

LABORATORY EXERCISE 3

The Cell

Ex. 3

CELLULAR STRUCTURE

MATCH THE CELLULAR COMPONENTS IN COLUMN A WITH THE DESCRIPTIONS IN COLUMN B.

Column A

- A. cell membrane
- B. centrosome
- C. chromatin
- D. cilium (cilia)
- E. cytoplasm
- F. endoplasmic reticulum
- G. Golgi apparatus
- H. Inclusion
- I. Lysosome
- J. Microfilament
- K. Microtubule
- L. Mitochondrion
- M. Nuclear envelope
- N. Nucleolus
- O. Nucleus
- P. Peroxisome
- Q. Ribosome
- R. Vesicle (vacuole)

Column B

- _____ 1. loosely coiled fibers of DNA within nucleus
- _____ 2. lifeless cellular materials
- _____ 3. organelle whose inner membrane forms partitions, involved in making energy
- _____ 4. located near nucleus, functions during division
- _____ 5. small particles attached to rough endoplasmic reticulum, produce protein
- _____ 6. Membranous sac formed by the pinching off of cell membrane, contains something
- _____ 7. dense body within nucleus, produces ribosomes
- _____ 8. thin, hollow, threadlike parts
- _____ 9. network of sacs, canals, and vesicles for protein or lipid synthesis
- _____ 10. outer boundary of living material, controls what enters and leaves cell
- _____ 11. occupies space between cell membrane and nucleus, matrix
- _____ 12. flattened membranous sacs near nucleus for packaging
- _____ 13. hairlike part associated with movement
- _____ 14. tiny rod that helps cell to shorten cell, cytoskeleton
- _____ 15. membranous sac containing proteolytic enzymes, "suicide bag"
- _____ 16. contains chemicals that decompose hydrogen peroxide
- _____ 17. double-layered membrane with pores, controls what enters and leaves nucleus
- _____ 18. spherical organelle that contains chromosomes

COMPLETE THE FOLLOWING:

1. Sketch a few of the squamous epithelium cells in your buccal smear. Label the cellular components you recognize. How do these cells differ from one another?

2. What effect did the methylene blue stain have on the cheek-lining cells? _____

3. What advantage may be gained by staining cells? _____

4. Observe various slides of epithelial tissue available for you in the laboratory. What do the various kinds of cells in the tissues have in common? _____

5. What are the main differences you observed among these cells? _____

6. Sketch a single cell of each kind of epithelial tissue you observe. Name the tissue and label the cellular components you can see.

COMPLETE THE INFORMATION IN THE TABLE BELOW.

Type	Where found	Characteristics
Simple squamous epithelium		
Stratified squamous epithelium		
Pseudostratified columnar epithelium		
Simple columnar epithelium		
Simple Cuboidal epithelium		
Transitional epithelium		
Goblet cells		
Ciliated columnar epithelium		

Figure 3.1 Label the parts of this composite cell.

