SYLLABUS DEL CORSO

Biochemistry I

1718-1-H4102D001-H4102D002M

Aims

Provide the concepts necessary to understand biological phenomena and energy changes connected to them
Explain the correlation between function and molecular structure, complex communication phenomena, interaction and control of cell and tissue functions;
Explain how organ functions can be regulated according to their particular biochemical processes, focusing on metabolic integration

Contents

The module will illustrate the importance of life-sustaining chemical reactions. It will deal with aspects of general biochemistry, sensory and metabolic biochemistry in humans. It will also describe in detail the integrated biochemistry of organs and tissues. It will provide useful knowledge for the best understanding of other medical disciplines and clinics

Detailed program

THEMES
• Macromolecules: structure and function.
• Enzymes. Control of the metabolic pathways. Diagnostic use of enzymes and isoenzymes.
• energy and metabolism: the reactions of life
• Energy needs and expenses under different conditions. Bioenergetics and metabolism in physiological conditions
• carbohydrate metabolism: digestion, absorption. aerobic and anaerobic glycolysis. The metabolism of galactose and fructose. Glycogen, glycogenolysis.
• Lipids and steroids
lipid metabolism: digestion and absorption. Catabolism of lipids. Synthesis.
Metabolism of cholesterol and its derivatives. The metabolism of ketone bodies.
Plasma lipoproteins and their metabolism
• Amino acids and nucleotides: digestion of proteins, absorption and transport of amino acids. The metabolism of amino acids. nucleic acid urea cycle: The metabolism of purine and pyrimidine nucleotides

Prerequisites

Basic knowledge of Chemistry and Physics

Teaching form

Lectures

Textbook and teaching resource

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Biochemistry, Berg et al.
 Textbook of Biochemistry with clinical aspects, Thomas Devlin

Semester

II semester

Assessment method

Written followed by oral

Office hours

By appointment