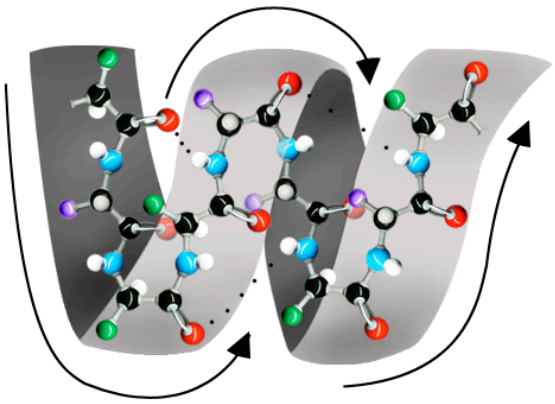
Secondary Structure

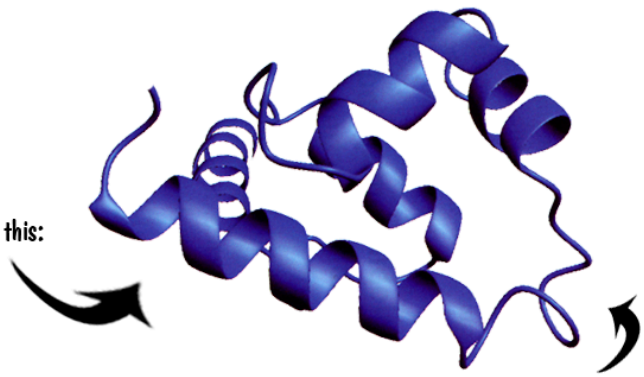
As a polypeptide is built, coils and folds due to hydrogen bonds in the backbone begin to form in an effort to find a shape that is stable. These coils and folds are the **SECONDARY STRUCTURE** of a protein.

α helix



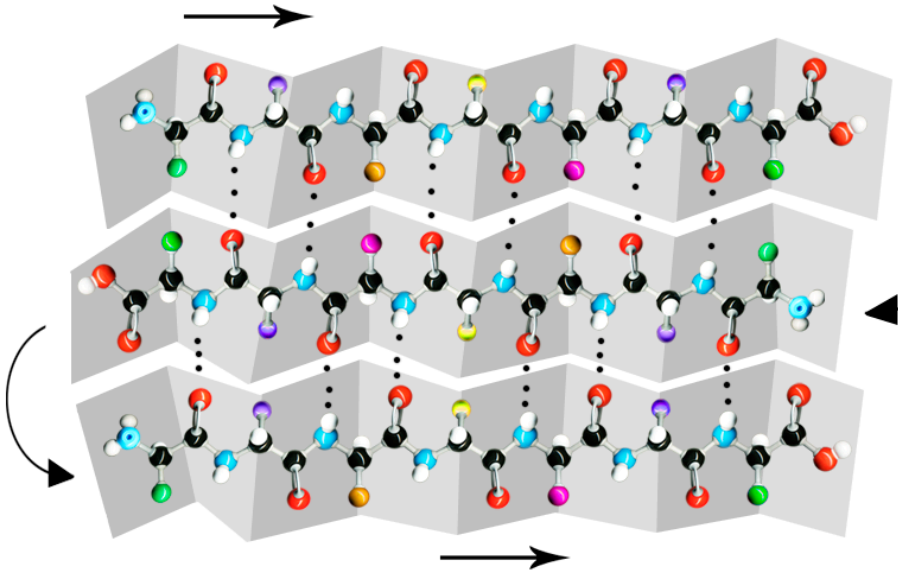
An alpha (α) helix forms when a hydrogen bond is created between the backbone carbonyl group of one amino acid and the amide hydrogen of another amino acid further down the chain, causing the backbone to form a helical "twist". Although side chains play a roll in whether or not this shape forms, they are not invloved in the hydrogen bonding.

Alpha helices are represented in 3-D computer models like this:



These little skinny parts of the polypeptide are called "turns"

β sheet



The polypeptide folds back and forth, forming parallel beta (β) sheets. Again, hydrogen bonds form between the carbonyl and amide groups. The side chains play a part in how the sheets are shaped, but are not inlvolved in forming hydrogen bonds.

Turns

Beta sheets are represented in 3-D computer models like this: