***Neurodegenerative Diseases:* From the Patients to the Lab and Back Again**

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Degenerative disorders of the nervous system, including Alzheimer's, Parkinson's, Huntington's, motor neuron and prion diseases, are among the most debilitating illnesses, putting an enormous strain on both social and health care budgets throughout the world. *Neurodegenerative Diseases* is a bimonthly, multidisciplinary journal for the publication of advances in the understanding of such diseases.

Scientific analyses of tissues, cells, fluids and DNA derived from patients with neurodegenerative diseases frequently provided the starting point for many of the most important discoveries that led to a detailed understanding of the mechanisms involved in the pathogenesis of these diseases. Alzheimer's disease (AD), first described in 1907 by the neuropathologist and psychiatrist Alois Alzheimer, provides a good example. The careful description of the clinical phenotype led to the hypothesis of a nosological entity and the search for the cause of the disease. Thorough histological analysis of the brains of AD patients revealed the morphological substrates associated with the clinical syndrome, i.e. amyloid plaques and neurofibrillary tangles. Biochemical dissection of amyloid plaques and neurofibrillary tangles led to the identification of their major protein components and, subsequent-

ly, to the genes generating these proteins. Genetic studies identified mutations which led to early manifestation of AD, allowing for the generation of disease models by introducing these disease-causing genes into mice that consequently displayed essential aspects of AD, e.g. amyloid plaque deposition and learning deficits. Finally, these transgenic mouse models for AD were used to explore therapeutic strategies aimed at lowering amyloid plaque deposition by various strategies including immunotherapies and secretase inhibition. Thus, the circle of discovery, which starts by examining patient material, is closed by bringing the therapeutic strategy back to the patient with the attempt to cure or prevent the disease.

Consequently, *Neurodegenerative Diseases* publishes results from basic and clinical scientific research programs designed to better understand the normal functions of genes and proteins involved in neurodegenerative diseases, to characterize their role in pathogenic disease mechanisms, to model their functions in animals and to explore their roles in the diagnosis, treatment and prevention of neurodegenerative diseases. It is our firm belief that successful strategies for novel treatments of neurodegenerative diseases will emerge from the intelligent integration of basic neurobiology with clinical sciences.

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This starting issue reflects this scope by providing exciting new findings, including a novel immunization approach, a potential role of beta-amyloid in psychosis, anesthesia as a risk for AD patients, a novel application procedure of neurotrophins, as well as two comprehensive mini-reviews on apoptosis and interfering RNAs. Finally, we also present a special section on the current status of clinical drug trials in the CNS field, provided by Professor

Paul Herrling, Head of Corporate Research at Novartis. A similar section on genetic risk factors is currently being prepared by Professor Rudolph E. Tanzi, Head of the Genetics and Aging Unit, Massachusetts General Hospital, Boston, Mass., USA. We are looking forward to bridging the gap between basic and clinical science by disseminating essential knowledge necessary to develop treatments for these devastating diseases.