

Macromolecules

Biological Macromolecule	Elements Ratio	Function	Monomer	Examples	Functional Group(s)
Carbohydrate -ose	CHO 1:2:1	<ul style="list-style-type: none"> - Short term energy storage - Structure (cell walls & exoskeletons) 	Monosaccharide	<ul style="list-style-type: none"> -Glycogen -Chitin -Cellulose -Glucose fructose galactose -sucrose lactose maltose 	-OH (hydroxyl)
Lipids	CHO 1:2:very few	<ul style="list-style-type: none"> - long term energy storage - Insulates body - Cushions body organs 	Triglyceride (Glycerol + 3 fatty acids)	Fats, Waxes, Oils, Steroids	<ul style="list-style-type: none"> -CH₃ (methyl) -OH
Proteins	CHON No ratio	<ul style="list-style-type: none"> - Transports O₂ - Structural support - Enzymes - Receptors (cell membranes) - Defense 	Amino Acids (20)	<ul style="list-style-type: none"> - Hemoglobin - Catalase - Antibodies - Keratin (hair, nails) - Actin/Myosin (muscles) 	<ul style="list-style-type: none"> -NH₂ (amino) -COOH (carboxyl)
Nucleic Acids	CHONP No ratio	<ul style="list-style-type: none"> - Instructions for making proteins - Genetic information passed from parent to offspring 	Nucleotide (5-C sugar + phosphate + nitrogen base)	DNA RNA	-PO ₄

HYDROLYSIS - adding water to split polymers

CONDENSATION - removing water to join monomers together