

Technology Offer

Method for establishing an individual physical activity program for a subject for reducing an individual risk of the subject for developing a cardiovascular disease

Introduction

miRNAs are short (~21 - 23 nucleotide-long) non-coding RNAs involved in translational repression regulating a wide range of different physiological processes including development and aging as well as disease.

Since the general knowledge on miRNAs and their specific targets and functions has greatly increased, miRNAs hold the potential to serve as functional biomarkers to monitor and optimize the vasculo- and cardioprotective effects of physical exercise.

Invention

The present invention relates to a method for establishing an individual physical activity program for a subject for reducing an individual risk of the subject for developing a cardiovascular disease, comprising the following steps: (i) Determining the concentration of at least one circulating miRNA from capillary blood obtained from the subject at least before and after the subject has conducted physical activity, (ii) comparing the in step (i) determined concentration(s), and (iii) establishing an individual physical activity program for the subject based on the result of step (ii). The development or adaptation of an individual physical activity program is based on the result of step (ii) since the comparison is indicative of whether a subject has an individual risk for developing a cardiovascular disease.

Advantages of the invention

Regular physical activity is a cornerstone for the prevention of cardiovascular disease. Currently, physical activity is performed following the one-size fits-all principle. Increasing knowledge on the underlying protective mechanisms allows individual optimization of exercise training regimes. For the first time miRNA levels are used to:

- Characterize the individual epigenetic responsiveness to exercise training
- Monitor and control exercise training
- Optimize exercise training based on individual molecular predispositions

Ref.-No. M10/18

Areas of application

Diagnostics, biomarker

Keywords

miRNA, physical exercise

Development Status

In vivo experiments

Commercial Opportunity

The technology is offered for in-licensing and co-development

Patent Status

EP and US applications have been filed.

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