The

German Institute of Human Nutrition Potsdam-Rehbruecke (DIfE)

is a member of the Leibniz Association. The institute's mission is to conduct experimental and clinical research in the field of nutrition and health, with the aim of understanding the molecular basis of nutrition-dependent diseases, and of developing new strategies for treatment and prevention (Website: http://www.dife.de/?lang=en).

We invite applications for the newly founded Junior Research Group **Muscle Physiology and Metabolism (MPM)** for

1 Postdoc (m/f/d)

starting on **01.01.2021**.

Your mission

Type 2 diabetes (T2D) is a multifactorial and complex disorder that includes genetic predisposition. Yet, there is little doubt that obesity-induced insulin resistance and subsequent compensatory insulin secretion accelerates pancreatic islet exhaustion and thus the onset of T2D. In this project we will use novel, specific and reversible genetic tools to mobilize endogenous defenses against diabetes and obesity. This genetic tool is based on the CRISPR/Cas9 technology that has transformed genome editing. Instead of using CRISPR/Cas9 to cleave DNA, we use a modified nuclease-deficient Cas9 protein directed by guide RNAs to upregulate endogenous genes. We will apply a new CRISPR gene activation technology (CRISPRa) to upregulate Ucp1 and Gdf15 gene expression in skeletal muscle of insulin-resistant, obese mice. We will test the hypothesis that this simultaneous induction of Ucp1 and Gdf15 will correct insulin resistance and obesity by decreasing appetite, while increasing energy expenditure and glucose utilization. This project will establish the use of CRISPRa for the study and treatment of metabolic diseases. Under this umbrella, postdoctoral fellow will:

- Use adeno-associated virus vectors and intramuscular injections to achieve CRISPRa-mediated upregulation of endogenous Ucp1 and Gdf15 in skeletal muscle in mice in vivo.
- Conduct in vivo studies to assess the single and combined effects of increased skeletal muscle Ucp1 and Gdf15 expression on insulin sensitivity and energy balance in obese, insulin resistant mice.
- Develop a chemically inducible CRISPRa-system to switch gene expression on and off in vivo.

Your Skills and Requirements

- Excellent PhD in Life Science, Biology, Nutritional Science, Medicine, or similar
- Experience in animal studies within the area of metabolism, FELASA certificate (or equivalent) would be desirable
- Experience in working with adeno-associated virus vectors in vivo (intramuscular injection experience is desirable)
- Strong laboratory-based skills related to metabolism, biochemistry and molecular biology
- Experience with data analysis and presentation
- High degree of motivation and ability to work in an interactive research environment
- Excellent English (spoken and in writing) and data analysis and presentation abilities (MS Office, statistics)
- Curious mindset with a good literature knowledge in metabolism and physiology

Our Offer

- A vibrant and interactive research environment and state-of-the-art equipment
- Innovative research focused on understanding human metabolic complications
- Working in a vibrating and scientifically stimulating environment with excellent facilities for metabolic and nutrition research
- Excellent academic networking opportunities (nationally and internationally)
- Support in developing management and grant writing skills
- Support mobility with a jobticket for using the public transport

The advertised position is available initially for 2 years. The level of salary will be determined on the basis of standard/tariff conditions, present qualifications and professional experience (TV-L, level E13).

Contact

Please send your application (motivation letter, cv, certificates and names with contact information for references) until latest **October 23rd, 2020** to:

German Institute of Human Nutrition Potsdam-Rehbrücke
Human Resources and Social Services
Arthur-Scheunert-Allee 114-116
14558 Nuthetal

or per E-Mail to **jobs@dife.de**

For further information please do not hesitate to contact:

Dr. Maximilian Kleinert, Junior Research Group Leader, E-Mail: Maximilian.Kleinert@dife.de

By submitting your application documents, you grant us the right to collect, process, and use your personal data exclusively for the application selection process. For further information about your rights according to the data protection law, please contact the department Human Resources and Social Services (jobs@dife.de).