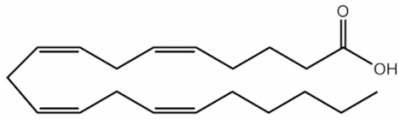


## Recognizing macromolecules – Reference Summary

### Lipids

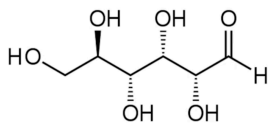
Lipids are non-polar and hydrophobic.



Arachidonic acid

### Carbohydrates

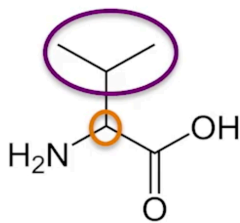
Carbohydrates follow the formula  $\text{CH}_2\text{O}$  and are polar.



Glucose

### Proteins

Proteins are made up of amino acid monomers, which consist of an  $\alpha$ -carbon (circled in red) bound to an  $\text{NH}_2$  group, a  $\text{COOH}$  group, and a side chain, or R group, (circled in blue). The R group can be polar or non-polar.



Valine (VAL or V)

### Nucleic Acids

Nucleic acids are built from nucleotide monomers, which consist of a phosphate group (circled in green), a sugar (circled in blue), and a base (circled in brown). Nucleotides are polar.

