

Name of Macromolecule:	Name of Monomer:	Drawing of Monomer:	Elements Included (indicate any that help identify group):	Type of bond created during addition of monomers:	Function of Macromolecule:	Names of Polymers (if any):
Proteins	amino acids	$\begin{array}{c} \alpha \text{ carbon} \quad \text{H} \quad \text{carboxyl group} \\   \quad   \quad   \\ \text{H}_2\text{N}^+ - \text{C} - \text{COO}^- \\   \\ \text{R side chain} \\ \text{amino group} \end{array}$	CHONS	Peptide bond	enzymes defensive proteins (antibodies) hormonal & regulatory proteins (insulin) receptor proteins storage, structure, transport, genetic regulatory	(protein) oligopeptides/ peptides polypeptides
Carbohydrates	monosaccharide	<p>pentose hexose <math>\text{C}_5\text{H}_{10}\text{O}_5</math></p>	CHO $\text{C}_m\text{H}_{2n}\text{O}_n$	glycosidic linkage	source of stored energy transport stored energy structural molecules recognition or signaling molecules	polysaccharide oligosaccharide
nucleic acids	nucleotide	<p>Base sugar</p>	CHONP	Phosphodiester bond	store, transmit, & express genetic info.	nucleic acid
lipids	glycerol 3 fatty acids triglyceride (simple lipids)	$\begin{array}{c} \text{glycerol} \\ \text{H}_2\text{C} - \text{C} - \text{CH}_2 \\   \quad   \quad   \\ \text{OH} \quad \text{OH} \quad \text{OH} \\ \\ \text{OH} \quad \text{fatty acid} \\ \text{O} = \text{C} \\   \\ \text{C} \end{array}$ <p>so on C+H's</p>	CHO lots of C+H	ester	store energy in C-C & C-H bonds structural roles in cell membranes fat serves as thermal insulation	triglyceride (not strictly polymer)

dehydration  
hydrolysis

## Macromolecules

huge macromolecular aggregations are not strictly polymers b/c individual lipid molecules are not covalently bonded together