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1.3 LIPIDS

Triglycerides

- Made from 1 glycerol molecule and 3 fatty acid chains
- Condensation reaction
  - Ester bonds
- Good source of energy
  - Lots of energy in a small volume
  - Many C–H bonds = lots of energy
- Insoluble in water
  - No effect on osmosis in cells

Phospholipids

- Made from 1 glycerol molecule, 2 fatty acid chains and 1 phosphate molecule
- Hydrophilic 'head', hydrophobic 'tail'
  - Polar
- Component of cell membrane – phospholipid bilayer
  - 'Heads' face towards aqueous environments e.g. cytoplasm

Tests

- Emulsion test – add ethanol and water, shake
  - Cloudy-white colour = positive result
  - Basis of test – lipids emulsify in the water and form tiny droplets

Monomers

- Fatty acids and glycerol are the monomers of lipids
- Fatty acids have the formula RCOOH
  - Fatty acids can be unsaturated (contain a C=C bond) or saturated (all C–C bonds)
- Insoluble in water, soluble in organic solvents (e.g. alcohol)

AQA

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