

European team will develop Alzheimer vaccine under Austrian leadership

The development of a novel Alzheimer vaccine is at the centre of the EU-project MimoVax, which is coordinated by the Viennese company AFFiRiS GmbH. The consortium will invest 2 M€ and receive 2.4 M€ funding by the EC. Within the next 3 years these funds will be used to apply the proprietary Mimotope technology of AFFiRiS in order to develop a novel vaccination strategy to tackle Alzheimer's disease. MimoVax is characterised by high participation of small- and medium-sized enterprises (SME), and an innovative approach coupled with a clear concept for application. This project therefore received outstanding marks in the highly competitive last call for applications of FP6.

With 12 M cases worldwide Alzheimer's disease (AD) is the most common form of dementia, whose progress can not be prevented by any treatment. The concomitant symptoms including confusion and loss of orientation affect patients increasingly until they become entirely dependent on care, which is associated with mounting costs. With an aging population in developed countries the impact of AD is predicted to increase.

The STREP MimoVax promises to address AD directly and such tackle all associated societal problems. Under the leadership of AFFiRiS partners from Austria, Germany and Spain joined forces for a project, which was submitted to the last call for proposals of the framework programme 6 (FP6). Despite this highly competitive call MimoVax received an outstanding evaluation and secured 2.4 M€ funding by the EC. The 5 SME partners will invest an additional 2.0 M€ themselves, which provides strong evidence for their commitment to the success of this endeavour.

The crucial technology for MIMOVAX is provided by AFFiRiS GmbH, a Vienna based Biotech Company. On the basis of the proprietary Mimotope technology this company successfully develops innovative vaccines against AD and other diseases.

In the mean time the coordinator Dr. Mattner (AFFiRiS) was eager to initiate the project, as the novel AD vaccine should complete all the pre-clinical tests and phase 1 of the clinical trial within 3 years. Therefore, two weeks after the official start of the project on October 1 the participants met in Vienna to discuss their way forward in detail.

Background:

Beta-Amyloide (BA)

Alzheimer's disease is caused by the deposition of BA into plaques within the brain of patients. Main constituent of BA are protein fragments of 40-42 amino acids, the building blocks of proteins. The first AD vaccine developed by AFFiRiS is directed against all forms of BA and can successfully reduce plaques in a mouse model.

MimoVax Office
Dr. Iris Grünert

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Phone +43(1)786 9595 15
Fax +43(1)786 9595 20
E-Mail: office@mimovax.eu
www.mimovax.eu

MimoVax aims at rare forms of BA, which contains a mixture of chemically modified forms. Some distinct forms might have particularly damaging activities and therefore serve as useful targets for vaccination. Within MimoVax, suitable technology is applied to induce a targeted immune response against single species of BA.

Mimotope Technology

Vaccination initiates a response of the immune system against certain compounds and such promotes their neutralisation. MimoVax will therefore mobilise the patients own defences against BA without damaging side effects. Chemically distinct forms of BA are formed, when they come off the surface of cells within the brain. Similar to a broken bottle, where some shards are sharper than others, some forms of BA might be more dangerous. Research so far has neglected the variation between the different forms of BA. With the Mimotope technology, AFFiRiS has developed a technology, which can target individual forms of BA with particularly damaging potential.

MimoVax

MimoVax – Alzheimer’s vaccine – is a specific targeted research project (STREP) for development and optimisation of a first treatment to stop the progression of Alzheimer’s disease. This project aims at developing a vaccine against modified forms of Beta Amyloid (BA). The immune system of AD patients will be activated to attack and remove BA and such fight the cause of the disease directly. In addition new diagnostic methods will be developed in order to monitor treatment efficacy.

MimoVax is coordinated by AFFiRiS GmbH, Vienna, and will spend 4.4 M€ within three years, 2.0 of which are contributed by the participating SMEs and 2.4 M€ by the EC.

Further information at www.mimovax.eu

Consortium

The consortium is formed by 7 partners from 3 countries, including 5 SME and 2 universities. The coordinator carefully selected participants for their scientific and technical expertise: biolution grünert & co keg (A), JSW-Research GmbH (A), piCHEM research & development – Dr. Fritz Andraea (A), EuroEspes, SA (E), Philipps-University Marburg (D), and Technical University Munich (D)

AFFiRiS GmbH (A)

AFFIRIS GmbH develops vaccines on the basis of peptides on 600 sqm laboratories at the Campus Vienna Biocenter. We employ 20 staff to perform research for novel vaccines to treat Alzheimer’s and atherosclerosis. The company established its technology platform with seven patents filed (4 of which are registered in Austria already). (www.affiris.com).

biolution GmbH (A)

biolution focuses on science communication and grant-management in clinical research, life sciences and biotechnology. Our team combines know-how in research, communication and project management. Within MimoVax biolution is in charge of administration, knowledge transfer and public relations. (www.biolution.net)

MimoVax Office

Dr. Iris Grünert

Phone +43(1)786 9595 15
Fax +43(1)786 9595 20
E-Mail: office@mimovax.eu
www.mimovax.eu

JSW-Research GmbH (A)

JSW-Research's competences comprise R&D and contract research as well as the performance of clinical research complemented by histological and biochemical evaluation methods. Its staff possesses long standing experience with a quality assurance system and behavioural studies. (www.jswresearch.com)

piCHEM research & development – Dr. Fritz Andreae (A)

piCHEM has been working in the field of peptide chemistry for more than 10 years. This enterprise put its main stress on developing and producing peptides for all kinds of research purposes worldwide. piCHEM pharmaceutical companies supplies pharmaceutical companies with substances for their tests worldwide. (www.pichem.at)

EuroEspes, SA (E)

EuroEspes expertise includes regular clinical and lab evaluations of patients as well as clinical trials, preclinical pharmacology and genetic diagnosis. Having focused on biochemical research of disorders of the Central Nervous System, EuroEspes has already performed more than 20 clinical trials concerning Alzheimer's disease. (www.euroespes.com)

Philipps-Universität Marburg (D)

The department of Neurology of the Philipps-Universität Marburg is mainly focused on researching neurodegenerative disorders, including Parkinson's disease and Alzheimer's disease. It has conducted more than 50 clinical trials in the last few years. The Phillipps-Universität Marburg is also part of the Competence Network Parkinson's disease and the Competence Network Dementia. (www.med.uni-marburg.de/d-einrichtungen/neurologie/)

Technische Universität München – Klinikum rechts der Isar (D)

The Technische Universität of Munich employs radiolabelled tracers, magnetic resonance imaging and optical techniques to identify and visualize biological processes. The aim of the imaging section is the development, validation and application of imaging techniques to study cells and "in vivo" models like animals and patients. The TUM possesses a long-term experience in the field of early detection and differentiation of dementia from other pathological processes. (www.nuk.med.tu-muenchen.de)