

Vienna, Austria and Bolzano, Italy, 27 April 2012

Parkinson's disease: causal research leads to new therapies

The Institute of Molecular Biotechnology and the Center for Biomedicine at the European Academy in Bolzano present a joint research project.

Parkinson's disease is one of the most common neurological illnesses of our time. World Health Organization experts forecast a 100% increase in the number of cases over the next 25 years. To conduct research on the basic mechanisms of this age-related disease and then develop more effective treatments, two renowned research institutes started a joint project: the Institute of Molecular Biotechnology in Vienna, Austria (IMBA) and the Center for Biomedicine at the European Academy of Bolzano, Italy (EURAC). The two institutes have already joined forces on a successful research project once before: they worked together to sequence a risk gene for sudden cardiac death. The new project was presented on 27 April in Bolzano by Josef Penninger, director of IMBA, and Peter Pramstaller, head of the Center for Biomedicine.

Parkinson's disease is a syndrome that does not just strike individual cells – it affects entire regions of the brain. The development of this disease is complex, and conducting research into it requires effective collaboration across a wide range of competencies. Biomedical research combines insights from the fields of medicine, biology, and technology. IMBA in Vienna conducts research into the causes of disease at the genetic and molecular levels. Its researchers examine how disease patterns develop in flies, and then apply their findings to mice in order to derive what they mean for people.

At the Center for Biomedicine at the European Academy of Bolzano, a team of molecular biologists, doctors, bioinformaticians, and statisticians conducts research into human genetics as well as longitudinal studies on widespread diseases. In their collaboration with public health authorities in South Tyrol and practicing doctors from all fields, they apply insights from clinical practice to laboratory research and back again.

In this joint research project, IMBA and EURAC will be merging the data they have collected independently of one another in animal models and human genetic studies. The target is to discover further genes that are responsible for the onset of Parkinson's disease. One step is to compare the gene variants the Center for Biomedicine identifies during its studies with the findings from animal model studies conducted by IMBA. At the same time, the functional genetic data IMBA identifies as relevant to the disease will inform the development of the human genetic studies. In this way the two institutes are searching together for risk genes that prove relevant to Parkinson's disease in both fields of research.

Another goal of the project is to develop a „prototype“ based on the findings, one that plays a role in other related neurodegenerative illnesses and disease processes, like Alzheimer's, and can also serve as the basis for new treatment strategies.

This project is sponsored by the South Tyrol Sparkasse Foundation.