

# [Pass helix, wherever they’re free to move.](https://assignbuster.com/pass-helix-wherever-theyre-free-to-move/)

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PassThe proteins primary structure refers to a long sequence ofamino acids within a peptide chain. The first structure is held along bypeptide bonds that are created through the method of protein biosynthesis.

Thefirst structure of a protein is decided by the gene similar to the protein. Aparticular sequence of nucleotides in DNA is transcribed into mRNA, which isread by the ribosome during a method which is known as translation. Thesequence of a protein is unique to that protein, and defines the structure andfunction of the protein. The sequence of a protein can be determined by methodssuch as mass spectrometry. However, it can also be read directly from thesequence of the gene using the genetic code. Amino acid residues are importantas when a peptide bond is made, a water molecule is lost, and so proteins arecreated of amino acid residues. Secondary structure refers to pleated structures that formwithin a polypeptide because of interactions between atoms of the backbone.(The backbone refers to the polypeptide chain except for the R groups).

Thecommon forms of secondary structures are the ? helix and also the ? helix foldedsheet. Each structure is held in their place by hydrogen bonds that formbetween the carbonyl O of one amino acid and also the amino H. In an ? helix, the carbonyl C= O of one amino acid is bondedwith hydrogen to the amino H (N-H) of an amino acid.

(The carbonyl of aminoacid one would form a hydrogen bond to the N-H of amino acid five.) Thispattern of bonding puts the polypeptide chain into a helical structure thatresembles a curly ribbon. The R groups of the amino acids stick outward fromthe ? helix, wherever they’re free to move. In a ? folded sheet, two or moresegments of a polypeptide chain line up next to every other, forming asheet-like structure held along by hydrogen bonds.

The hydrogen bonds formbetween carbonyl and amino groups of backbone, whereas the R groups extendabove and below the plane of the sheet. Merit The three-dimensional structure of a polypeptide chain isnamed its tertiary structure. The tertiary structure is primarily a result ofinteractions between the R groups of the amino acids that put together aspecific protein. R group interactions that contribute to tertiary structureinclude hydrogen bonding, ionic bonding, dipole-dipole interactions, anddispersion forces. for instance, R groups with like charges repel each other, whereas those with opposite charges will form an ionic bond which will thenattract. Polar R groups will type hydrogen bonds and alternative dipole-dipoleinteractions. Tertiary structures are hydrophobic interactions, during whichamino acids with nonpolar, hydrophobic R groups form together on the inside ofthe protein, leaving hydrophilic  aminoacids on the outside to act with the surrounding water molecules.

Quaternary structureMany proteins are created of one polypeptide chain and haveonly three levels. However, some proteins are created from multiple polypeptidechains, additionally called subunits. once these subunits come together, theyprovide the protein its quaternary structure. haemoglobin contains a quaternarystructure.

haemoglobin carries oxygen within the blood and is formed of foursubunits, two each of the ? and ? types. Another example is DNA polymerase, anenzyme that synthesizes new strands of DNA and consists of 10 subunits. Ingeneral, similar kinds of interaction that contribute to tertiary structure(mostly weak interactions, like hydrogen bonding and dispersion forces)additionally hold the subunits along to present quaternary structure. DistinctionCellulose consists of a long chain of many glucosemolecules. cellulose is a polysaccharide that is a kind of sugar. many of thosepolysaccharide chains are organized parallel to create polysaccharidemicrofibrils. The individual polysaccharide chains are bound along within themicrofibrils by hydrogen bonds.

The microfibrils are place along to createmacrofibrils. The microfibrils of cellulose are very powerful and inflexiblebecause of the presence of hydrogen bonds. Their arrangement is crystalline, which means that the microfibrils have crystal-like properties. cellulose is apolysaccharide that contains a structural role in animals and plants.

Inplants, cellulose is the compound that provides rigidity to the cells. Thebonds between every cellulose molecule are very strong, which makes cellulosevery hard to break down. cellulose is found in plant cell walls, where itprovides structure andl support. cellulose fibres are held along by pectinfibres, that bind the cellulose along to create even tighter cell walls inplants which provides them good strength. Haemoglobin is an oxygen carrying pigment, that is presentin red blood cells. It has 2 components.

One is named haem that is a prostheticgroup. and therefore the alternative component is goblin protein. haemcontaining proteins are present in aerobic animals and helps with the transportof oxygen. haem part is same in all the animals. The difference is in theglobin chains is that they need completely different amino acids in numerousanimals. haem has one central iron, that is connected to four pyrol rings.

Thepyrol rings are connected by methylene bridges. Globin is the protein part andcontains of four chains. In human, there are 2 alpha chains and other two maybe beta, delta, gamma or epsilon depending on the type of haemoglobin.

The main function of haemoglobin is to carry oxygen from thelungs to all the tissues of the body. once a haemoglobin comes in contact withoxygen, it combines with it and form oxy-haemoglobin. this can be a week bond. once blood reaches to tissues, wherever oxygen is deficient, the bond is brokenand oxygen diffuses out to tissues.

a number of CO2 is transported from tissuesto lungs through haemoglobin though the majority of it is transported viaplasma. The red colour of blood is as a result of haemoglobin. haemoglobinadditionally acts as a buffer. Buffer means that to resist modification in pH. Blood has 7. 4 pH and it remains within the range as a result.

If the pH changesthe lifetime of the person could also be endangered. Therefore, haemoglobinplays important role to keep the pH of blood correct and in its range of pH.