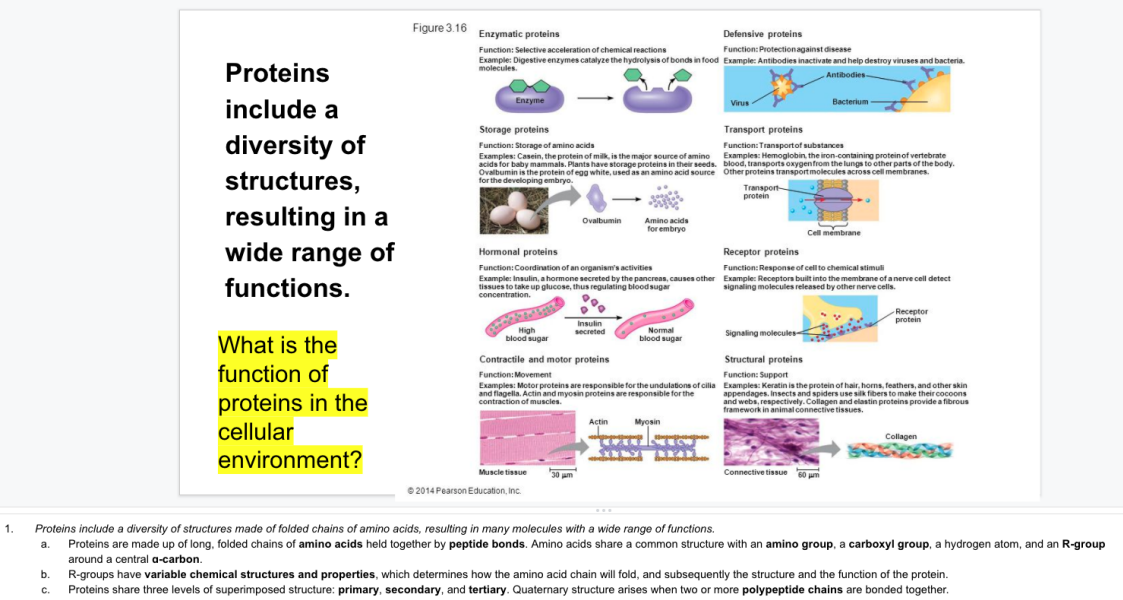
#ref #disorganized

1 | Overview

- Rubisco is apparently a cool protein
- Most abundant protein in the world
- Enzyme that is very slow, which is why plants make so much of it
- Rubisco in pop science

2 | Slide Intro



1. *Proteins include a diversity of structures made of folded chains of amino acids, resulting in many molecules with a wide range of functions.*
   a. Proteins are made up of long, folded chains of **amino acids** held together by **peptide bonds**. Amino acids share a common structure with an **amino group**, a **carboxyl group**, a hydrogen atom, and an **R-group** around a central **α-carbon**.
   b. R-groups have **variable chemical structures and properties**, which determines how the amino acid chain will fold, and subsequently the structure and the function of the protein.
   c. Proteins share three levels of superimposed structure: **primary**, **secondary**, and **tertiary**. Quaternary structure arises when two or more **polypeptide chains** are bonded together.

Figure 1: Pasted image

3 | Carbon Fixation

- Turning carbon from the air into carbohydrates
- Combines carbon from CO_2, light, and water to get carbohydrates
  - $6CO_2 + 6H_2O + light =$ carbs # Faults
- Rubisco sometimes accidentally binds oxygen to a sugar chain in a process called photorespiration
  - The cell actually has to expend more energy to fix this mistake
- Also it's like really really slow, processing around 3 reactions per second instead of other enzymes which often process thousands

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