GRAM POSITIVE BACTERIA *:have a simpler but thicker cell wall consisting of multiple layers of peptidoglycan with teichoic acid polymers dispersed throughout.*

GRAM NEGATIVE BACTERIA *: have a cell wall that is thinner than that of Gram –positive bacteria,with a bimolecular layer of peptidoglycan and no teichoic acids.* ***an addition membrane , the outer membrane (OM)*** *, lies above the peptidoglycan layer*

B - CYTOPLASMIC MEMBRANE:

structurally similar to the cell membranes of eukaryotes do not contain sterols

•40 percent phospholipid, 60 percent protein.

•The phospholipids are amphoteric molecules with a polar hydrophilic glycerol "head" attached via an ester bond to two nonpolar hydrophobic fatty acid tails, naturally forming a bilayer in aqueous environments.

Functions of the procaryotic plasma membrane

1. Osmotic permeability barrier

2. Location of transport systems for specific solutes (nutrients and ions)

3. Energy generating functions, involving respiratory and photosynthetic electron transport systems, establishment of proton motive force, and transmembranous, ATP-synthesizing ATPase

4. Synthesis of membrane lipids (including lipopolysaccharide in Gram-negative cells)

5. Synthesis of murein (cell wall peptidoglycan) contains carrier lipids and enzymes involved in cell wall biosynthesis

6. Assembly and secretion of extracytoplasmic proteins

7. Coordination of DNA replication and segregation with septum formation and cell division

8. Chemotaxis (both motility per se and sensing functions)

9. Location of specialized enzyme system