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Biochemistry

BCH 202

1.) Vitamins can be broadly classified into 2 main categories based on their solubility

A. Fat soluble vitamins

B. Water soluble vitamins

Biochemical importance include helping regulate cell growth, reproduction and digestion

2.) Thymine- TDP is the coenzyme that is connected with the energy releasing reaction in carbohydrates metabolism; the enzyme dehydrogenase catalyses (oxidative decarboxylation) the irreversible conversion of pyruvate to acetyl co-A

Riboflavin- FMN is the coenzyme that participates in many redox reaction responsive for energy production 3.)

	Nucleonide	Nucleatida	Abbroviati	Nuclaia
Base	Nucleoside	INUCIEOLIDE	Abbreviati	Nucleic
			on	acid
Purine				
Adenine	Adenosine	Adenylate	Amp	RNA
	Deoxyade	Deoxyaden	Damp	DNA
	nosine	ylate		
Guanine	Guanosine	Guanylate	Gmp	RNA
	Deoxygua	Deoxyguan	Dgmp	DNA
	nosine	ylate		
Pyrimidine				
S				
Cytosine	Cytidine	Cytidylate	Cmp	RNA
-	Deoxycytid	Deoxycytid	Dcmp	DNA

	ine	ylate		
Thymine	Deoxythy	Deoxythym	Dtmp	DNA
	mine	idylate		
Uracil	Uridine	Uridylate	Ump	RNA

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5.) When a person shifts from a bright light to a dim light rhodopsin stored are depleted and vision is impaired. However within a few minutes known as dark adaptation time rhodopsin is resynthesied and vision is impaired. Dark adaptation time is increased in vitamin A deficient individuals.

6.) Vitamin D is the unnamed vitamin and is absorbed in the small intestine for which bile is essential; vitaminD enters the circulation bound to plasma -alpha globulin and is distributed through the body

7.) Acid hydrolysis cleaves susceptible Purine N- glycosyl bond in both DNA and RNA, when RNA is boiled in dilute acid adenine and guanine are released leaving an apurin acid which maybe further hydrolysis to a mixture of pyrimidine nucleotides. The pyrimidine are more resistant to acid hydrolysis Alkali hydrolysis of RNA produces a mixture of 2 and 3 prime nucleotides of cyclic mono phosphate intermediate

8.) The double helix structure was proposed by James Watson and Franck's crick in 1953 and it can be compensated to a twisted ladder; the two strands are anti parallel; the width is 20degreeA; each strand of DNA has a hydrophilic deoxyribose phosphate backbone; each turn if the helix is 34 degrees A; the two poly nucleotide chains are of identical but complementary to each other due to base pairing 9.)

,	RNA	DNA
Sugar moiety	Ribose	Deoxyribose
Nitrogenous bases	Adenine guanine	Adenine guanine
	cytosine and uracil	thymine and
		cytosine
Pairing	Adenine pairs with	Adenine pairs with
	uracil	thymine
Number of strand	One	Two
Reaction with alkali	Hydrolyeses	No effect

- 10.) Functions
 - a. Nucleotides are activated precursors of DNA and RNA
 - b. Nucleotides of adenine acts as carrier of methy group in the form of S-adenoyl methionine
 - c. ATP is a universal currency if energy in biological system
 - d. Gtp is involved in protein synthesis as source of energy
 - e. Adenine nucleotides are components of 3 major enzymes NAD+, FAD+, CoA
 - f. Nucleotides are metabolic regulators e.g C-AMP and c GMP