UNIVERSITÀ DEGLI STUDI DI MILANO

SELEZIONE PUBBLICA, PER TITOLI ED ESAMI, PER IL RECLUTAMENTO DI N. 1 UNITÀ DI PERSONALE CON RAPPORTO DI LAVORO SUBORDINATO A TEMPO DETERMINATO DI CATEGORIA D - AREA TECNICA, TECNICO-SCIENTIFICA ED ELABORAZIONE DATI, PRESSO L'UNIVERSITÀ DEGLI STUDI DI MILANO - DIPARTIMENTO DI SCIENZE FARMACOLOGICHE E BIOMOLECOLARI - BANDITA CON DETERMINA n. 12890 del 26.10.2020, PUBBLICATA SUL SITO INTERNET DELL'ATENEO IN DATA 27.10.2020 - CODICE 21254

La Commissione Giudicatrice della selezione, nominata con determina n. 2154 del 16.2.2021, composta da:

Prof. Mitro Nico	Presidente
Prof. Aureli Massimo	Componente
Dott.ssa Farè Fiorenza	Componente
Dott.ssa Vitiello Emilia Tiziana	Segretaria

comunica i seguenti quesiti relativi alla prova orale:

GRUPPO DI QUESITI N. 1

Il candidato illustri le principali differenze fra metabolomica "targeted" e "untargeted".

Brano in inglese:

Abstract

Lipidornies and metabolomirs have ernerged as importa.nt tools for the characterization of specific physiological and patbological traits. The selection of the analytical approaches and the choice of a targeted rather than an untargeted strategy in metabolomics find their reasons in the driving hypothesis of the study, sample features and instrumental availability. Moreover, in the fast years, — omics approaches have found their application in the study of sex-related dimorphism. In this review, lipidomic and metaboloniic analyses are presented in a biomedical perspective. Here, we provide an updated overview covering recent applications of metabolomics and lipidomics in the area of sex-related differences in human and preelinical models. Experimen tal evidente underfines that sex is one of the most relevant biological varlables significantly influencing metabolornie and lipidornic profiles. This knowledge can be exploited for the identification of novel sex-specifica bionuwkers and innovative targets relevant for gender medicine.

GRUPPO DI QUESITI N.2

Il Candidato illustri l'utilizzo dello standard interno nell'analisi quantitativa in spettrometria di massa.

Brano in inglese:

Abstract

Metabolism is the set of life-sustaining reactions in organisms. These biochemical reactions are organized in metabolic pathways, in which one metabolite is converted through a series of steps catalyzed by enzymes in another chemical compound. Metabolic are categorized as catabolic, the breaking down of metabolites to produce energy, and/or anabolic, the synthesis of compounds that consume energy_ The balance between catabolism of the preferential fuel substrato and anabolism defines the overall metabolism of_a celi or tissue. Metabolomics is a powerful tool to gain new insights contributing to the identification of complex molecular mechanisms in the field of biomedical research. Both basic and transitional_ The enormous potential of this kind of analyses consists of two key aspects: (i) the possibility of performing so-called targeted and untargeted experiments through which ìs feasible to verify or formulate a hypothesis. Respectively, and (ii) the opportunity either steady-state analyses to have snapshots of the metabolic at a given time indor different experimental conditions or dynamic analyses through the use of labelecl tracers_ In this review. We will highlight the most important practical (e.g., different sample extraction approaches) and conceptual steps to consider for metabolomic analysis, describing also the application contexts in which it is used_ In addition, we will provide some insights the most innovative approaches and progress in the field of data analysis and processing. Highlighting how this part is essential for the proper extrapolation and interpretation of data_

Milano, 16 marzo 2021

La Commissione

Prof. Mitro Nico - Presidente

Prof. Aureli Massimo - Componente

Dott.ssa Fare Fiorenza - Componente

Dott.ssa Vitiello Emilia Tiziana - Segretaria