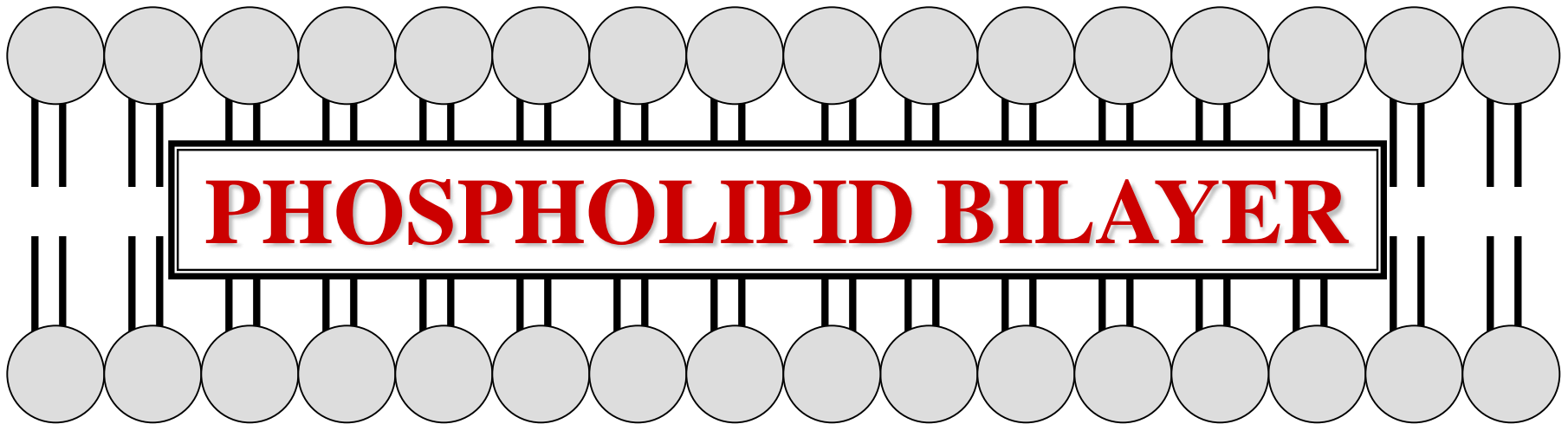
CELL MEMBRANE COMPOSITION



WATER

WATER

WATER



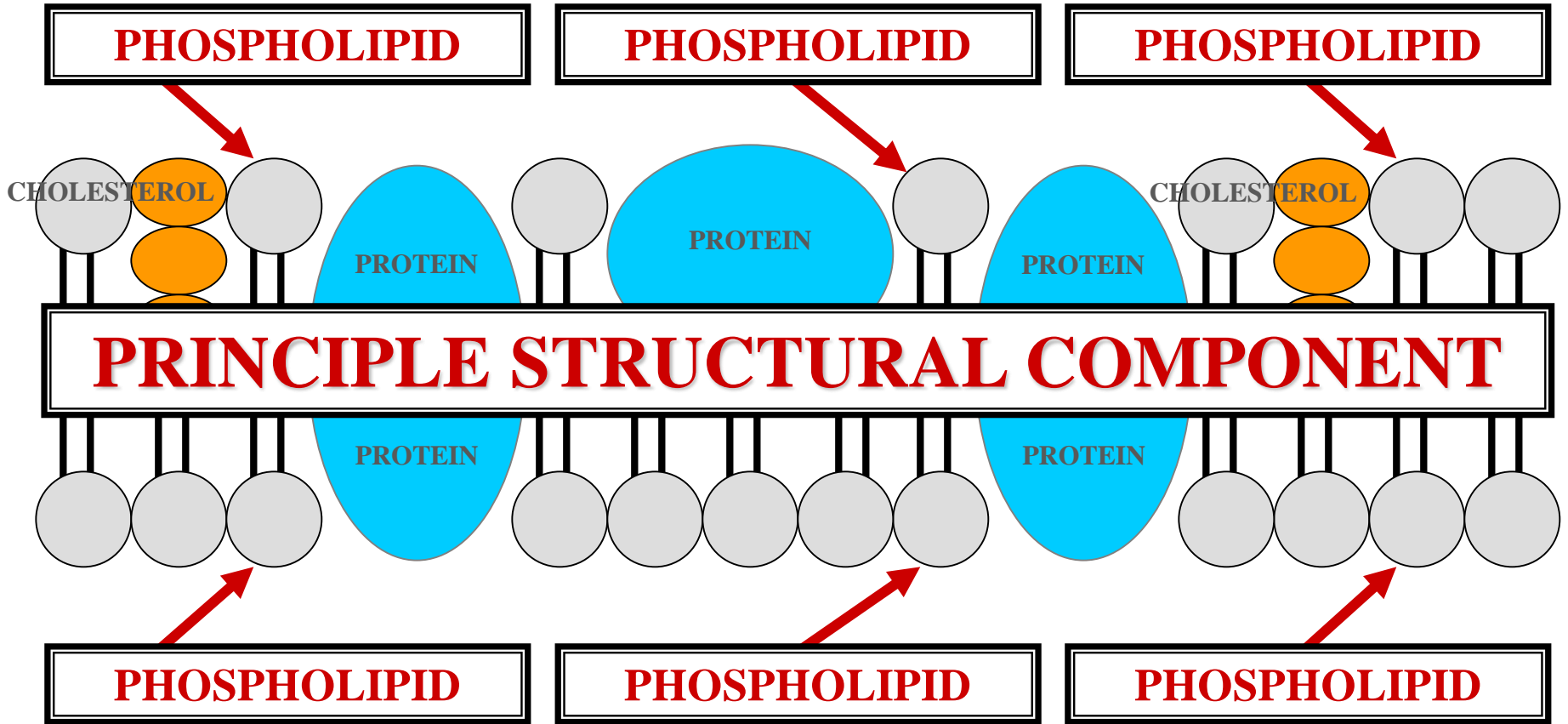
WATER

WATER

WATER

CELL MEMBRANE COMPOSITION

BIO-MEMBRANE STRUCTURE



BIO-MEMBRANE STRUCTURE

CYTOPLASM

CYTOPLASM

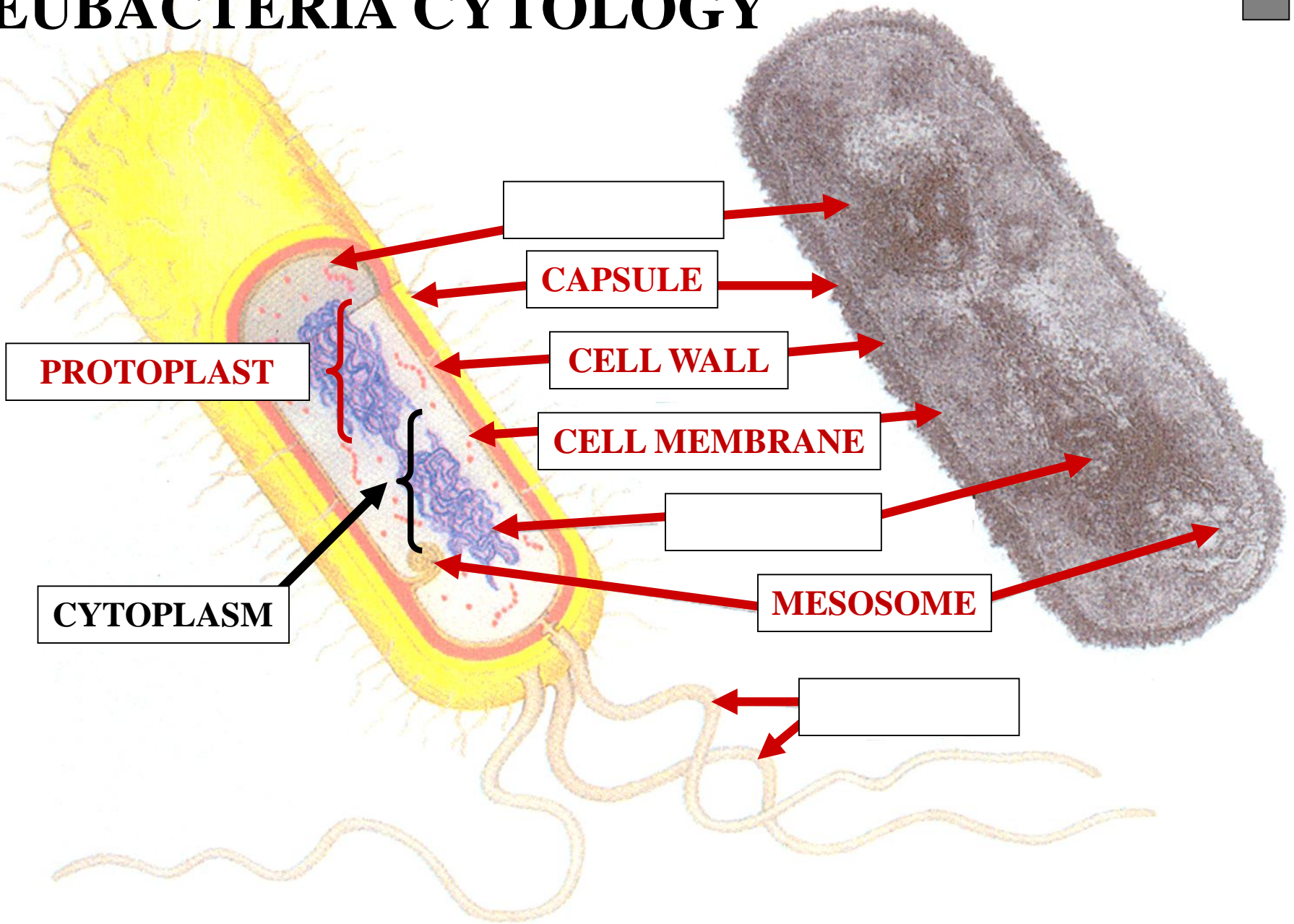


CYTOPLASM

**CONTENT BEYOND
CELL MEMBRANE**

CYTOPLASM

EUBACTERIA CYTOLOGY



CYTOPLASM COMPONENTS

CYTOPLASM COMPONENTS

CYTOSOL

CYTOPLASM COMPONENTS

CYTOPLASM COMPONENTS

**CYTOSOL
ORGANELLES**

**CYTOPLASM
COMPONENTS**

CYTOSOL

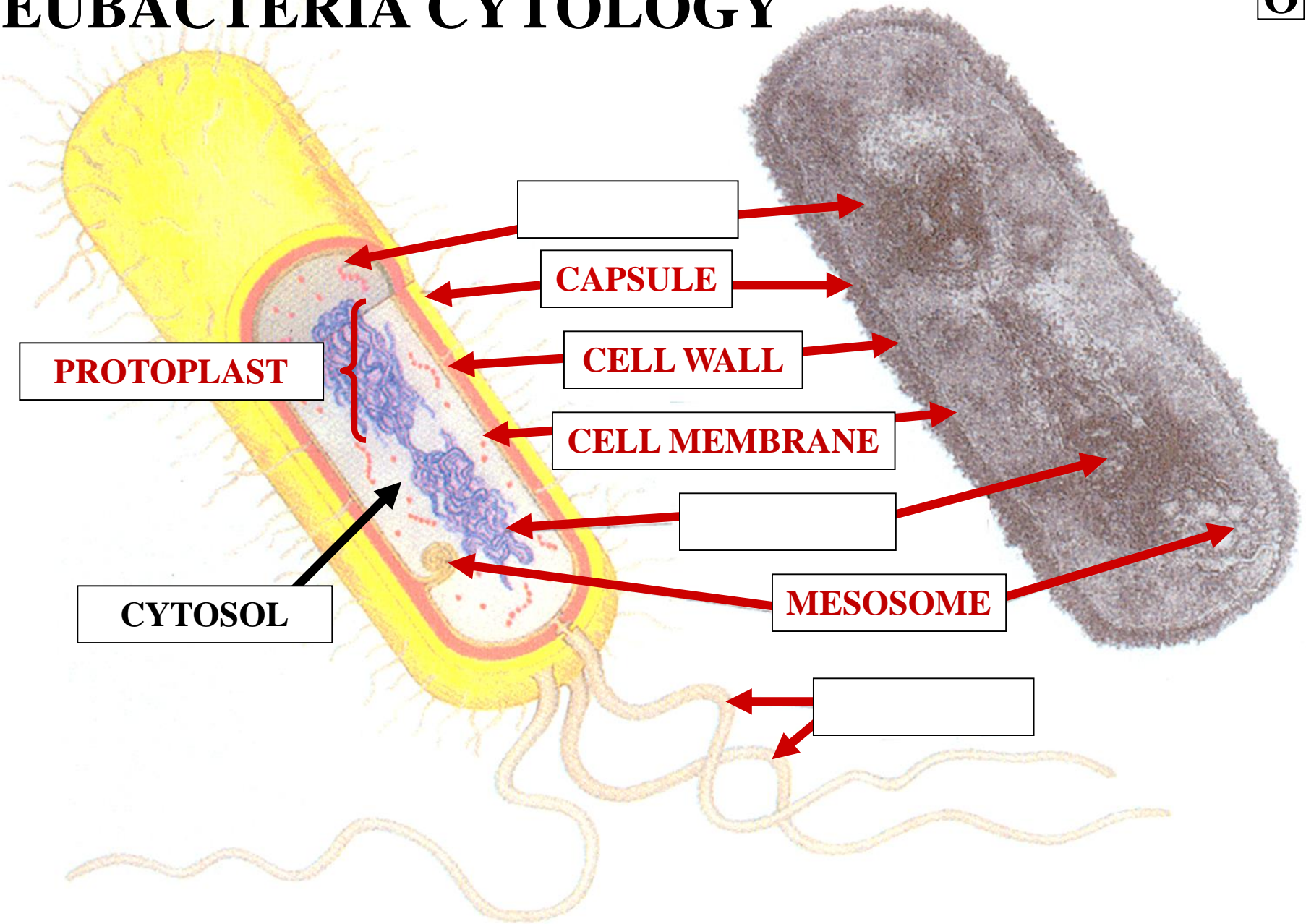


CYTOSOL

FLUID MATRIX

CYTOSOL

EUBACTERIA CYTOLOGY



ORGANELLES



ORGANELLES

**SPECIALIZED ENTITIES
WITHIN CYTOSOL**

ORGANELLES



ORGANELLES

SPECIALIZED ENTITIES

ISOLATE

NON-COMPATIBLE

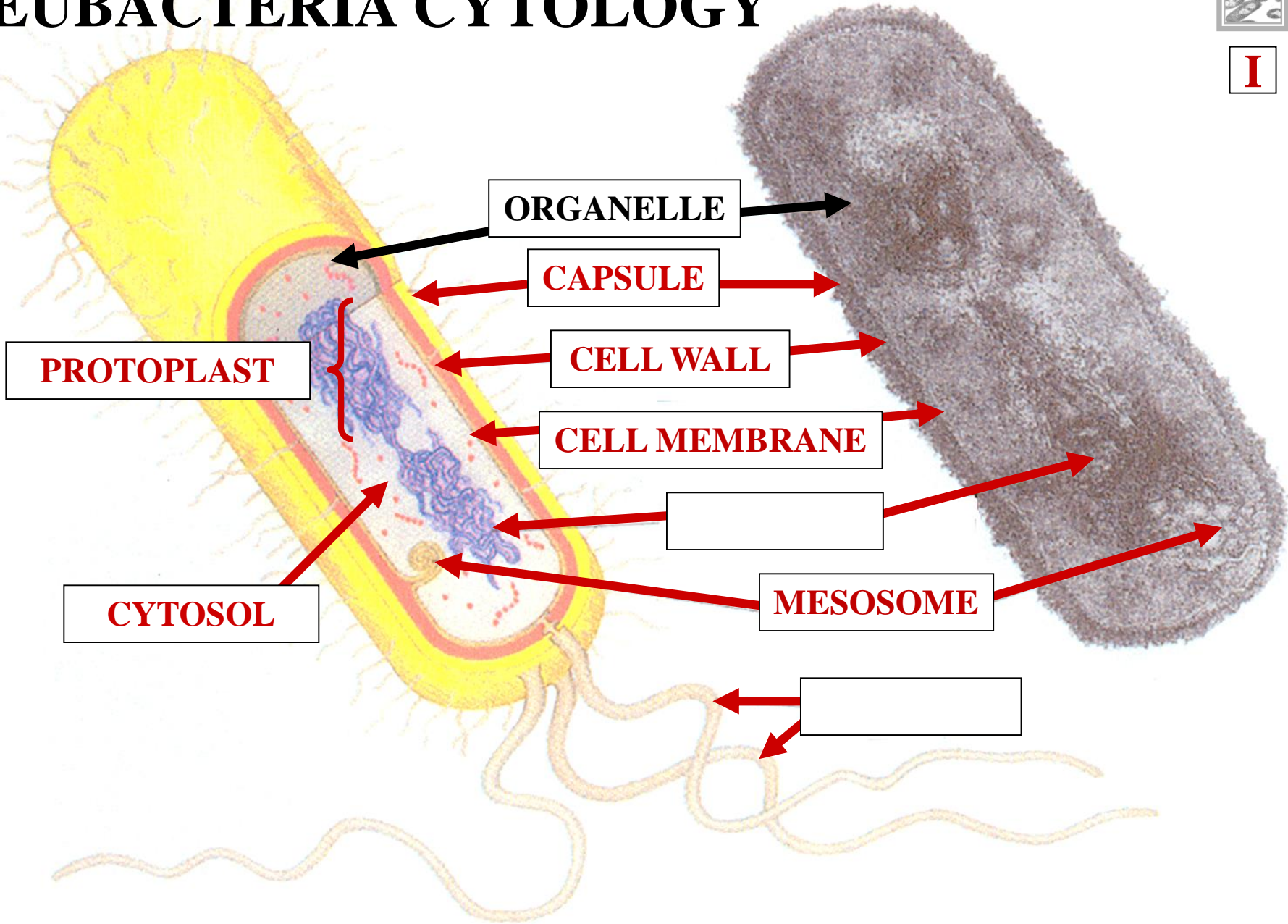
BIO-CHEMICAL RXTS

ORGANELLES

EUBACTERIA CYTOLOGY



I



ORGANELLES

ISOLATE

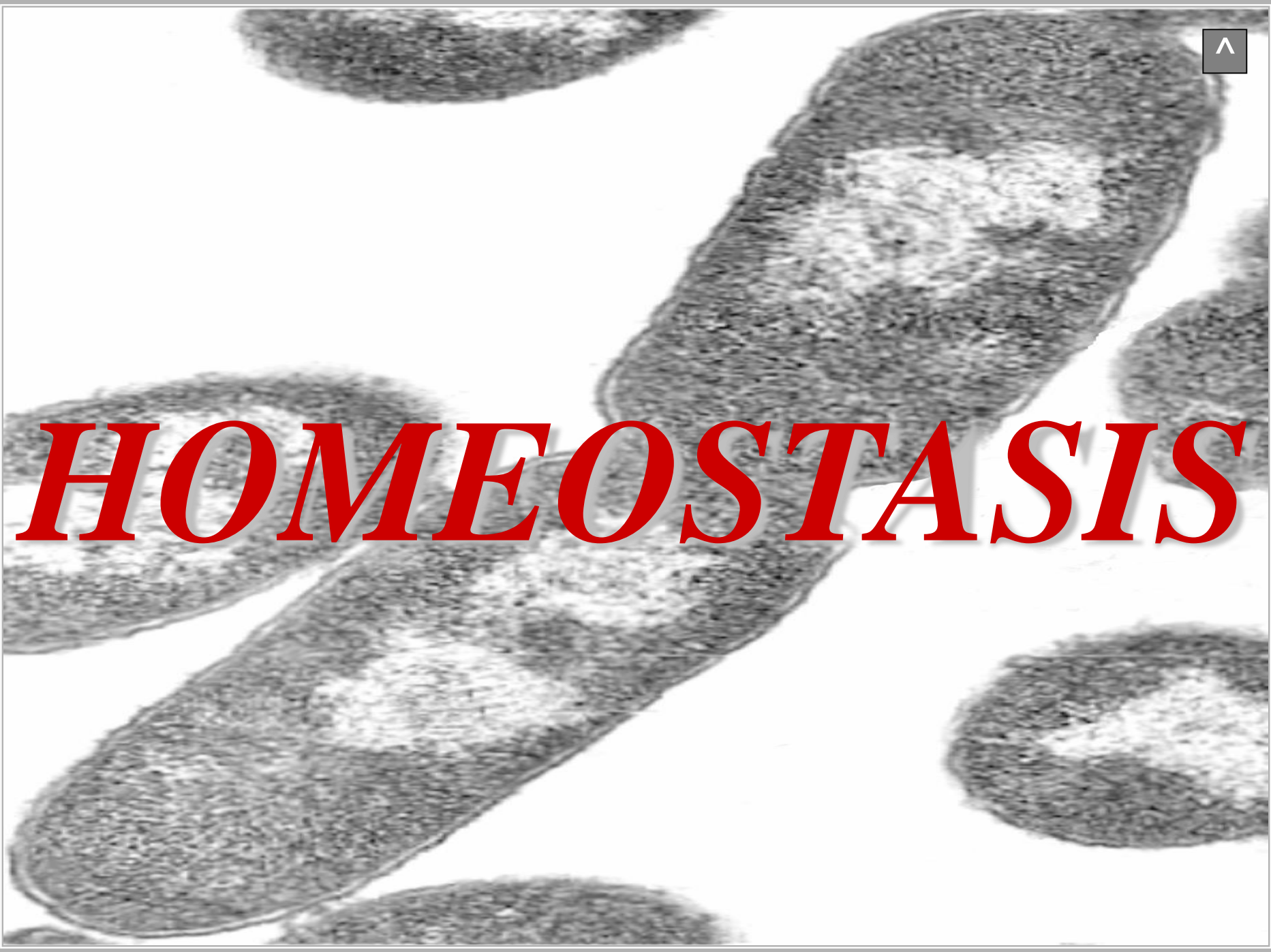
NON-COMPATIBLE

BIO-CHEM RXTS

***EFFICIENT
CELL
METABOLISM***



HOMEOSTASIS





PROKARYOTE

EUBACTERIA

ORGANELLES

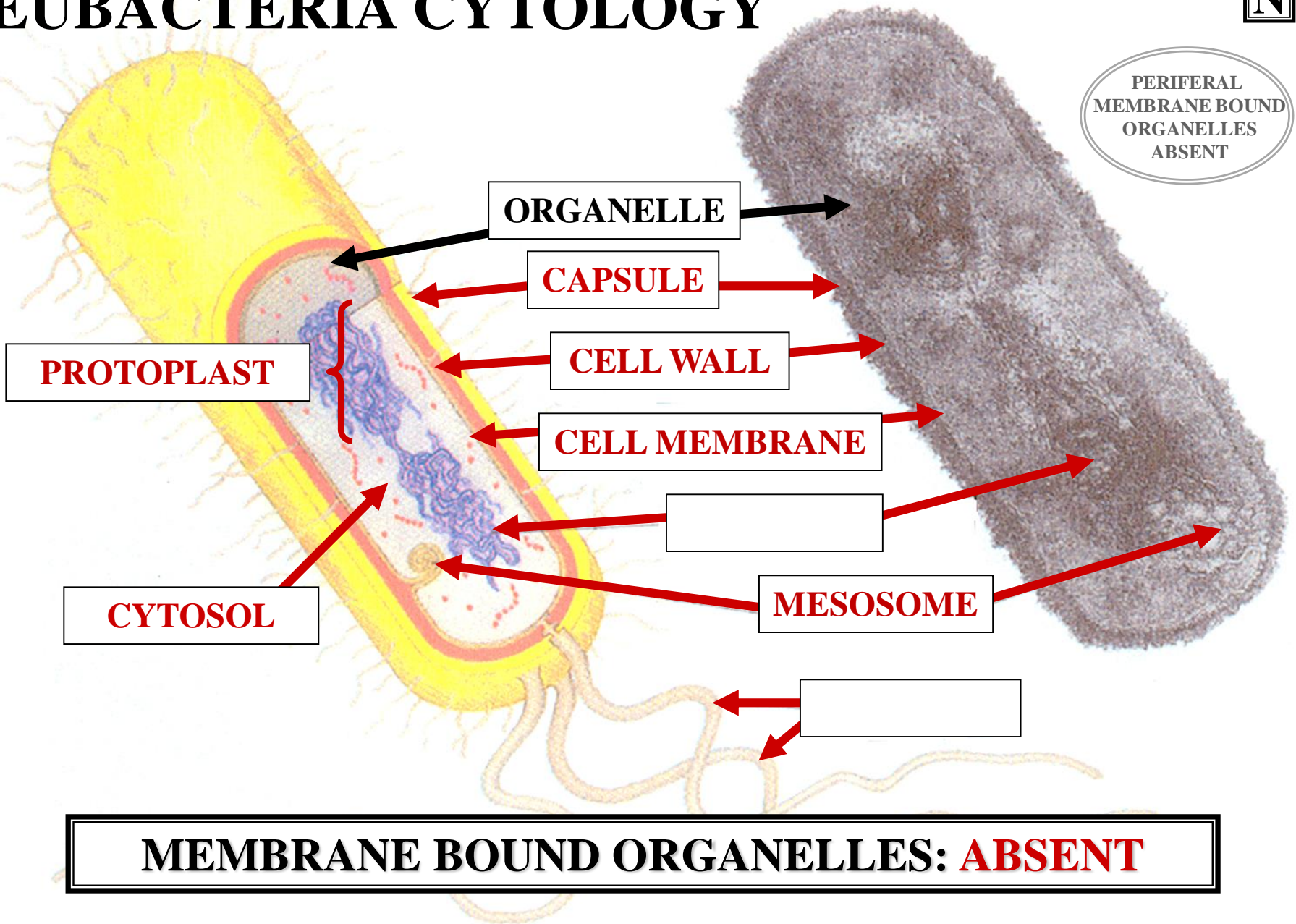


MEMBRANE BOUND ORGANELLES

EUBACTERIA CYTOLOGY

N

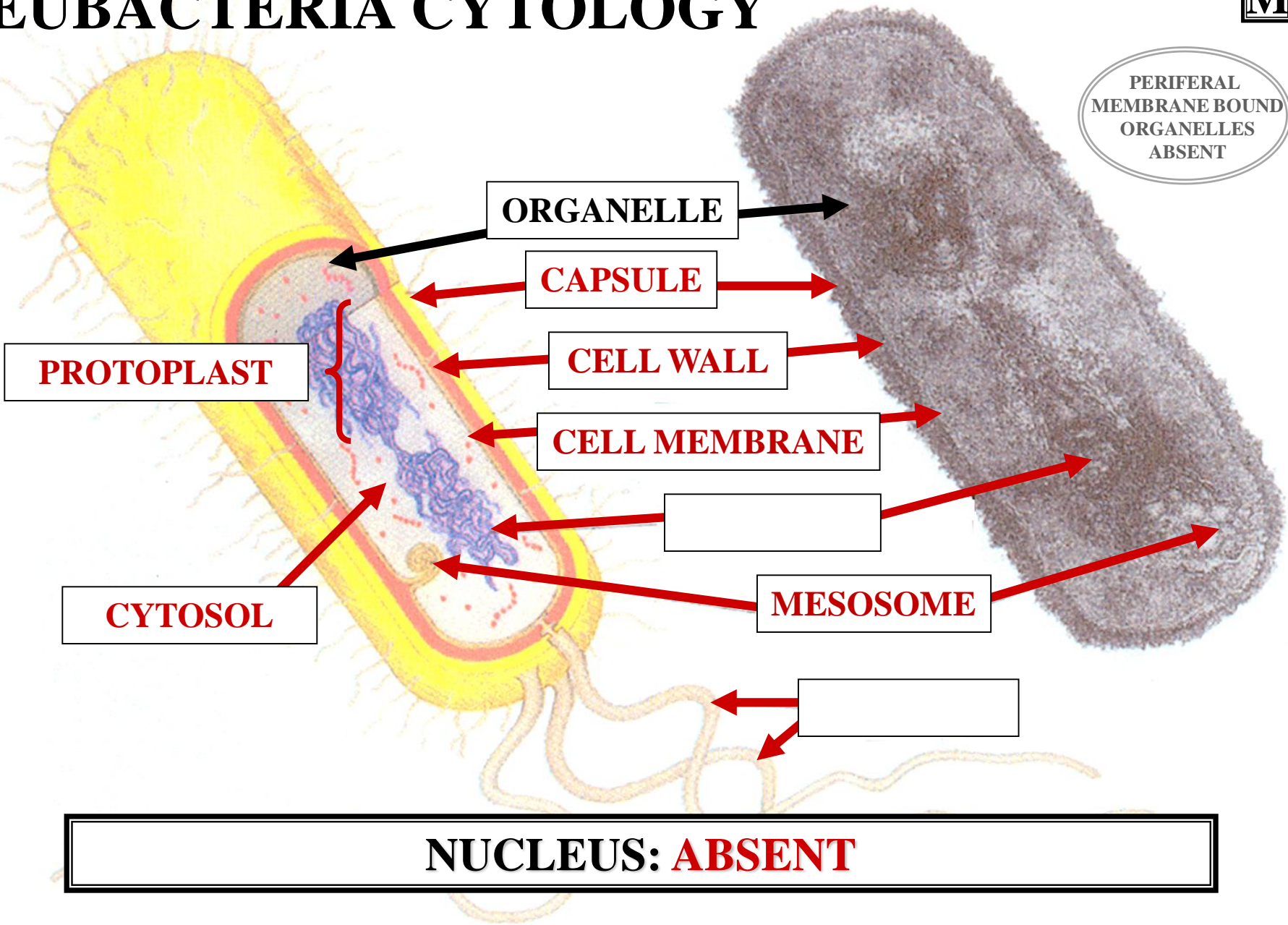
PERIFERAL
MEMBRANE BOUND
ORGANELLES
ABSENT



EUBACTERIA CYTOLOGY



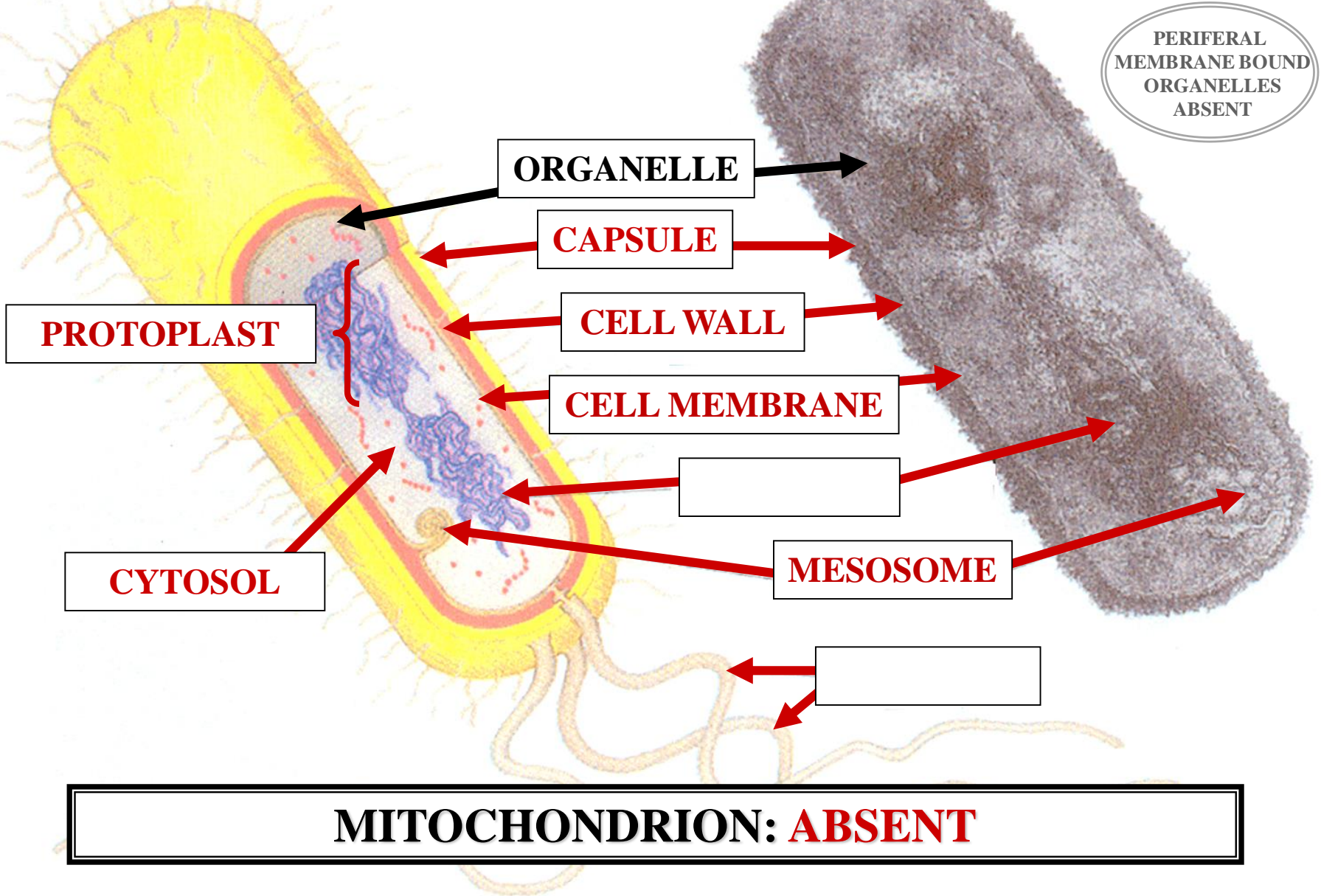
PERIFERAL
MEMBRANE BOUND
ORGANELLES
ABSENT



EUBACTERIA CYTOLOGY

C

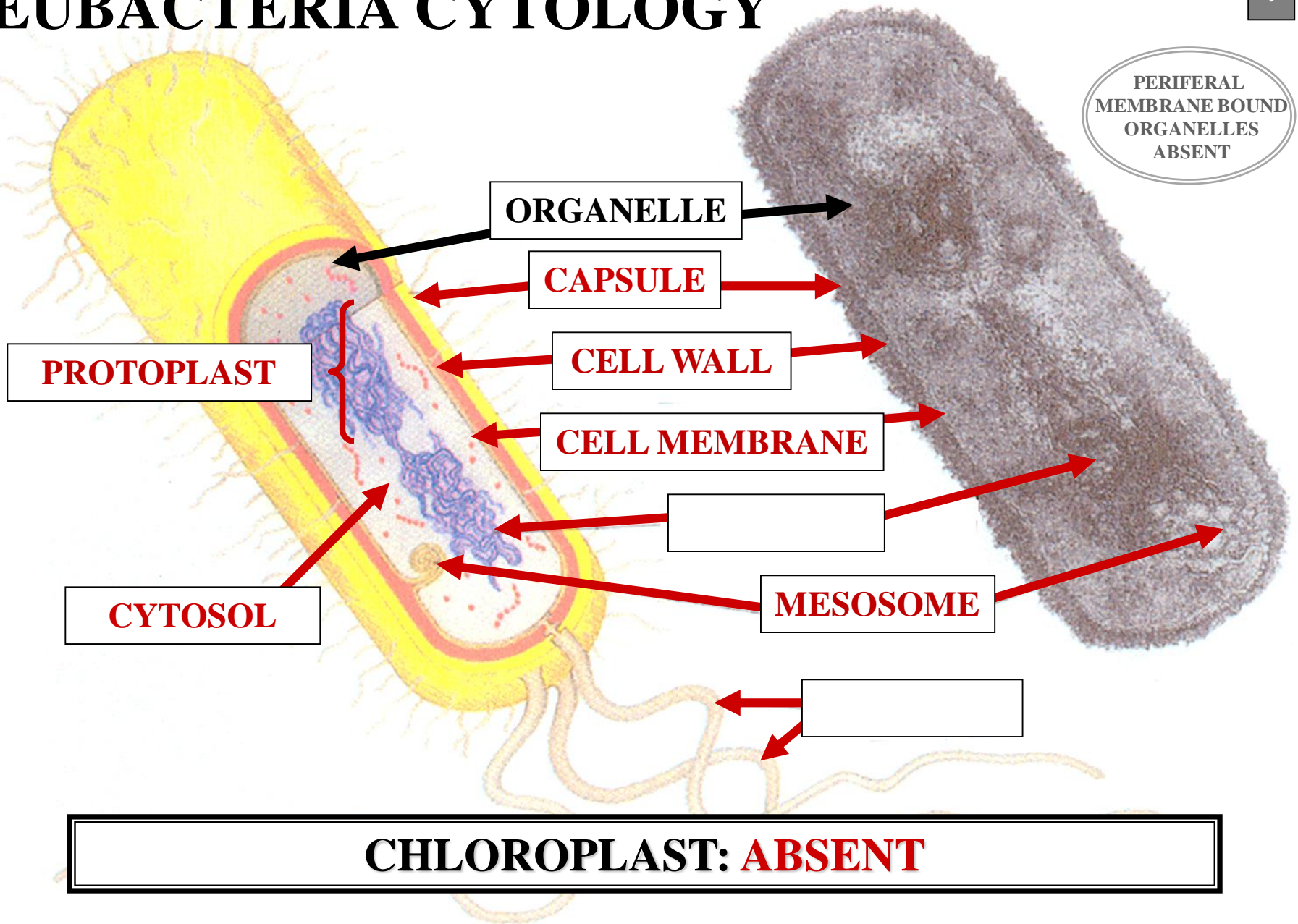
PERIFERAL
MEMBRANE BOUND
ORGANELLES
ABSENT

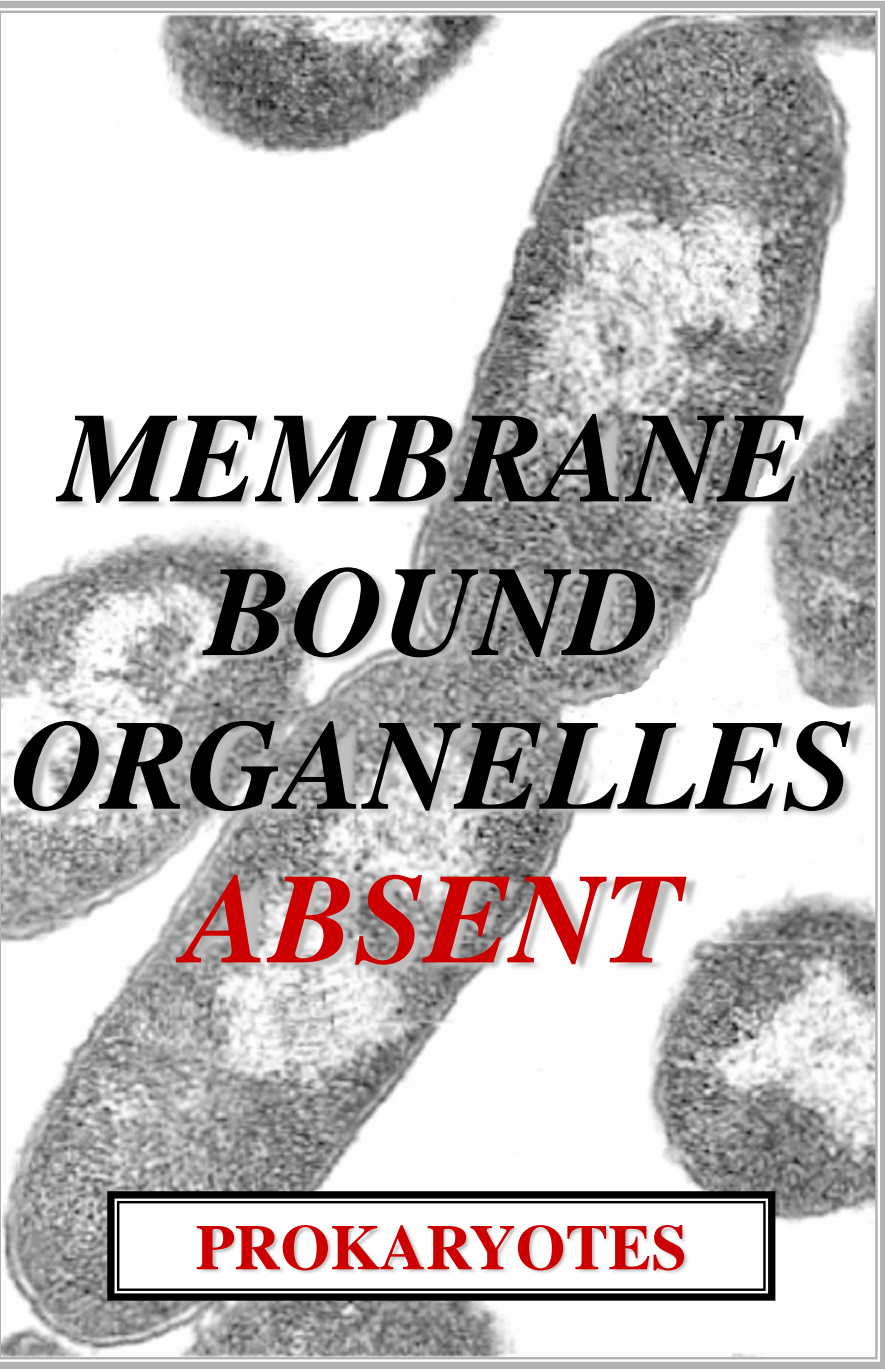


EUBACTERIA CYTOLOGY



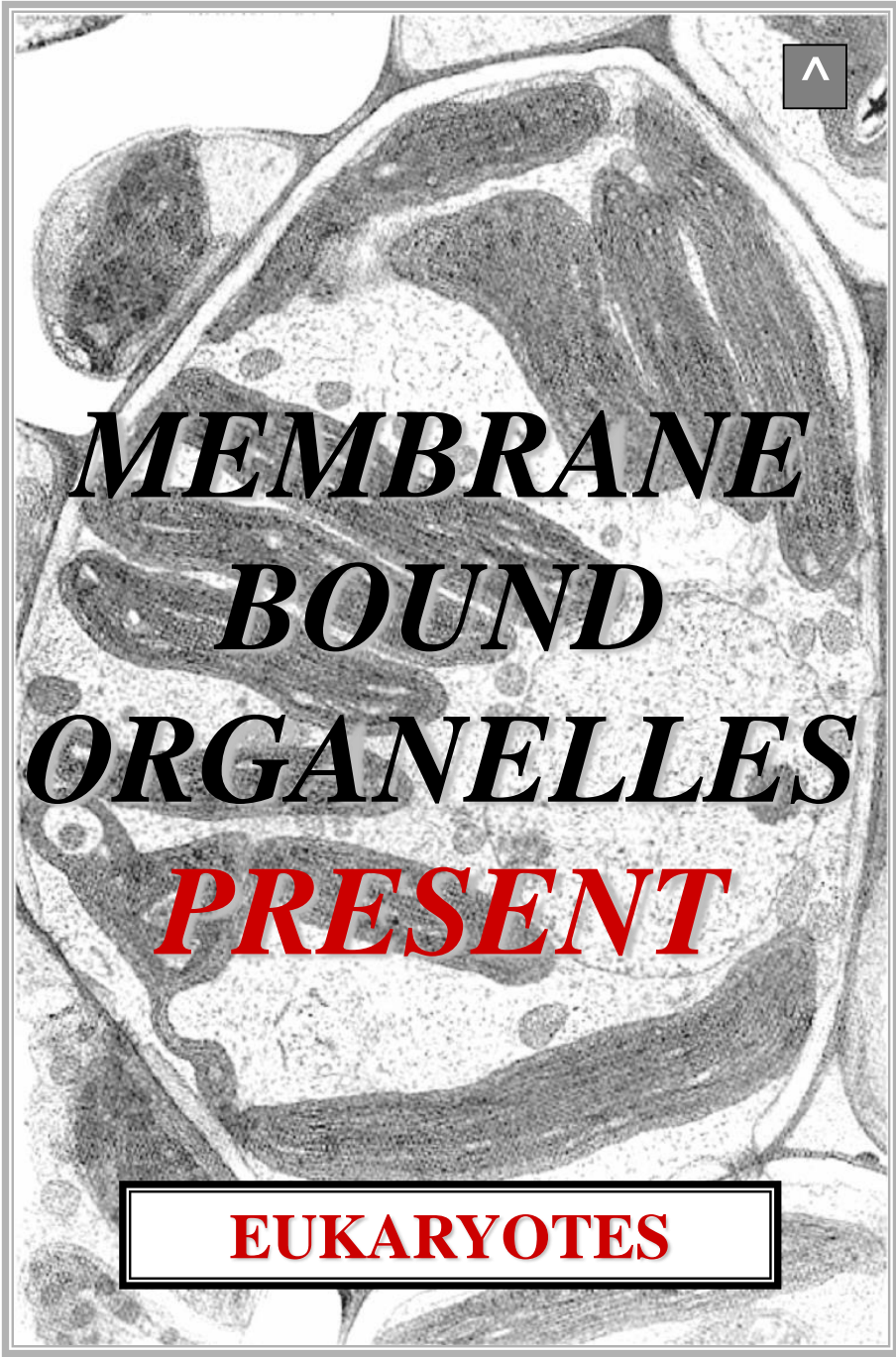
PERIPHERAL
MEMBRANE BOUND
ORGANELLES
ABSENT





***MEMBRANE
BOUND
ORGANELLES
ABSENT***

PROKARYOTES



***MEMBRANE
BOUND
ORGANELLES
PRESENT***

EUKARYOTES

RIBOSOME

RIBOSOME



RIBOSOME

**NON-MEMBRANE
BOUND ORGANELLE**

RIBOSOME



RIBOSOME

**NON-MEMBRANE
BOUND ORGANELLE**

**DISTRIBUTED THROUGHOUT
CYTOSOL**

RIBOSOME

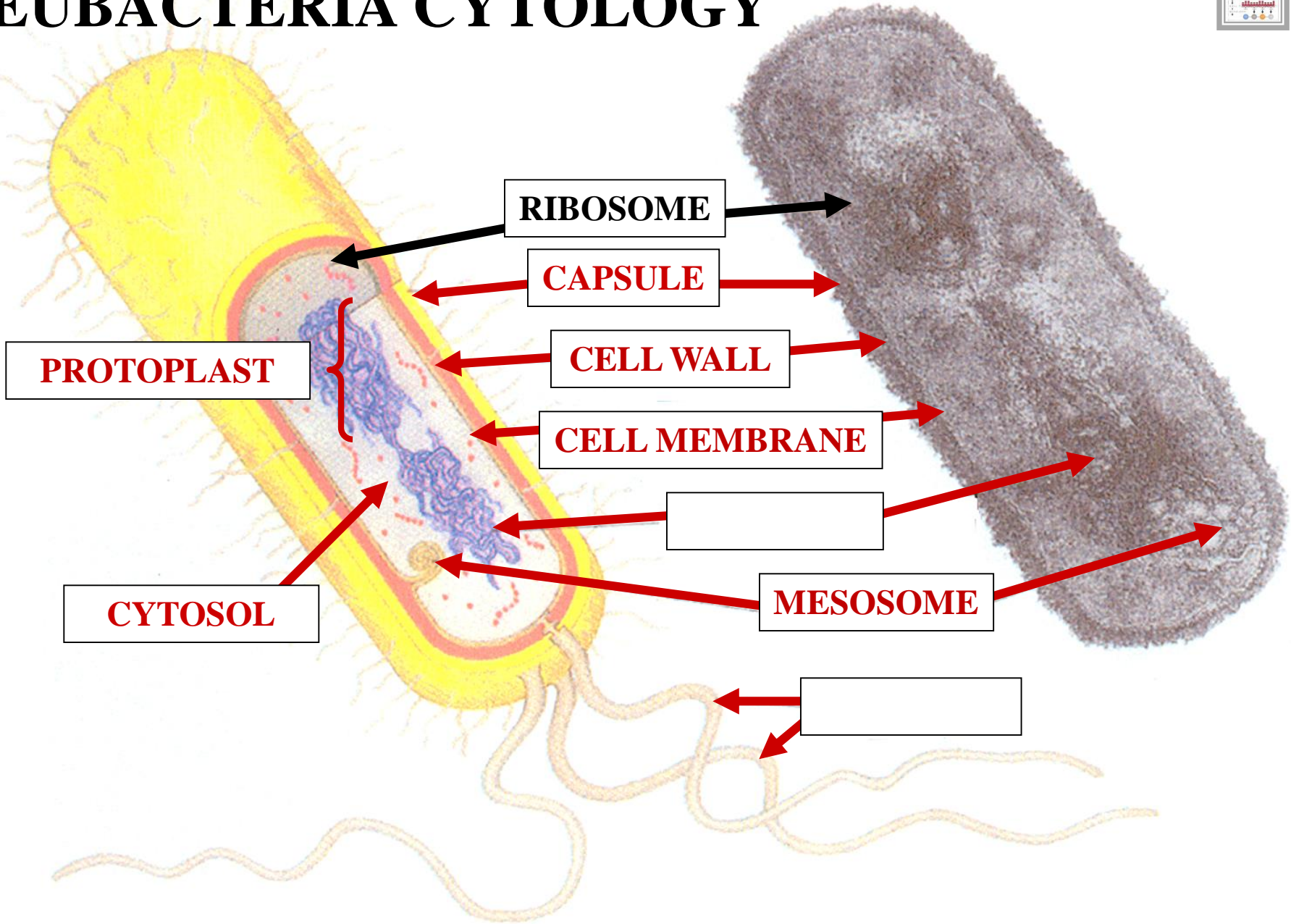
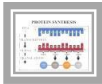


RIBOSOME
NON-MEMBRANE
BOUND ORGANELLE

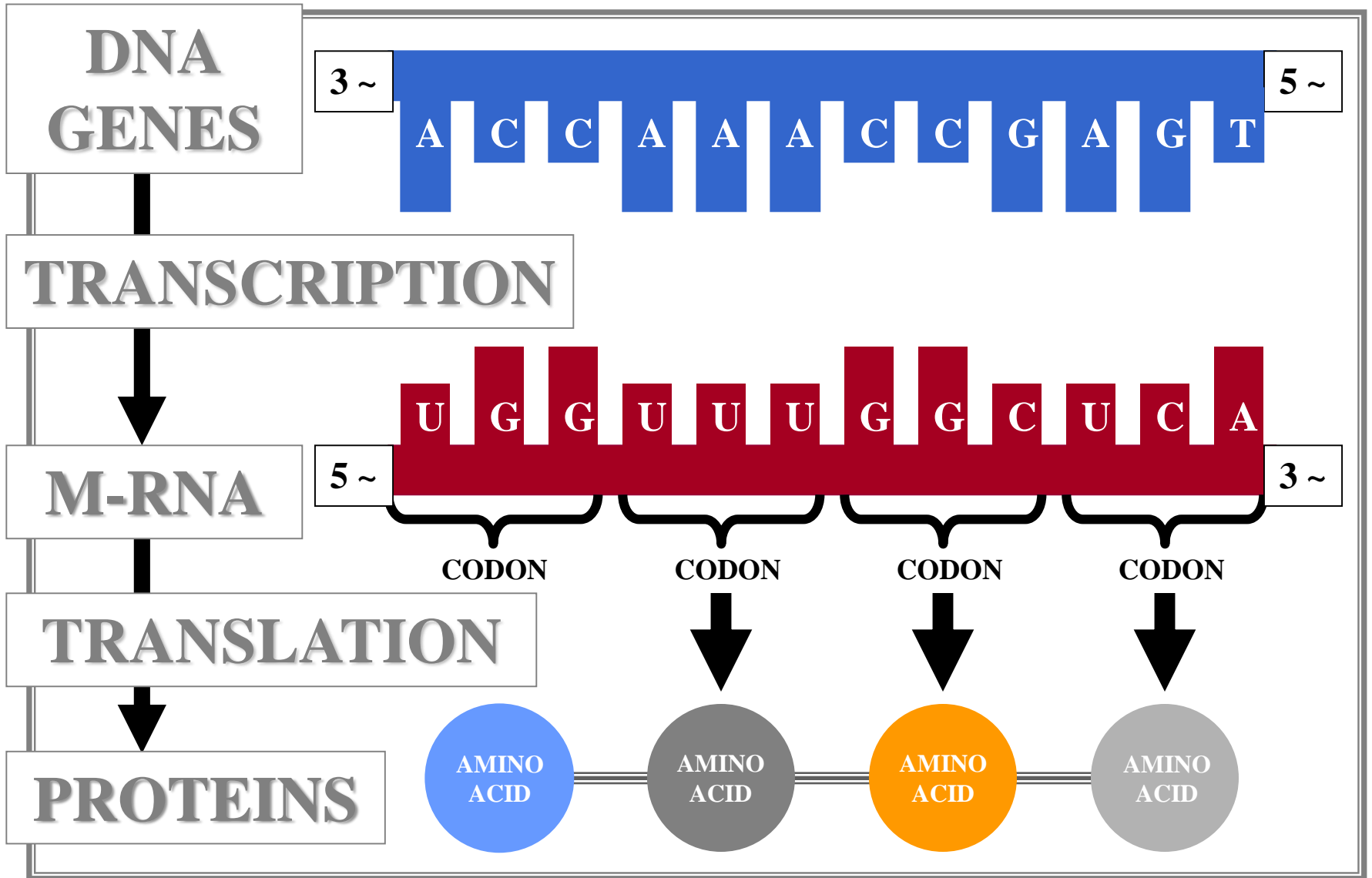
DISTRIBUTED THROUGHOUT
CYTOSOL

SITE: PROTEIN SYNTHESIS
RIBOSOME

EUBACTERIA CYTOLOGY



PROTEIN SYNTHESIS





RIBOSOME COMPOSITION