

TOBI – Targeting Obesity-driven Inflammation

Developing solutions for a modern epidemic

The increase of obese individuals has reached dramatic dimensions comparable to an epidemic. An unhealthy lifestyle – a major factor underlying obesity – is difficult to change. Obesity-associated complications can be severe and costly, including Type 2 diabetes mellitus and atherosclerosis, which provoke heart attacks, stroke and kidney failure. Direct costs associated with being overweight and obesity already exceed 6% of the total healthcare expenditures in Europe, and additional indirect costs are estimated to be at least twice as high.

The collaborative project 'TOBI' – Targeting Obesity-driven Inflammation – was specifically designed to develop strategies for abatement of obesity-related complications such as diabetes. It was one of the first projects approved by the European Commission within the 7th Framework Programme and has started in January 2008 to run for 36 months with a maximal EU funding of €2.98m.

TOBI research – a cutting-edge approach to combat obesity-related diseases

Recently, it has been brought to light that chronic inflammation of fat (adipose) tissue can cause both Type 2 diabetes and atherosclerosis,

two of the clinically most relevant complications. Fat tissue produces specific inflammatory molecules, the so-called adipokines, which mediate:

- Disruption of insulin action, resulting in insulin resistance and diabetes development;
- Impaired blood vessel function, which increases the risk for cardiovascular diseases such as myocardial infarction and stroke.

As little is known about the background of these inflammatory processes, TOBI focuses its research on elucidating the molecular mechanisms initiating and promoting inflammation in adipose tissue. This research is anticipated to identify novel target molecules suitable to develop specific drugs interfering with adipose tissue inflammation. These potential new drugs are sought to counteract the development of the devastating consequences of obesity.

In order to efficiently accomplish TOBI's research programme by sharing resources between project partners, the so-called TOBI Toolbox has been established. This toolbox consists of: analysis standards relevant to obesity research defined by the experts in the consortium; and a TOBI Biobank for sharing human material managed by an online database. Future applica-



tion of TOBI standards is expected to provide a valuable basis for European research on obesity in Europe.

TOBI Team – an efficient pipeline from discovery to pharmaceutical exploitation

TOBI pools the expertise of leading European experts from seven academic research institutions, which is complemented by three small and medium sized enterprises (SMEs). The research programme is designed to use straightforward assay systems for the identification of relevant molecules and pathways, which can feed the drug development pipeline for the participating SMEs. Hence, TOBI aims at translating excellent science efficiently into pharmaceutical exploitation resulting in clinical application.



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