

Name: _____

Function and Structure of Exercising Muscle

1. Thin filament, made of 3 proteins, contains myosin binding sites A. shortened
2. binds to calcium, which is released in (SR), Moves tropomyosin to expose myosin binding sites B. shortened
3. covers myosin head enabling muscle to relax, when calcium is released from (SR) tropomyosin uncovers the myosin head enabling contraction C. Tropomyosin
4. thick filaments • Heads contain actin binding sites • Use ATP to “Ratchet” (contract) • Have ATPase enzyme (which releases energy from ATP) • Stabilized by another protein called Titin D. Sliding Filament Theory
5. When an (ap) gets into t-tubules, SR releases Calcium , Calcium binds to troponin and takes tropomyosin off the actin binding sites, When the binding sites are uncovered the myosin heads can form a cross-bridge with actin, Then the myosin head will tilt and bring the actin closer towards the center (power stroke), The power stroke brings actin closer towards the middle generating force, After a myosin head tilts it breaks away from the binding site, returns to original position and attaches to another binding site farther down the actin filament E. shortened or get closer
6. What happens to the A-band when sarcomere is contracted? F. No change
7. What happens to I-band when the sarcomere is contracted? G. Troponin
8. What happens to H-zone when the sarcomere is contracted? H. stays the same length
9. What happens to M-line when the sarcomere is contracted? I. Actin
10. What happens to Z-disk when the sarcomere is contracted? J. Myosin