

Protein

Booklet 1:

Introduction to Structure and Function



Models and lessons created
by Kathleen M. Vandiver.
Graphics by Amanda Mayer.
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Using Your Booklet and Kit

BOOKLET INSTRUCTIONS:

Q: = Helpful Questions (answers on Page 30)

Bold type = required actions



























Underlined = new vocabulary

1. Open the kit. Check the number and location of all amino acids using the inside label shown on the right.

2. Check the small pieces in the bottom right section:

- 4 gray cylinders (phosphates)
- 3 yellow tubes (disulfide bonds)

Inside Label

Hydrophobic 			Hydrophilic   		
4 Met 	3 Cys 	1 Ala  1 Phe  1 Trp 	2 Asp  1 Glu 	4 Ser 	1 Thr  1 Tyr 
5 Pro 	3 Val 	2 Gly  1 Ile  1 Leu 	1 Arg  1 His  1 Lys 	1 Asn  1 Gln 	4 Phosphates  3 Disulfide bonds 



PART I: BUILDING PROTEINS

Introducing the Amino Acids

Proteins are the molecules that do most of the work inside the cell. Amino acids are the building blocks of proteins. An amino acid is a small molecule with different groups of atoms. Let's look at the structure of an amino acid.

1. Look at the chemical diagram below the photo. The diagram shows the atoms in a methionine.

Q: Name the different kinds of atoms you see in the diagram.

2. Find a methionine, or Met, in your kit. Hold it in your hand. Use the photo to identify the 3 parts of every amino acid:

- amino group (black block)
- acid group (gray cylinder with knob)
- side chain (colorful shape with abbreviation)

All amino acids have the same amino part and acid part. The side chains of amino acids are what make them different. Let's look at all the different side chains.

