Advanced biomarker discovery for earlier diagnosis and improved prognosis of NAFLD stages via high resolution mass spectrometry.

Fact Sheet

Project Information

RENAISSANCE

Grant agreement ID: 101107954

Funded under
Marie Skłodowska-Curie Actions (MSCA)

DOI
10.3030/101107954

Total cost
€ 0,00

EU contribution
€ 150 438,72

Coordinated by
Masarykova univerzita
Czechia

Objective

Non-alcoholic fatty liver disease (NAFLD) has a global prevalence of nearly 25% i.e. affects one quarter of the adult population. Early phase NAFLD is reversible and can be treated, but it may progress towards life-threatening stages such as non-alcoholic steatohepatitis (NASH), cirrhosis, and hepatocellular carcinoma (HCC). The conventional diagnosis of NAFLD stages requires liver biopsy and is time-consuming and costly and there is an urgent need to identify biomarkers that can be applied in routine clinical settings, such as through blood-based testing. The identification of blood biomarkers would support earlier diagnosis and improved assessment of prognosis, ultimately supporting preventive/intervention measures to avoid
progression to late stage liver disease and thus saving lives. In RENAISSANCE, a state-of-the-art liquid chromatography-high resolution mass spectrometry (LC-HRMS) metabolomics screening will be conducted upon the blood and blood-derived exosomes of a unique deeply phenotyped cohort of NAFLD patients for molecular biomarker discovery. Notably, exosome analysis shows promise for the identification of novel disease signatures but has yet to be applied to characterize NAFLD, providing high potential for the identification of new diagnostic/prognostic biomarkers for NAFLD. Furthermore, the LC-HRMS screen will be supported via targeted assays of redox metabolites and protein markers of acute inflammation. The integration of non-target and target data will provide insight into the underlying mechanisms of disease progression and further knowledge about potential causative factors of NAFLD.

**Fields of science**

natural sciences > biological sciences > biochemistry > biomolecules > proteins  
natural sciences > biological sciences > cell biology  
medical and health sciences > clinical medicine > hepatology  
natural sciences > chemical sciences > analytical chemistry > mass spectrometry

**Keywords**

NAFLD, metabolomics, biomarker discovery, liver diseases, NASH

**Programme(s)**

HORIZON.1.2 - Marie Skłodowska-Curie Actions (MSCA)  
MAIN PROGRAMME

**Topic(s)**

HORIZON-MSCA-2022-PF-01-01 - MSCA Postdoctoral Fellowships 2022

**Call for proposal**

HORIZON-MSCA-2022-PF-01

See other projects for this call
Funding Scheme

HORIZON-TMA-MSCA-PF-EF - HORIZON TMA MSCA Postdoctoral Fellowships - European Fellowships

Coordinator

Masarykova univerzita

Net EU contribution

€ 150 438,72

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Region

Česko > Jihovýchod > Jihomoravský kraj

Activity type

Higher or Secondary Education Establishments

Links

Contact the organisation  Website  Participation in EU R&I programmes  HORIZON collaboration network

Other funding

€ 0,00

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Permalink: https://cordis.europa.eu/project/id/101107954

European Union, 2023