Helpful HINTS:

The **nucleolus** is a non-membrane bound structure found in the nucleus of cells. It is composed of proteins and nucleic acids found within the [nucleus](http://en.wikipedia.org/wiki/Cell_nucleus) of [eukaryotic](http://en.wikipedia.org/wiki/Eukaryote) [cells](http://en.wikipedia.org/wiki/Cell_%28biology%29).

Its function is to [transcribe](http://en.wikipedia.org/wiki/Transcription_%28genetics%29) [ribosomal RNA](http://en.wikipedia.org/wiki/Ribosomal_RNA) (rRNA) and combine it with proteins to form almost-complete[ribosomes](http://en.wikipedia.org/wiki/Ribosome).

The nucleolus occupies up to about 25% of the volume of the cell nucleus. Malfunction of nucleoli can be the cause of several human diseases

**Smooth ER** has its purpose in the cell. It acts as a storage organelle.



**Rough ER** was mentioned in the section on ribosomes. They are very important in the synthesis and packaging of **proteins**. Some of those proteins might be used in the cell and some are sent out.

**Centrioles** :Every animal-like cell has two small organelles called **centrioles**. They are there to help the cell when it comes time to divide. They are put to work in both the process of [mitosis](http://www.biology4kids.com/files/cell2_mitosis.html) and the process of [meiosis](http://www.biology4kids.com/files/cell2_meiosis.html). You will usually find them near the [nucleus](http://www.biology4kids.com/files/cell_nucleus.html) but they cannot be seen when the cell is not dividing.

**Cyanophytes**, or cyanobacteria, resemble algae in that they are photosynthetic microorganisms that live in water. cyanophytes are smaller than most algae and, like bacteria, they are prokaryotic — they lack the internal structure (a nucleus, organelles) found in true algae and other eukaryotes.

**Bacterium**- member of a large group of unicellular microorganisms that have cell walls but lack organelles and an organized nucleus, including some that can cause disease.

**Pilus-** is a hairlike appendage found on the surface of many bacteria

**Flagellum-** a lash-like appendage that protrudes from the cell body of certain prokaryotic and eukaryotic cells. The word **flagellum** in Latin means whip.

**Nucleoid-** is an irregularly-shaped region within the cell of a prokaryote that contains all or most of the genetic material.

**Ribosome-** are the protein builders or the protein **synthesizers** of the cell. They are like construction guys who connect one amino acid at a time and build long chains. Ribosomes are found in many places around the cell. You might find them floating in the [cytoplasm (cytosol)](http://www.biology4kids.com/files/cell_cytoplasm.html). Those floating ribosomes make proteins that will be used inside of the cell.