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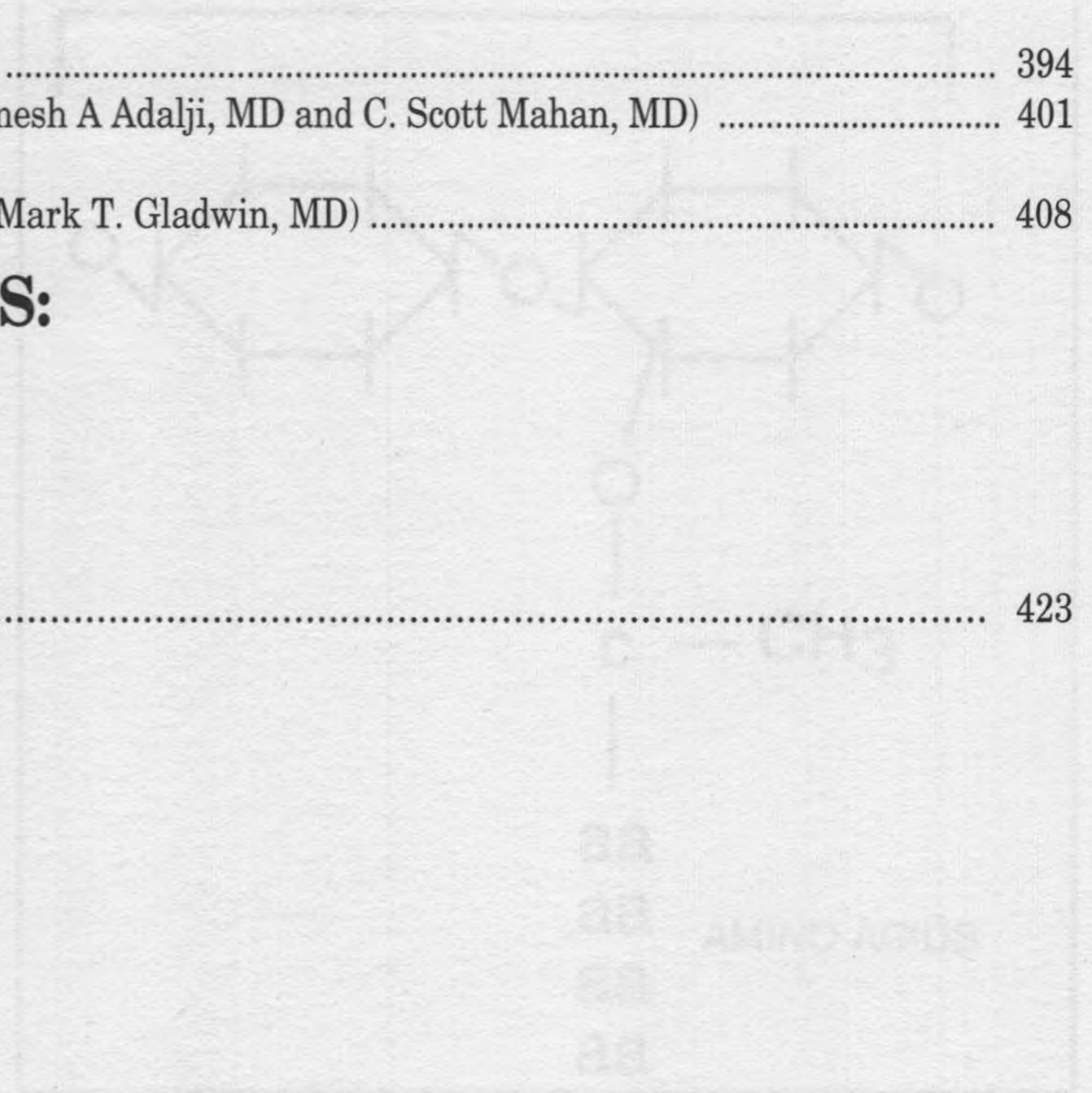


Figure 1-1

Both gram-positive and gram-negative organisms have more than 1 layer protecting their cytoplasm and nucleus from the extracellular environment, unlike animal cells which have only a single phospholipid bilayer. The layer just outside the bacterial cytoplasmic membrane is the peptidoglycan layer or cell wall. It is present in both gram-positive and gram-negative organisms.

The peptidoglycan layer or cell wall is composed of repeating disaccharide units. Each unit is a sub-chain extending from each disaccharide.

The outermost layer of the peptidoglycan is covalently bound to other layers and from neighboring chains. This results in a mesh-like structure. The surface that contains the branching of the layers is called teichoic acid and is located in the inner cytoplasmic membrane. The outermost peptidoglycan layer is called lipoteichoic acid. For more details on the structure of the cell wall, see the following page.