Advancing Research on Degenerative Neurological Illnesses

Manuela Neumann, whose work focuses on amyotrophic lateral sclerosis and frontotemporal dementia, has accepted a new professorship at DZNE and the University of Tübingen.

Bonn/Tübingen, June, 18th, 2012. Professor Manuela Neumann has been appointed to a joint professorship at the DZNE and the University of Tübingen. In June, she has been starting the research group “neuropathology” at the DZNE site Tübingen and will also serve as the medical director of the neuropathology department at the Institute for Pathology and Neuropathology of the medical faculty and the university clinic. In her past research work, Neumann achieved important insights for understanding the cellular mechanisms that lead to amyotrophic lateral sclerosis (ALS) and frontotemporal dementia (FTD). Now she is seeking to illuminate these mechanisms in greater detail in order to develop new approaches for treatment and diagnosis. In order to assure the optimal translation of research into clinical practice, she intends to collaborate with other research institutions in Germany to establish a brain tissue bank.

ALS and FTD are two degenerative diseases affecting the nervous system. ALS, an uncommon illness that leads to rapidly progressive muscular weakness, disease, FTD results in alterations in personality and social behavior. Both are based on a similar underlying mechanism. Several years ago, Manuela Neumann and her colleagues showed that changes in the DNA/RNA binding protein TDP-43 play a critical role in these degenerative diseases. In healthy individuals, most of this protein is found in the nuclei of nerve cells (neurons), where it is involved in processing genetic information (mRNA). In the neurons of patients with ALS or FTD, TDP-43 accumulates outside the nucleus, forming pathological deposits in the cytoplasm. This major discovery was published in 2006 in the renowned journal “Science”, and opened up a new area for research.

Since that time and an additional abnormal change as it occurs in addition to the normal changes, including various molecular biological findings to clinical diagnosis, she hopes to contribute to improving existing clinical methods.
Neumann has many years of experience in the field of neuropathology. She played a significant role in the development of the German Brain Tissue Bank Network (Brain-Net), and gained additional experience working at the Brain Bank at the University of Pennsylvania, Philadelphia (USA). The 43-year old physician and researcher completed her medical studies in Munich and Göttingen. After research stays at the University of Pennsylvania and at LMU Munich, she worked until the end of May 2012 as an Assistant Professor of Experimental Neuropathology and Senior Physician. The distinctions she has earned is the Hans und Ilse Breuer Foundation research award. Her work during the next five years will be funded by the Helmholtz Association’s Initiative and Networking Fund for excellent women in science.

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