

## DNA, Lipid Cheat Sheet

by rhettbro via cheatography.com/133961/cs/27520/

### **DNA-genetic material**

### Deoxyribonucleic acid

Nucleotid- a pentose sugar, a phosphate es->Nu- group, a nitrogen-containing

cleic acids base

Nucleotides are joint by phosphodiester bonds, phosphate group connect to the 3' C of one sugar, and the 5' C of the next sugar

Backbone made up of alternating pentose and phosphates

Nucleic acid strand has a polarity: a 5' end and a 3' end

amount of A = amount of T, G = C

### key features of DNA

right-handed double-stranded helix, uniform diameter

antiparallel: two strands run in opposite directions

5' phosphate group and 3' hydroxyl group complementary base pairing (A-T;C-G)

B-DNA consists of an double helix with approximately 10 bases per turn.

### DNA

Found in nucleus (and mitochondria)

Coded instructions for making proteins

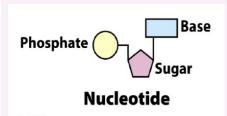
Weak bonds between bases(hydrogen bond)

Negatively charged

Relatively stable

Inheritable

### Nucleotide



### DNA

### Lipids

### Fatty acids-> Fats, Lipids, Membranes

Lipids are a broad group of compounds from biological origin that can dissolve in nonpolar solvents, such as chloroform and diethyl ether

Oily, greasy, waxy substances. Not water soluble. Extracted from organisms by organic solvents.

Even though they are different in structure (diff. types- fats,waxes,sterols,fat-soluble vitamins A D E K), they share some same properties

Functions:

Cell membrane

Energy storage

Thermal insulation

Buoyancy

Lipids in our body

Phospholipids

Free fatty acid

Triglyceride

Cholesterol ester

### **Energy storage**

### Glycogen in animals

glycogen used for short-term energy storage, they converted to glucose when energy is required.

### Starch in plants

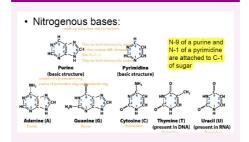
Lipids have more energy content per unit mass of carbohydrates

Lipids used for long-term energy storage

Triglycerides(甘油三酯) converted to fatty acids and glycerol → energy

Triglycerides are broken down to yield acetyl CoA.

### N base



### Lipids Classification

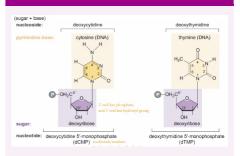
# DNA replication DNA repair genetic recombination DNA S' RNA synthesis (transcription)

# 

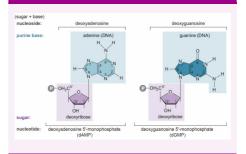
protein synthesis

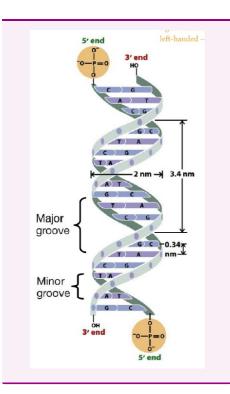
RNA

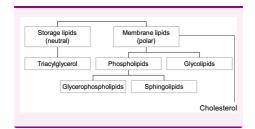
### Pyrimidine base



### purine base









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