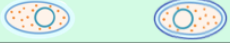

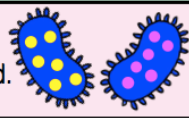
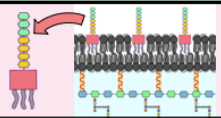
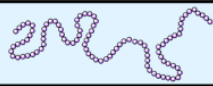
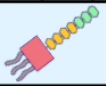






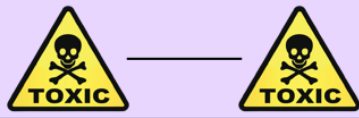
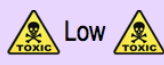
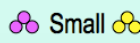



CONCEPT: EXOTOXINS VS. ENDOTOXINS

● Now let's highlight some of the differences between exotoxins & endotoxin.

Property	Exotoxins	Endotoxins
Bacterial Source	Gram Positive & Gram Negative Bacteria 	Gram _____ Bacteria 
Location in/on the Bacterium	Within the cytoplasm. May or may not be secreted. 	Component of the outer membrane. 
Chemical Nature	_____ 	Lipopolysaccharide (Lipid A Component) 
Ability to Form a Toxoid	Yes (Normally) 	No 
Heat Stability	Inactivated by Heat (Normally) 	Heat - _____ 
Effect on Human Body	Affects cell functions, nerves, & gastrointestinal tract. 	Fever, weakness, body aches, & septic shock. 
Toxicity (Ability to Cause Disease)		 Low Unless it infects the bloodstream .
Lethal Dose	Small 	Large 

PRACTICE: Endotoxins are _____ and need to be in _____ concentrations to cause disease in a host.

- a) Extremely toxic; small.
- b) Extremely toxic; large.
- c) Slightly toxic; small.
- d) Slightly toxic; large.

PRACTICE: Which of the following is **not** a major difference between endotoxins and exotoxins?

- a) Exotoxins are more toxic than endotoxins.
- b) Endotoxins are made by viruses while exotoxins are made by bacteria.
- c) Exotoxins are made of proteins while endotoxins are made of lipopolysaccharides.
- d) A small concentration of exotoxins can be lethal while a large concentration of endotoxins is lethal.

PRACTICE: The diphtheria toxin is secreted by *Corynebacterium diphtheriae* bacteria. This toxin has two components, one that binds the host cell and one that causes disease. Which of the following about the diphtheria toxin is **false**?

- a) An endotoxin.
- b) An exotoxin.
- c) An A-B toxin.
- d) A protein toxin.
- e) Highly toxic.
- f) Lethal in small doses.