**Microbiology: Gram Staining**

**What is Gram Staining?**  Name: Date:

* Basic classification of bacteria that is based on the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* There are 2 main groups: **Gram positive** and **Gram negative**.
* **Gram staining** is a staining technique that provides an easy differentiation of bacteria into one of two groups.
* The staining technique, developed in the late 1700’s by **Christian Gram** classifies microorganisms into two groups based on the structure of their cell walls.

**How is this possible?**

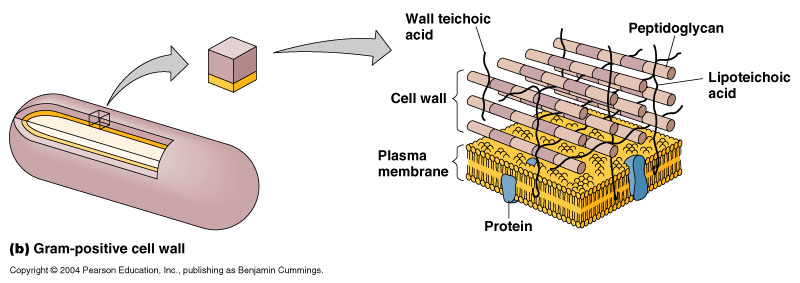
* The component of the cell wall which makes Gram staining possible is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

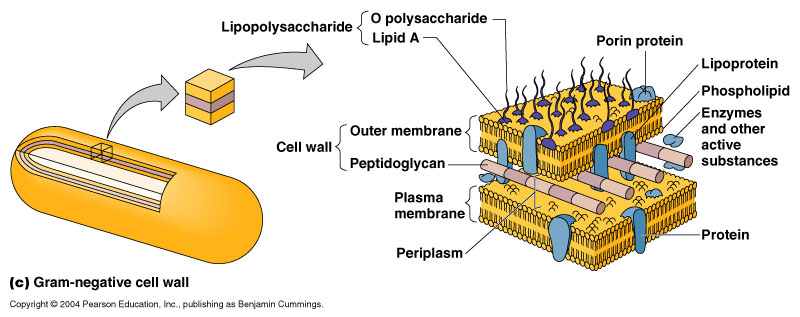
**Gram Positive Cell Walls Gram Negative Cell Walls**

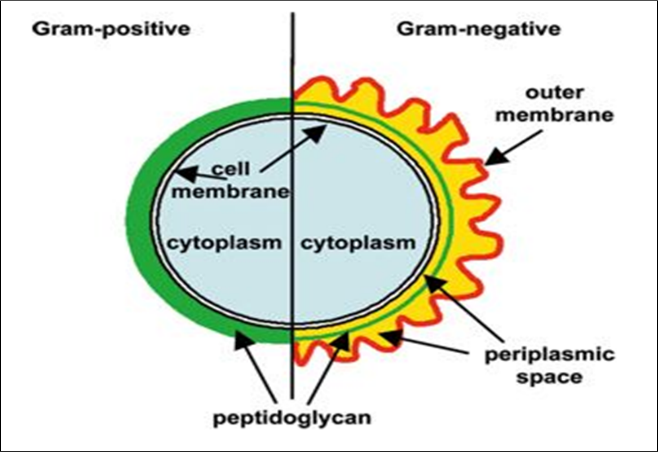
- Have a thin cell wall with a -Have a thick cell wall with a

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Cell Walls**





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**Why do we Gram Stain?**

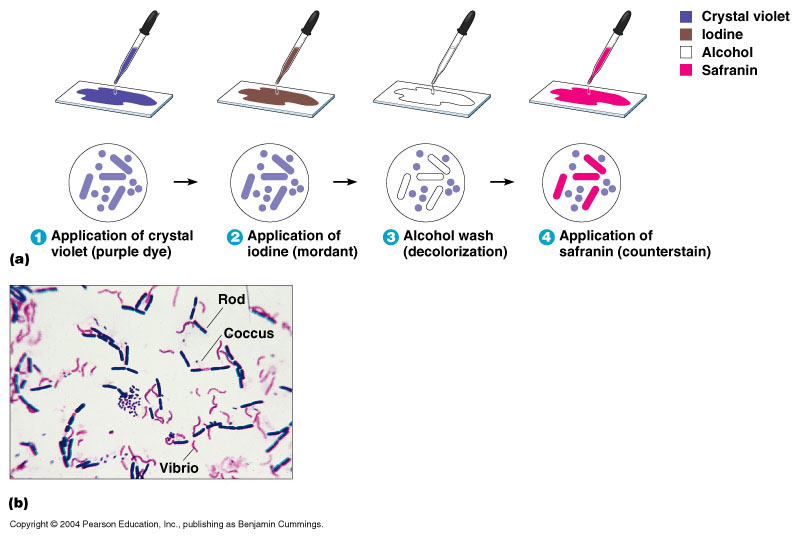
* To differentiate between different types of bacteria based on their cell wall structure.
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

NOTE:

Other ways to identify bacteria

* What they eat Waste Products
* \_\_\_\_\_\_\_\_\_\_\_\_\_ Colony Formation (colour, shape etc...)
* \_\_\_\_\_\_\_\_\_\_\_\_\_

**Process**

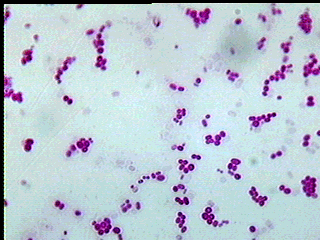
The process includes the use of:

a primary stain (crystal violet) (30sec)

a mordant (helper) iodine solution, (60sec)

a decolorizer (95% ethanol),

a counterstain (safranin). (30sec)



**Upon Completion**

* Gram Positive cells appear \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



* Gram Negative cells appear \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_