

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 always remains 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 aimed at identifying differential responses of specific circulating microRNAs that occur during carefully assessed dietary interventions in individuals with various metabolic status.

WHO

The consortium consisted of 6 partners from three countries (France, the Netherlands and Switzerland).

The partners were: INSERM Toulouse, INSERM Lyon, INSERM/ICAN Paris, University of Lausanne, Nestle Institute of Health Sciences and Maastricht University.

The MIRDIEt project was under the responsibility of a coordination team: Dominique Langin (FR) was 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 was 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 was validated at the circulating level using blood samples from both same and unrelated dietary interventions.

This original approach of microRNA selection provided a unique way to identify novel quantitative nutritional biomarkers. The project was based on 8 dietary interventions performed in several centers of the consortium.

By joining the BioNH initiative, the MIRDIEt consortium added to its field of expertise the possibility to identify dietary biomarkers by using their clinical trials and knowledge.

WHEN

MIRDIEt ran for a period of three years from Dec 2014 to Dec 2017.

FUNDING

MIRDIEt was part of the JPI HDHL Joint Action Biomarkers for Nutrition and Health and was funded through a virtual common pot model. It received approximately 0.7 M through funding organisations of France, the Netherlands and Switzerland.

Besides MIRDIEt, the consortium FOODBALL was also funded through the JPI HDHL Joint Action Biomarkers for Nutrition and Health.

Coordinator: **Dr. Dominique Langin** (Inserm, France)



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