Polymerization

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Polymerization

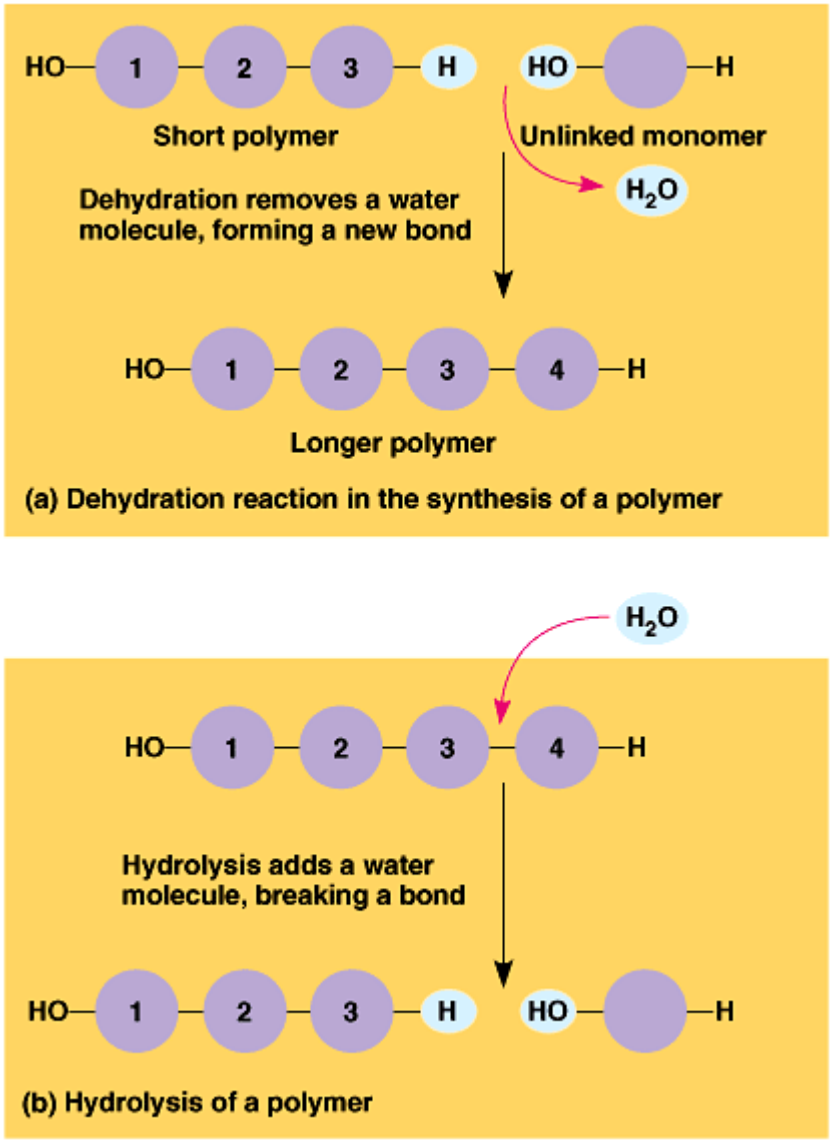
- Chemical reaction in which two or more molecules, often monomers, combine to form a larger molecule.

Polymerization

Monomers		Polomers
Sugars	→	Carbohydrates
Fatty Acids	→	Lipids
Amino Acids	→	Proteins
Nucleotides	→	Nucleic Acids

How do polymers form?

- The formation of carbohydrates, lipids, proteins and nucleic acids all form by a dehydration process.

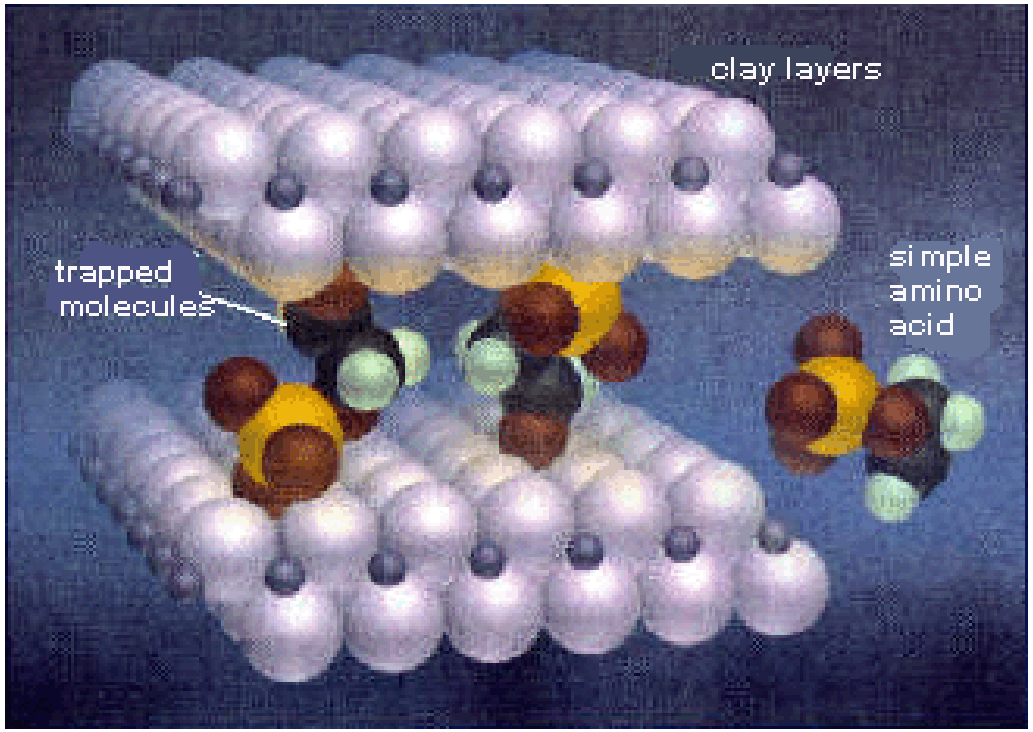


http://kentsimmons.uwinnipeg.ca/cm1504/carbohydrates.htm

Problems with forming polymers in pre-biotic conditions…

All of the polymers were formed by dehydration. In an aqueous environment a dehydration reaction will not readily occur. So how did the polymers form?

Clay Templates Theory



Clay is a asymmetrically charged molecule with metal ions. This structure could provide a template that monomers were attracted to, ordering them and bringing many monomers into close contact. As clay dries it would increase the chances of dehydration of the monomers forming polymers.

http://intranet.canacad.ac.jp:3445/BiologyIBHL2/708?view=print