

# Bio& 241 Unit 3 Lab 4

## Muscle Tissue

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### Muscle Tissue:

#### **Slide 21**

Classic view of Skeletal Muscle tissue. Individual cells should be easy to observe because of the presence of endomysium and the lack of desmosomes. Make sure you can identify the following structures while observing the slide: (Muscle fibers (cells), Multiple Nuclei, Sarcolemma, I band, Z line, A band, H zone, M line)  
(Refer to figure 14.3 and plate 2 of the lab book)

#### **Slide 43**

Classic view of Cardiac muscle tissue. Note the branching appearance of cardiac tissue. Also note the Intercalated discs which are the junctions of neighboring cells. See if you can observe the following structures: (Muscle fibers (cells), single central Nucleus, Sarcolemma, I band, A band)  
(Refer to figure 30.7, page 305 of the lab book or figure 10-21, page 302 and figure 20.5, page 296 of Martini)

#### **Slide 19**

Classic view of Smooth muscle cells. This slide was prepared by physically separating the tissue into individual cells. Note the spindle shaped cells with centrally located nucleus and the lack of I bands and A bands.

#### **Slide 20 or 64**

Classic view of Smooth muscle tissue. You are looking at the outside of the intestinal wall. You should be able to observe two distinct layers of smooth muscle, an inner Circular smooth muscle layer and an outer longitudinal layer. (see figure 24-13, page 893 Martini textbook for an overview)  
In this x-sectional (c. s.) cut of the intestine the tissue will appear as follows;  
Circular muscle layer: Cells will be cut in x-section and appear as small round cells with round nuclei.  
Longitudinal muscle layer: Cells will be cut along their long axis and you will be able to observe their spindle shape and the nuclei will appear oval in shape.

- Slide 18** Slide is labeled muscle types. It contains three blocks of muscle tissue, one each of Skeletal, Cardiac, and Smooth muscle tissue. Use this slide to test your skills at identifying the three different types of muscle and their characteristics.
- Slide 22** The tissue on this slide is from the junction of a muscle and its tendon. Find the epimysium of the muscle. Notice how the epimysium becomes continuous with the dense irregular connective tissue of the tendon. See if you can find the endomysium between muscle fibers.
- Slide 33** This slide contains teased skeletal muscle fibers in which the fibers have been separated so the neuromuscular junction can be observed. (Refer to figure 10-2, page 294 of Martini for an overview and/or figure 14.5, 14.6, and plate 4 of your lab book)
- Slide 44** Slide stained with masson stain, which stains specifically for connective tissue. Muscle tissue on this slide will be dark pink and connective tissue stains green. Make sure you can find fascicles, perimysium, muscle fibers, endomysium on this slide.

## **Models and charts:**

Make sure to observe the muscle tissue chart. This chart should help you identify the characteristics of the muscle tissues described above.

Observe the three models of muscle cells. Be able to identify the following characteristics of the muscle types.

**Smooth Muscle Cells:** Spindle-shaped cells, single nucleus, sarcoplasm, sarcolemma, myofibrils, motor end-plate or neuromuscular junction.

**Cardiac Muscle Cells:** Branching cells or fibers, single nucleus, myofibrils, intercalated disk, sarcolemma, sarcoplasm, neuromuscular junction, and sarcomeres.

**Skeletal Muscle Cells:** Large round cells, multiple nuclei located both centrally and peripherally, myofibrils, sarcolemma, sarcoplasm, neuromuscular junction, sarcomeres, and endomysium.

Use the rest of your time reviewing and learning muscles!!!!