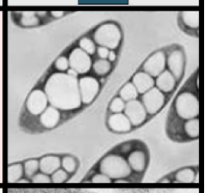
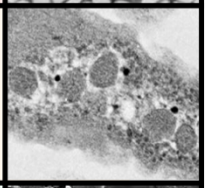
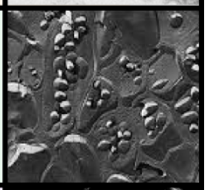
CONCEPT: CELL INCLUSIONS

- _____**:** cytoplasmic molecular *aggregates* that are diverse in *structure* & *function*.
- Some are stored as insoluble *granules* while others are enveloped by _____, a *lipid membrane* or *both*.
  - □ **Granules:** _____ particles that are barely visible by a microscope.

Types of Inclusions

Inclusion Type	Function	
Storage Granules	Aggregates of large polymers that are in *excess* inside the cell: a) **Carbon Granules:** Stores *Carbon* to be used later as an _____ source. b) **Polyphosphate Granules:** Stores _____ later used for biosynthesis. c) **Sulfur Granules:** Stores *Sulfur* in bacteria that use it to generate energy.	
Carboxysomes	CO_2-fixing enzymes enveloped by a _____ shell. Location of _____ *fixation* in the cell.	
Gas Vesicles	Gas particles enveloped by a *protein* shell. Controls the cell's _____ in aquatic environments. **Gas** _____**:** group of *gas vesicles* in the cell.	
_____**somes**	Intracellular chains of iron-containing molecules enclosed within a membrane. Used by cells to orient themselves with Earth's magnetic field.	

PRACTICE: Which of the following statements about gas vesicles is TRUE?

a) Bacteria use them to align with the Earth's magnetic field.
b) They store phosphate molecules as granules.
c) They are used to control the cell's buoyancy in aquatic environments.
d) They are the site of Carbon fixation.
e) None of the above are true.

PRACTICE: Which of the following inclusion bodies contain iron?

a) Gas vesicles.
b) Magnetosome.
c) Storage granules.
d) Carboxysomes.