

INTRODUCTION TO NERVOUS TISSUE HISTOLOGY

page 12

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http://biology.clc.uc.edu/fankhauser/Labs/Anatomy_&_Physiology/A&P202/Nerve_Histology/Nervous_Tissue_Histology.htm

Examine the following slides and identify the listed features. Survey each slide for the best typical field which shows the listed features, and illustrate it at the indicated power, labeling these features. At home, fill in the significance of each feature in a sentence or two. Follow protocol *Notebook Illustrations*. (MF 9th = Eroschenko's 9th Ed)

Slide 1: **Spinal motor nerve cell**, ox, hematoxylin-eosin stain

(H 1660)

(MF 9th, page 89) at 400x:

thoroughly scan with 4x objective, find a neuron which best shows the following, draw at 400x:

neuron	functional unit of nervous system
nucleus	houses genetic material
nucleolus	synthesizes ribosomal RNA, assembles ribosomes. Prominent in neurons.
Nissl bodies	rough endoplasmic reticulum (synthesizes protein). Prominent in cytoplasm.
perikaryon	also known as cell body, equals the area "around the nucleus"
axon hillock	often tapered, gives rise to the axon, pale or clear due to lack of Nissl bodies
dendrites	darker stained projection, carries impulses toward cell body. Can be multiple.
axon	clearer projection, carries impulses away from cell body
astrocytes	most common neuroglial cells, support, nourish neurons
microglia	cells with large nuclei dispersed among astrocytes (scarce), phagocytic

Slide 6: **Motor nerve endings** with end plates, snake, AuCl₂ stain

(H 1685)

Motor end plates, known also as neuromuscular junctions

(MF 9th, page 81) at 400x:

skeletal muscle	also known as striated muscle, bands of sarcomeres visible
nerve bundle	axons bound together by Schwann cells (not visible)
axon	delivers impulses from the cell body to the motor end plate
motor end plate	a cluster of synaptic knobs attached to muscle fibers
synaptic knobs	(or boutons) release acetylcholine, the neuromuscular neurotransmitter

cut here -----cut here

FOR DAY OF PERIPHERAL NERVES IN THE CAT

(Seventh week of the quarter)

http://biology.clc.uc.edu/fankhauser/Labs/Anatomy_&_Physiology/A&P202/Special_Senses/Smell_Taste/Smell_and_Taste.htm

Slide 10: **Vater-Pacini corpuscles**, pancreas, Hematoxylin-eosin

(H 1688)

Pacinian corpuscles, specialized nerve ending which detects pressure and vibration in an organ.

(MF 9th: page 229 and 147) at 100x:

Pacinian corpuscle:

connective tissue capsule

central cavity with numerous lamellae (with flattened nuclei, looks like an onion xs)

naked dendrite

Pancreatic acini