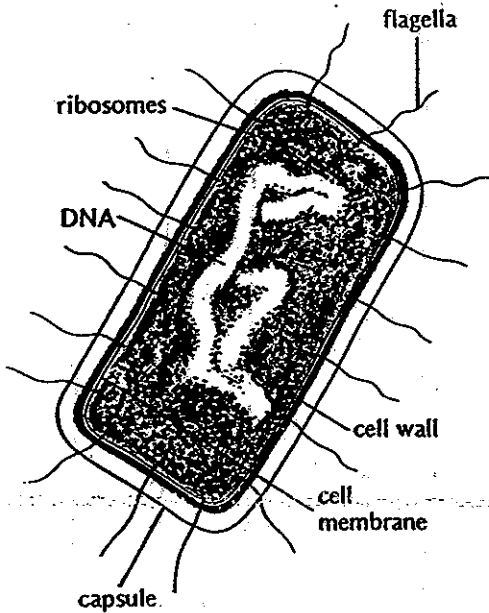


Prokaryotic vs Eukaryotic cells Name Key

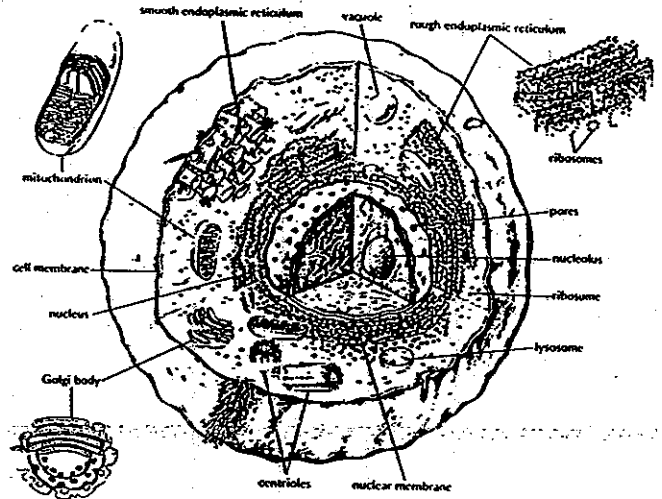
Prokaryotic

Eukaryotic

eg



eg



LIST 3 DIFFERENCES

Smaller, less organized	~10x larger than prokaryotic
lack membrane-bound organelles ↳ lack a true nucleus	possess membrane-bound organelles ↳ possess a true nucleus
single, circular chromosome	multiple, rod-like chromosomes

LIST SOME SIMILARITIES

- both are 'alive'
- both can reproduce on their own
- both possess DNA
- etc...

Cells - Organelles

Key

Using the following terms, correctly label all cell parts indicated by leader lines in Figure 3.6. Then select different colors for each structure and use them to color the coding circles and the corresponding structures in the illustration.

- Plasma membrane
- Mitochondrion
- Nuclear membrane
- Centrioles
- Chromatin threads
- Nucleolus
- Golgi apparatus
- Microvilli
- Rough endoplasmic reticulum (rough ER)
- Smooth endoplasmic reticulum (smooth ER)

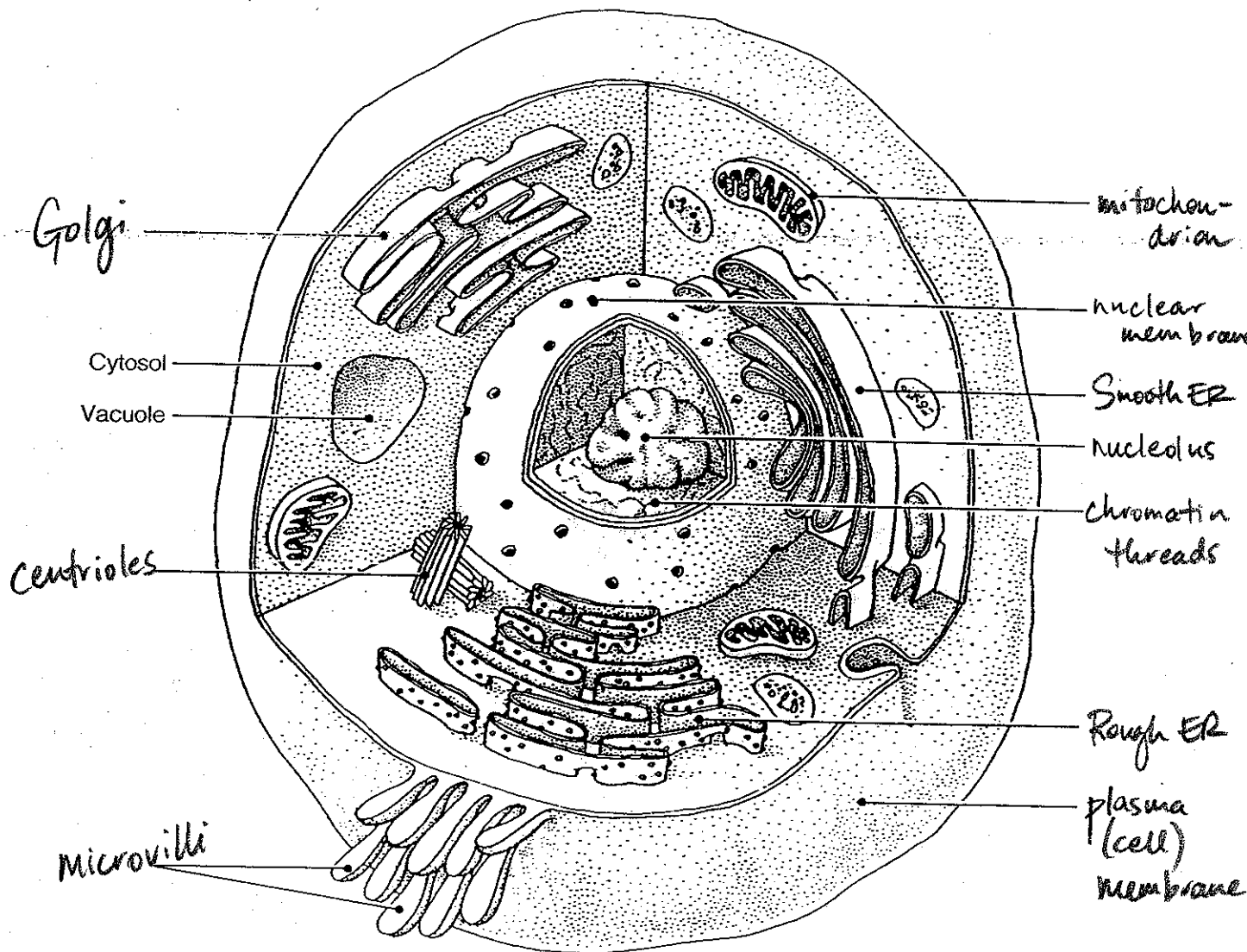
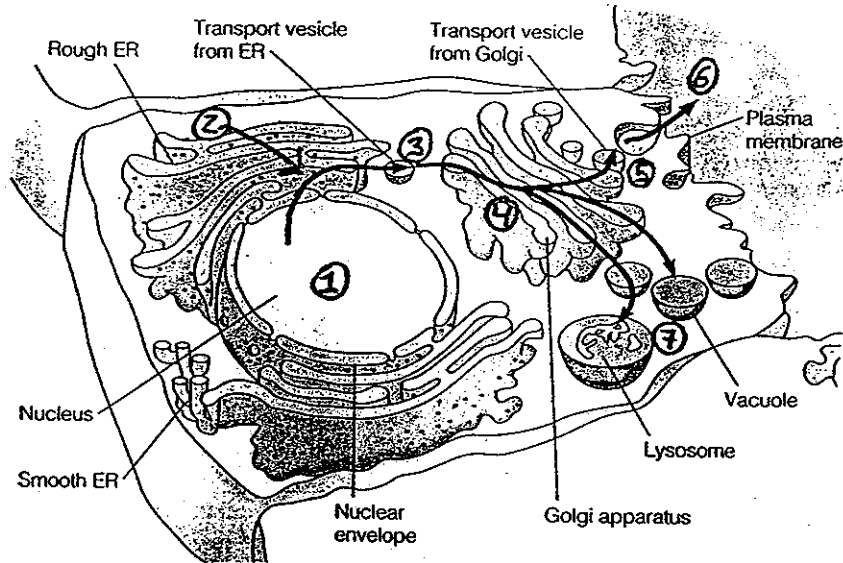


Figure 3.6

FROM GENES TO VESICLES

Name KEY



Describe each step: EXPORTATION

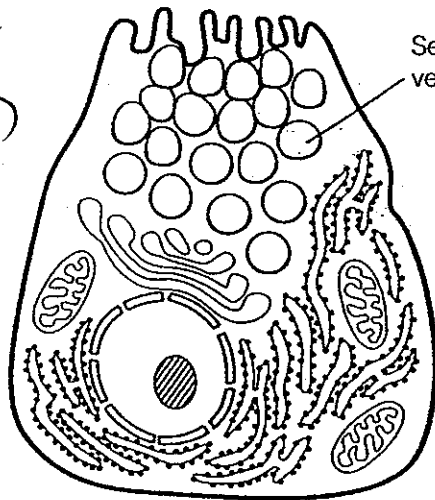
1. DNA is copied into mRNA, which exits nucleus through nuclear pore and associates with a ribosome (either attached to ER or 'free').
2. Protein is constructed at ribosome and (assuming an ER-attached ribosome) is threaded into lumen of Rough ER, then to Smooth ER (minor modifying).
3. Protein placed into transition vesicle. (free ribosomes would place protein directly into transition vesicle).
4. Transition vesicle travels to cis-face of Golgi. Protein is modified as it moves from saccule to saccule.
5. Export protein (made @ attached ribosome) placed into secretory vesicle which buds off of the trans-face of Golgi.
6. Release of protein into ECF (EXOCYTOSIS)
7. Free ribosome protein leaves trans-face of Golgi in a 2nd transition vesicle bound for (in this case) vacuole (storage) or lysosome (digestion).

Investigating Cells

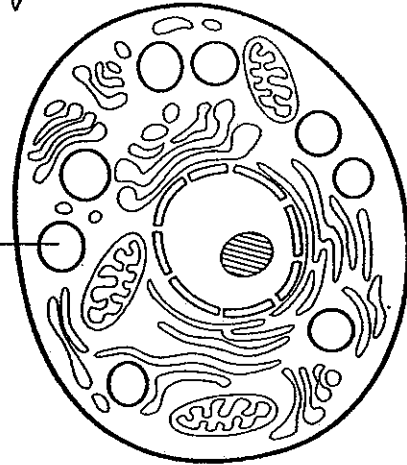
Name Key.

~~Handwritten scribble~~

See p. 222, 422
(among others...)



A. Acinar cell from pancreas



B. Interstitial cell from testis

1. Look at the cells and Compare. List 6 similarities:

- ① Both contain mb-bound nucleus
- ② Similar in size
- ③ Both have mitochondria
- ④ " " Golgi
- ⑤ Both have ER of some type
- ⑥ Both have cell mb.

2. List three significant differences:

A	B
- Rough ER	- Smooth ER
- protein-filled secretory vesicles	- lipid droplets
- different shapes	

3. The Pancreas is part of the digestive system. Based on the organelle arrangement, explain what you believe the Acinar cells do.

Export proteins; most likely digestive enzymes.

4. Some Acinar cells are part of Exocrine glands. Define Exocrine gland.

Glands that secrete their products (usually enzymes) into ducts, not the blood.

5. Based upon the arrangement of organelles in the interstitial testicle cell what do you believe to be its function. (Hint: Look up Endocrine gland and remember cholesterol)

Production of STEROID hormone → namely TESTOSTERONE
 ↳ lipid → stored in lipid droplets, then released into blood.