

# METABOLOMICS PLATFORM: A HOLISTIC APPROACH IN THE EXPLORATION OF METABOLISM.



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## 1. INTRODUCTION

The Metabolomics Platform is a joint research facility created by URV (Universitat Rovira i Virgili, Tarragona, Spain) and CIBERDEM (Spanish Biomedical Research Network in Diabetes and Associated Metabolic Disorders).

#### 2. GOALS

The main goal of the Metabolomics Platform is to offer metabolomic services to the biomedical and clinical research groups from CIBERDEM and URV. The Platform not only acts as a NMR measurement facility but to offer consulting, covering the process from the experimental design to data analysis.

#### 3. FACILITIES

The equipment includes:

600 MHz Bruker® Avance III spectrometer fitted with a cryoprobe, and with a Samplejet ® sample changer and Gilson ® 215 preparation robot. 500 MHz Bruker Avance III spectrometer coupled to a HR-MAS for the measure of tissue/cell cultures

## 4.METABOLOMIC WORK FLOW BY NMR





PREPARATION CONDITIONING



**MEASUREMENT** 

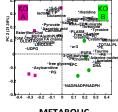


DATA ANALYSIS

Software: AMIX ®, Simca P+12 ®, Gene Spring MS ® MATLAB ®







**RESULTS** 

METABOLIC PATHWAYS







NMR HR-MAS

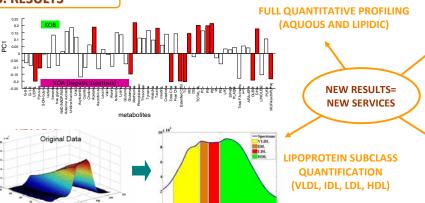


500MHz 600MHz NMR magnets

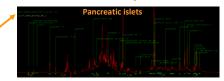




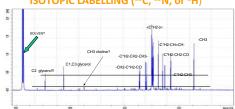
#### 5. RESULTS



#### **MEASUREMENT OF TISSUES / CELL CULTURES**



#### ISOTOPIC LABELLING (13C, 15N, or 2H)



# 6. CONCLUSIONS

- Metabolomics is able to provide a panoramic view of abundance changes in endogen metabolites indicative of biochemical phenotypes and to open a plethora of possibilities for new applications.
- New methods and studies need to be optimized in order to get reliable and robust results.

# 7.CONTACT US

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