Research area 2: Diet and Food Production

Joint Action: Biomarkers for nutrition and health

MIRDIET - Circulating microRNAs as markers of dietary intake

WHAT:

Although the relationship between dietary intake and health seems obvious, it remains always difficult to precisely relate dietary pattern to health parameters. Recently, microRNAs were identified as a new class of biomarkers in cancer and cardiovascular health fields. MIRDIET project aims at identifying differential responses of specific circulating microRNAs that occur during carefully assessed dietary interventions in individuals with various metabolic status.

WHO:

The consortium consists of 6 partners from three countries (France, the Netherlands and Switzerland). The partners are: INSERM Toulouse, INSERM Lyon, INSERM/ICAN Paris, University of Lausanne, Nestle Institute of Health Sciences and Maastricht University. The Mirdiet project management is under the responsibility of a coordination team: Dominique Langin (FR) is the project coordinator.

HOW:

MicroRNAs are noncoding RNAs that post-transcriptionally control gene expression and can be released by cells, circulating in blood in a stable form.
MIRDIET is based on adipose tissue miRNome studies by comparing hypo and hyper-caloric dietary interventions or intervention studies focused on dietary polyphenols, protein content or glycemic index. The biomarker potential of microRNA signature will be validated at the circulating level using blood samples from both same and unrelated dietary interventions. This original approach of microRNA selection provides a unique way to identify novel quantitative nutritional biomarkers. The project is based on 8 dietary interventions performed in at several centers of the consortium. By joining the BioNH initiative, the MIRDIET consortium will add to its field of expertise the possibility to identify dietary biomarkers at large-scale by using their clinical trials and knowledge.

WHEN:

MIRDIET runs for a period of three years from Dec 2014 to Dec 2017.

FUNDING:

MIRDIET is part of the JPI HDHL Joint Action Biomarkers in Nutrition and Health and is funded through a virtual common pot model. It receives approximately 0.7 million of funds through funding organisations of France, the Netherlands and Switzerland. Besides MIRDIET, the consortium FOODBALL is also funded through the JPI HDHL Joint Action Biomarkers in Nutrition and Health.

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