SKELETAL MUSCLE HISTOLOGY

Structure *(Use with L1 p178)*

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 a. Definition: sheet of fibrous connective tissue (CT) that encloses a muscle

 b. Location: (label #79)

*MAY project beyond muscle and form a cord-like tendon or intertwine with periosteum*

2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 a. Definition: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of CT surrounding a skeletal muscle

 b. Location: (label #77)

3. Muscle \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ [pl. fasciculi]

 a. Definition: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of skeletal muscle fibers (\_\_\_\_\_\_\_\_\_\_\_\_\_) in small

compartments

 b. Location: (label #71 & #78)

4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 a. Definition: sheath of CT that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_of muscle fibers

 b. Location: (label #74)

5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (muscle fiber) (aka: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_!)

 a. Definition: a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that contracts/relaxes in response to stimulation

 b. Location: (label #70 & #72)

 c. Structure of cell

 1) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (label #66 and see “A”)

 a) Definition: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 b) Structure: invaginations of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

( see “C” )

 2) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (label #67 )

 a) Definition: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of muscle cell

 b) contains small, oval nuclei and mitochondria and myoglobin ( see“D”)

 c) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ similar to hemoglobin; stores O2 for mitochondrion

 3) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (SR) ( see“B” )

 a) Definition: membranous \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and tubules w/i a

 muscle fiber

b) Function: together with T-tubules, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 4) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 a) Definition: sheath of CT that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 b) Location: (label #73 & 75)

 5) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 a) Definition: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 b) Location: (label #68 and see “E”)

 c) Structure

 (1) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ( see”H-1” )

 (a) Definition: a protein in combination with actin

contracts and relaxes muscle fibers

 (b) Location:

 (c) Structure: resembles golf club with end called heads

 that binds to actin to form crossbridges

 (2) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ( see “G-1” )

 (a) Definition: a protein in combination with myosin

contracts and relaxes muscle fibers

 (b) Location:

 (c) Structure: resembles strands of pearls made of

troponin (provides Ca ++ binding site) and

tropomyosin (located along groove btw twisted

strands)

 6) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ( see”F” )

 a) Definition: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 of a myofibril

 b) extending from z-line to z-line ( see”F-1” )

 c) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are dense areas of protein

7) striation pattern

 a) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: ( see “G” )

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_, actin filaments, attached to z-line

 b) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_: ( see “H” )

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_, myosin filaments overlapping with thin actin filament

 c) H- zone: ( see “J” )

* a narrow, light zone in center of sarcomere consisting of only myosin which is anchored at the M- line ( see “K”) in a dark-stained thickened band