UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Molecular Biology 2

2021-2-H4101D006-H4101D018M

Aims

The module aims to describe the biochemical and molecular language, the correlation between function and molecular structure, the complex patterns of communication, interaction and control of cell and tissue functions

Contents

Regulation of blood glucose: liver and muscle glycogen. Insulin, glucagon. Hormones and hypothalamic pituitary. Hormones in the adrenal cortex. Hormones Sex hormones. Regulation of body weight. Nervous tissue biochemistry. Blood biochemistry. Hemoglobin and myoglobin oxygen transport. The blood coagulation cascade. Biochemistry of the liver: mechanisms of liver detoxification. Biochemistry of skeletal muscle and myocardium. Biochemistry of connective tissue. Homeostasis and the regulatory role of Calcium and Phosphorus: Calcitonin, Vitamin D, Parathyroid hormone.

Detailed program

Regulation of blood glucose: liver and muscle glycogen. Insulin, glucagon. Hormones and hypothalamic pituitary. Hormones in the adrenal cortex. Hormones Sex hormones. Regulation of body weight. Nervous tissue biochemistry. Blood biochemistry. Hemoglobin and myoglobin oxygen transport. The blood coagulation cascade. Biochemistry of the liver: mechanisms of liver detoxification. Biochemistry of skeletal muscle and myocardium. Biochemistry of connective tissue. Homeostasis and the regulatory role of Calcium and Phosphorus: Calcitonin, Vitamin D, Parathyroid hormone. Structure and function of proteins. Hemoglobin, prion proteins, amyloid. Folding, denaturation and renaturation, stability, cooperativity.Biochemistry of connective tissue: proteoglycans, glycoproteins, collagen, elastin. - Structure-function concept pathologies from misfolding. Molecular biology of the

cell membrane. Lipid rafts

Prerequisites

JS_ERR_COUNT = 0;JS_ERR_ARR = [];JS_LOADED = false;function _gtErr(e,url,line){if (++JS_ERR_COUNT > 10) {return;}var i=new Image();var err='e='+e.substr(0,1500)+',url='+url.substr(0,400)+',line='+line+',count='+JS_ERR_COUNT;JS_ERR_ARR.push(err);i.src='/gen204?jserr='+encodeURIComponent(err);i.onload=function(){i.onload=null;};}window.onerror=_gtErr; (function(){(function(){function e(a){this.t={};this.tick=function(a,c,b){this.t[a]=[void 0!=b?b:(new Date).getTime(),c];if(void 0==b)try{window.console.timeStamp("CSI/"+a)}catch(h){}};this.tick("start",null,a)}var a;if(window.performance)var d=(a=window.performance.timing)&&a.responseStart;var f=0c?1:0}; a:{var Za=_.m.navigator;if(Za){var $a=Za.userAgent;if($a){_.Ya=$a;break a}}_.Ya=""}var z=function(a){return-1!=_.Ya.indexOf(a)};var bb,db,eb,fb;_.ab=function(a,c,d){for(var e in a)c.call(d,a[e],e,a)};bb=function(a,c){for(var d in a)if(c.call(void 0,a[d],d,a))return!0;return!1};_.cb=function(a){var c=[],d=0,e;for(e in a)c[d++]=a[e];return c};db=function(a){var c=[],d=0,e;for(e in a)c[d++]=e;return c};eb=function(a,c){return null!==a&&c in a};fb="constructor hasOwnProperty isPrototypeOf propertyIsEnumerable toLocaleString toString valueOf".split(" "); _.gb=function(a,c){for(var d,e,f=1;f