“Rusty” Gage visits Bagadilico

In 1998 Fred H. Gage broke a long-standing dogma in neuroscience, proving that human beings continue to produce brain cells throughout life. For decades neuroscientists stood firm in their belief that the neurons you are born with are the ones you get. On January 18 Professor Gage visited Bagadilico to talk about his research in an area that has turned neuroscience on its head over the past decade.

Visiting Lund, where he once was a post doc at Anders Björklund’s lab, Fred Gage talked about his latest findings in the area of neural plasticity. In his efforts to understand Rett syndrome he has studied processes that are still speculative today, namely the idea of high rates of somatic mutations caused by transposons jumping around and landing in the middle of genes. This process is possibly contributing to the severity and variability of the disease.

The phenomenon of continued brain cell production, known as neurogenesis, has opened up a budding field with new exciting data pouring in every year. Further research may hold great promise for the future, including the possibility of replacing brain tissue in neurodegenerative diseases and repairing spinal cords damaged by trauma.

However, the capacity to actually transplant immature populations of brain cells back into the brain still escapes neuroscientists. Too little is yet known about underlying cellular and molecular structures to be able to successfully transform new brain cells into fully functioning mature cells in the adult brain. Efforts to achieve this goal are today shared by many neuroscientists across the globe.

News in Brief

Bagadilico Article in JCI Gets Media Buzz

A study, led by Bagadilico scientists Patrik Brundin, Elodie Angot and Christian Hansen, is published in the February issue of the Journal of Clinical Investigation. The pre-publication release of the article caused a buzz in the Swedish media landscape with the study being cited in the major newspapers, Swedish national radio and television.

The study investigates the misfolding of abnormal α-synuclein proteins in brain cells. It is suggested that the sick proteins slowly move between cells, eventually triggering the destruction of the new host cell. The discovery could potentially lead to new therapeutic strategies for neurodegenerative diseases aimed at blocking the spread of protein misfolding throughout the brain.

Christian Hansen explains the importance of the new findings: “We have now shown that α-synuclein not only can transfer from one cell to another, but also that the transferred protein can seed aggregation of α-synuclein in recipient cells as well. This could be an important mechanism for the spread of the pathology.”

Patrik Brundin Receives ERC Advanced Grant

Professor Patrik Brundin has been awarded the European Research Council’s ‘Advanced Grant’ for 2010. The ERC Advanced Grants support excellent and innovative research led by established and world-class research leaders. Patrik Brundin conducts research on disease mechanisms in Parkinson’s disease and was awarded funding for his project; “Prion-like transmission of α-synuclein in Parkinson's disease”.

- It is extremely stimulating and gratifying to get this funding! It gives me an opportunity to invest long term in some high-risk projects that I believe in, says Patrik Brundin.

ERC awards a total 260 Advanced Grants this round, eleven of them went to researchers working in Sweden. A total of 2009 applications were received last year, 75 of them from researchers active in Sweden.

Journal of Parkinson’s Disease Launched

2011 sees the birth of a new journal dedicated solely to scientific advances in Parkinson research; The Journal of Parkinson’s Disease (JPD). The publication will be broad-ranging within this field, aiming to promote progress in the epidemiology, etiology, genetics, molecular correlates, pathogenesis, pharmacology, psychology, diagnosis and treatment of Parkinson’s disease. One advantage with JPD is its ability to offer rapid publication made possible by the fast manuscript processing times. Another is the affordable open access option. Bagadilico’s Patrik Brundin shares the position of editor-in-chief with renowned scientist Bill Langston, founder and CEO of the Parkinson’s Institute in California.

Visit the Journal of Parkinson’s Disease website - Click here
A national Parkinson’s registry has long been on the wish list among clinicians and researchers in Sweden. A comprehensive database containing information about each patient’s medical history would create new opportunities for understanding the therapeutic effects of different treatments. This vision is now quickly becoming a reality.

Through an enduring effort from Bagadilico’s Per Odin, Sweden now takes a leading position in its ambition to build a comprehensive registry over PD patients. National disease registries are fast becoming a growing trend internationally, but as yet there is none for Parkinson’s disease. Now, Sweden can become the first country in the world to put one in place.

The initiative for a PD-registry is the result of a collaborative effort between Skåne’s University Hospital and Karolinska Institutet. Per Odin, clinic director at Bremerhaven in Germany, sees many benefits with a nationwide register.

- It’s really giving us beneficial effects in two different areas. First, there are the immediate prospects for improvements in health care, by giving doctors instant access to relevant information about the patient. Then we also have the research-related opportunities, using the registry to look at the influence of different treatments in larger populations over longer periods of time.

In the long term the database presents a clear potential to influence disease development in Parkinson’s. If a particular drug is believed to have positive effects this information will be more easily captured through the statistics presented by the new register. Armed with scientifically sound information it will also become easier for clinicians to justify to authorities that certain drugs should come to the benefit of all PD-patients.

The MS-registry a pioneer and a role model

The establishment of a Parkinson’s registry had not been possible without close contact with the people responsible for the Swedish registry for multiple sclerosis in Stockholm. For twenty years the MS-registry has gradually expanded to include a large majority of the country’s multiple sclerosis patients. The many experiences gained through this working process have been invaluable to Per Odin and his colleagues.
The fact that this PD-registry has even come to the fore has a lot to do with our collaboration with the Swedish MS-registry. They have come a lot further and to date include about 80-90 percent of MS patients in their database. In addition, they have been very productive scientifically with the registry.

In recent years, several disease-modifying drugs have been developed for MS. Information provided by the Swedish MS-registry has played an important role here. The statistics gathered on MS-patients has clarified how various medications have affected disease progression in a large number of patients. Per Odin hopes that the Parkinson’s registry will have a similar impact.

**Test runs kick off in spring**

The conditions in Sweden today are particularly suited to the launch of a national Parkinson’s registry. With a relatively liberal confidentiality legislation in place coupled with opportunities for matching already existing national registries, the necessary circumstances are there to give the project a needed boost in the start-up phase.

- There is a considerable interest in these kinds of registries today, and the support of the MS-registry presents us with ideal conditions. If it’s to be done at all, now is definitely the time.

The first test runs for the registry are expected to kick off this spring. Per Odin believes that it will be another two years before the patient database is large enough to produce statistically meaningful conclusions. With a functioning Parkinson’s registry in place, available to all Swedish hospitals, the main objective of the project will be achieved - a better and more consistent quality in Parkinson’s care throughout Sweden.

Per Odin has long been a fervent advocate for a Parkinson’s registry in Sweden. A fruitful collaborative effort with Sven Pål-hagen and Per Svenningsson from Karolinska Institutet has fast-tracked the birth of the registry with test runs expected to start within a couple of months. The long term ambition is a better and fairer Parkinson’s treatment throughout Sweden.