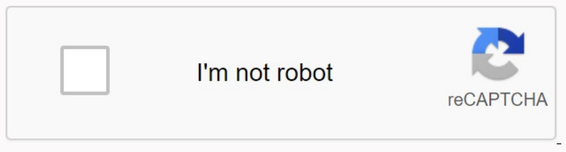
Biochemistry appling pdf



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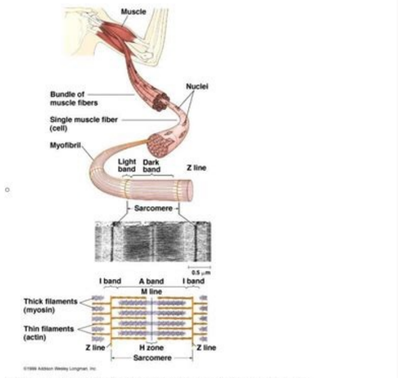
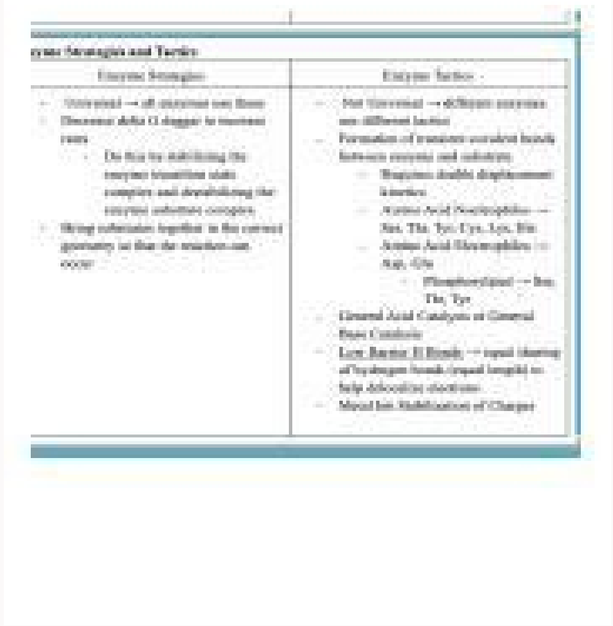
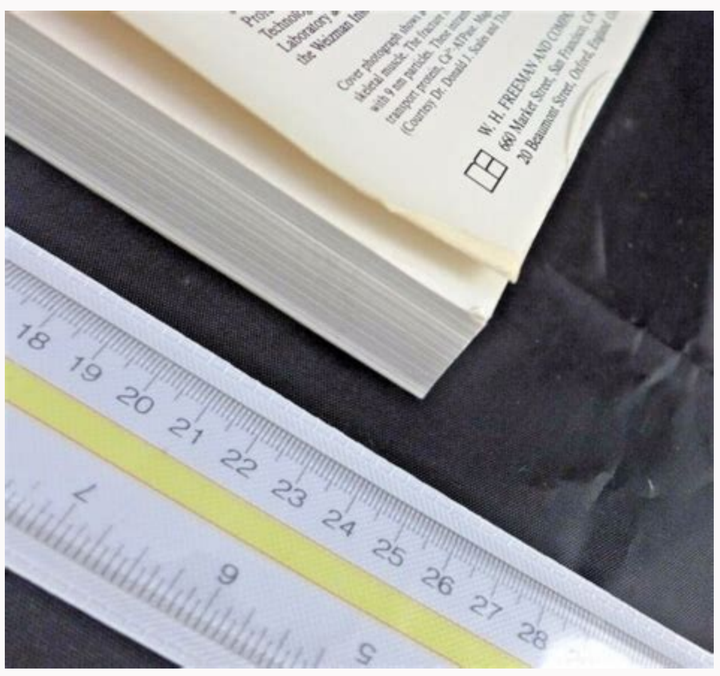


- Muscles are comprised of thick myosin filaments and actin filaments. The myosin filaments have little club like heads that use atp to contract and pull the actin filaments towards each other causing contraction. Sliding filament theory

- Different types of muscle fibers
  - Type 1 -slow twitch - red contains a high number of mitochondria, high levels of cytochromes and high levels of oxygen. You get a good capillary network around these cells. Myoglobin
  - Type 2 fast twitch - few mitochondria, lower myoglobin content, poor capillary network
- Functional properties
  - Type 1
    - Contracts slowly with little force
    - Resistant to fatigue
    - Lower density of contractile proteins
  - Type 2
    - Contracts rapidly, high force,
    - Fatigues quickly
    - Higher density of contractile proteins
  - Aerobic metabolism we get lots of ATP, if soemthing is u
- Metabolic profile
  - Type 1
    - Mitochondria, has a good blood supply and demand for atp is lower





Classification Optical Isomerism

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We can now return to compounds that differ only in their 3-dimensional structures. Geometric isomers have the same structural formulas but differ in the arrangement of groups at a single atom, at double bonds, or in rings. Cis- and trans-platin (see Figure 37) are examples of geometric isomers based on the different arrangement of groups at a single atom. Cis- and trans-2-butene differ in the arrangement of the methyl groups about the double bonds.

Although geometric isomers have completely different physical and chemical properties (for example, cis- and trans-2-butene have different boiling points and densities), optical isomers (also called enantiomers) differ in only one characteristic—their interaction with plane polarized light. When a beam of light is passed through a certain type of filter, all of the waves except those in one plane are removed. Figure 39 shows this plane-polarized light impinging upon and being rotated by two optical isomers. One of the optical isomers rotates the light in one direction, the other rotates the light in the opposite direction but by the same amount. In every other way, such as boiling point, density, refractive index, viscosity, and so on, the two optical isomers are identical.