

**FP7 cooperation Work Program 2010: Health  
Abstract for partner search**

**Group for Neurodegenerative Disease Research  
Ruđer Bošković Institute**

**About the Company**

Ruđer Bošković Institute (RBI) is the largest Croatian research centre in sciences and science applications. In the multi-disciplinary environment of the Institute more than 500 academic staff and graduate students work on problems in experimental and theoretical physics, chemistry and physics of materials, organic and physical chemistry, biochemistry, molecular biology and medicine, environmental and marine research and computer science and electronics.

**Research Focus**

The focus of our work is basic and translational research on neurodegenerative diseases, in particular Alzheimer's disease. We are currently working on three main projects: 1) The role of lipids in Alzheimer's disease, 2) The mechanism(s) of  $\gamma$ -secretase cleavage and 3) Biomarkers for early diagnosis of Alzheimer's disease.

1) The role of lipids in Alzheimer's disease. We are currently testing the mechanism(s) of cholesterol-effect on metabolism of  $\beta$ -amyloid precursor protein (APP), presenilin 1 (PS1) and  $\beta$ -secretase (BACE1).

2) The mechanism(s) of  $\gamma$ -secretase cleavage. We have previously shown that  $\gamma$ -secretase cleavage of APP and Notch1 at  $\gamma$ - and  $\epsilon$ -site is not linked (Schroeter *et al.* PNAS 2003, Hecimovic *et al. Neurobiology of Disease* 2004). We are currently testing whether other  $\gamma$ -secretase substrates share similar/unique mechanism(s) of  $\gamma$ -secretase cleavage.

3) Biomarkers for early diagnosis of Alzheimer's disease. We are currently testing the levels of A $\beta$ 42, total-tau and phospho-tau (P<sub>181</sub>-tau) in the cerebrospinal fluid (CSF) of Alzheimer's disease patients and non-demented age-matched individuals. This project is done in close collaboration with the Department of Neurology at the University Hospital Zagreb. We are also searching for other biomarkers in the CSF which will enable early and differential diagnosis of AD as well as other neurodegenerative diseases.

**Expertise**

Group for Neurodegenerative Disease Research has extensive expertise in basic and translational research of Alzheimer's disease. We have expertise within molecular and cellular biology, biochemistry, medical biology and medical genetics as well. The group has extensive collaborations with Dr. Harald Steiner and Dr. Stefan F. Lichtenthaler (Adolf-Butenandt-Institute, University of Munich, Germany), Prof. Alison Goate (Washington University School of Medicine, US) and Dr. Jasna Peter-Katalinic (University of Muenster, Germany).

**FP7 Partnering**

Group for Neurodegenerative Disease Research seeks coordinators and partners for participation in the FP7 program: HEALTH 2010. We have knowledge and experience to contribute to projects within the following call:

HEALTH 2010.4.2-8.: Coordination action in support of the implementation by participating States of a Joint Programming Initiative for combating neurodegenerative diseases, in particular Alzheimer's disease.

For further information about our research and expertise do not hesitate to contact us. We are welcoming discussions about any project proposals and consortium ideas.