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June 2013

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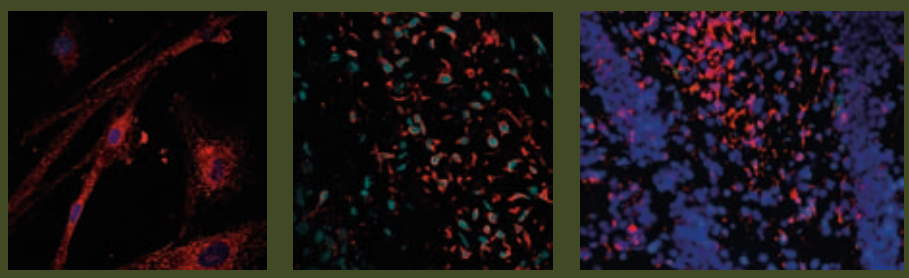
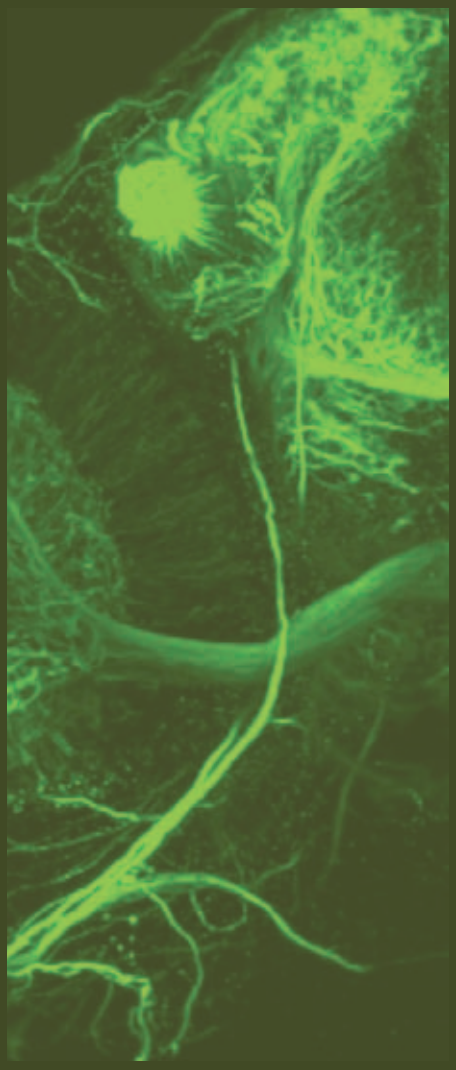
THE PRUSINER-ABRAMSKY RESEARCH AWARDS



AT THE HEBREW UNIVERSITY OF JERUSALEM



June 2013

האוניברסיטה העברית בירושלים
The Hebrew University of Jerusalem

The Authority for
RESEARCH AND DEVELOPMENT

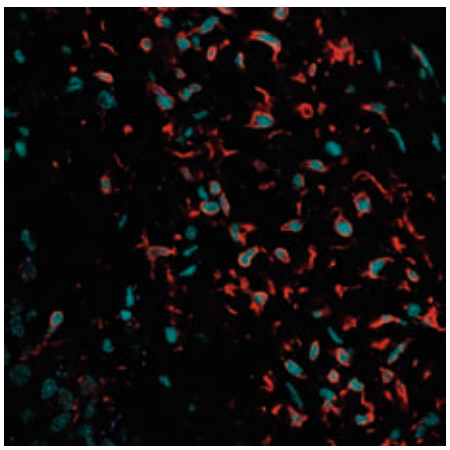
PRUSINER ABRAMSKY
Research Awards - 2013

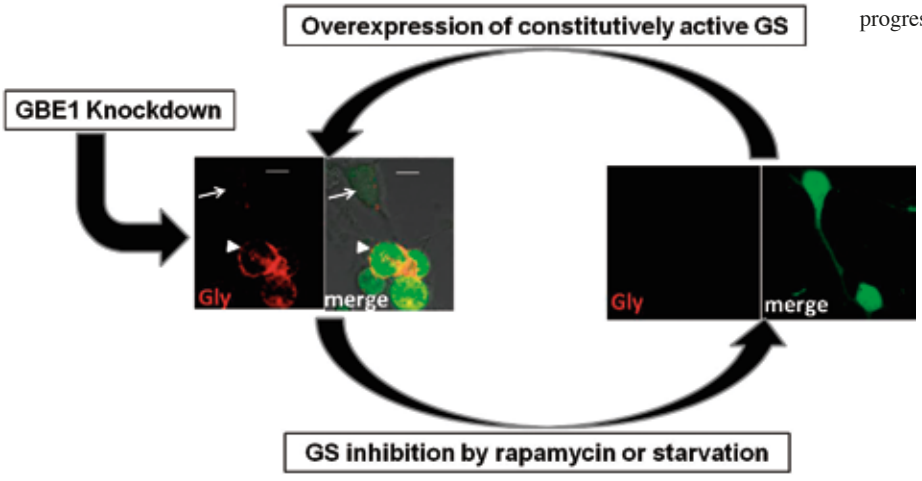
Prof. Stanley B. Prusiner, M.D.

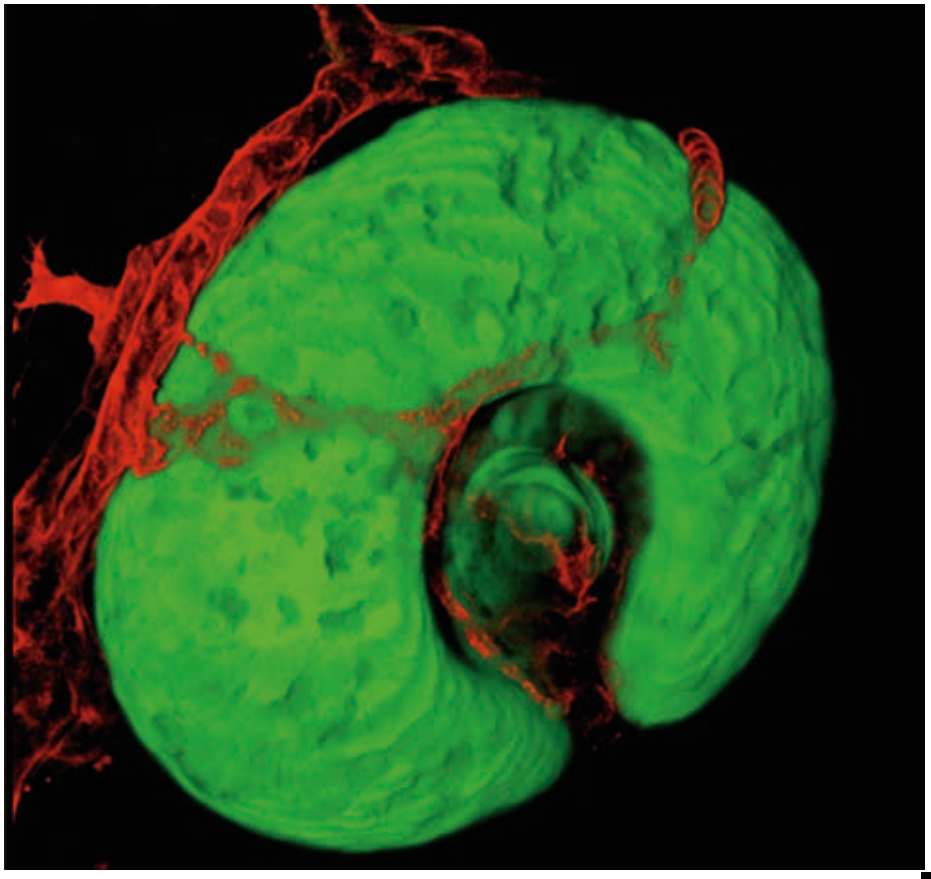
Stanley B. Prusiner, M.D., is Director of the Institute for Neurodegenerative Diseases and Professor of Neurology at the University of California, San Francisco, where he has worked since 1972. Born in Des Moines, Iowa, in 1942, he spent his childhood there and in Cincinnati, Ohio. He received his undergraduate degree and medical training at the University of Pennsylvania and his postgraduate clinical training at UCSF. From 1969-72, he served in the US Public Health Service at the National Institutes of Health. He is the editor of 12 books and author of over 350 research articles. He is a member of the US National Academy of Sciences, the Institute of Medicine, the American Academy of Arts and Sciences, the American Philosophical Society, and a foreign member of the Royal Society of London. He is the recipient of numerous prizes, including the Potamkin Prize for Alzheimer's Disease Research of the American Academy of Neurology (1991); the Richard Lounsberry Award for Extraordinary Scientific Research in Biology and Medicine from the National Academy of Sciences (1993); the Gairdner Foundation International Award (1993); the Albert Lasker Award for Basic Medical Research (1994); the Paul Ehrlich Prize from the Federal Republic of Germany (1995); the Wolf Prize in Medicine from the State of Israel (1996); the Keio International Award for Medical Science (1996); the Louisa Gross Horwitz Prize from Columbia University (1997); and the Nobel Prize in Physiology or Medicine (1997).

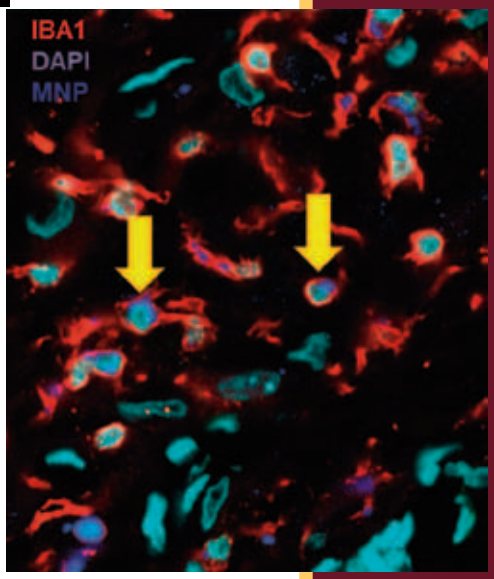
Prof. Prusiner's groundbreaking research on prion diseases, beginning in the late 1970s, led him to propose an explanation for the cause of bovine spongiform encephalopathy ("mad cow disease") and its human equivalent, Creutzfeldt-Jakob disease, for which he was awarded the Nobel Prize. In this work, he coined the term prion, which comes from the words "proteinaceous" and "infectious," to refer to a previously undescribed form of infection due to protein misfolding.

His research has elucidated a fundamental understanding of the proteins underlying such illnesses as Alzheimer's disease, Parkinson's disease, amyotrophic lateral sclerosis (ALS) and prion diseases. These advances in understanding the molecular, genetic and cellular basis of neurodegenerative diseases have fueled progress toward the development of targeted drug therapies.





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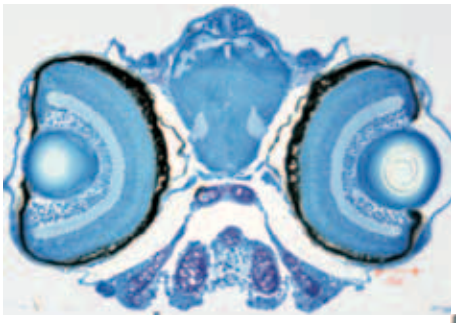

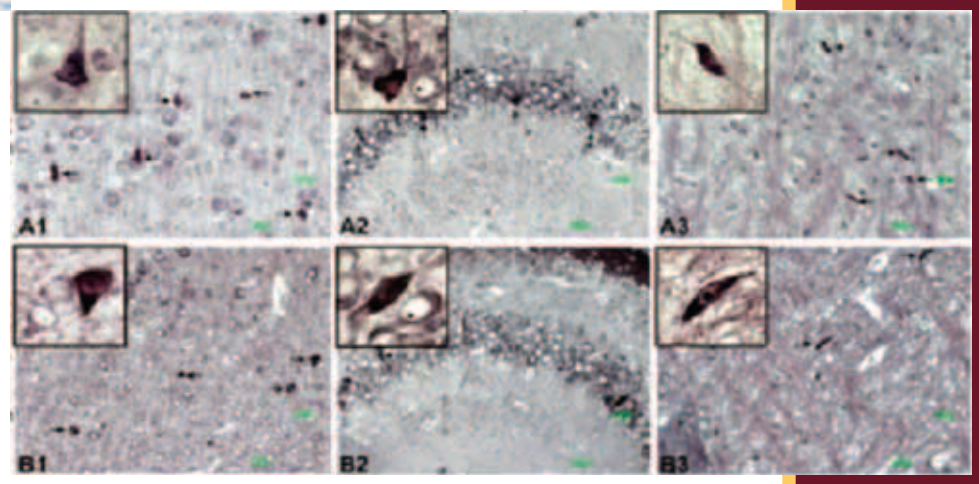
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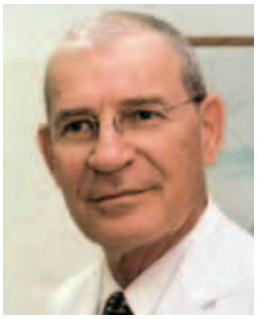
PRUSINER

ABRAMSKY
Research Awards - 2013

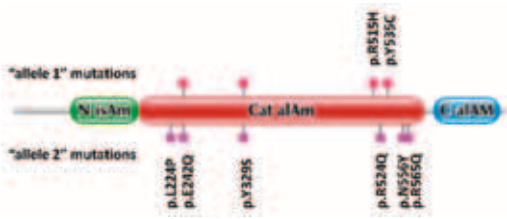


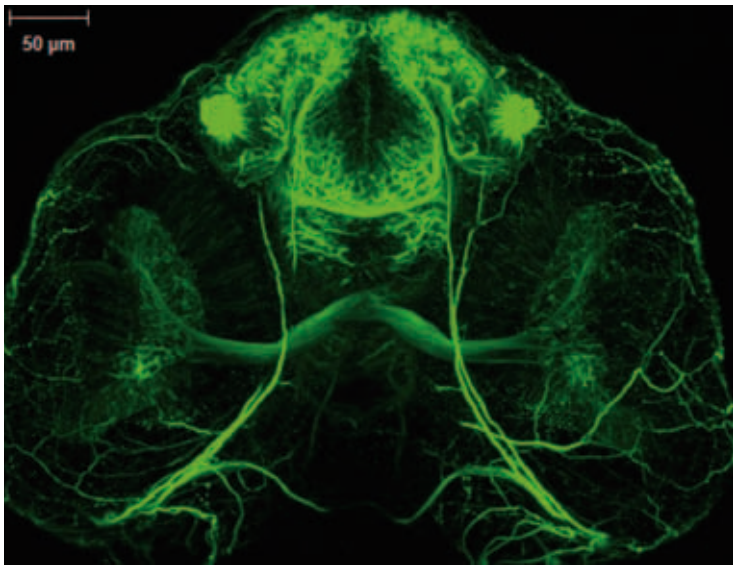
Prof. Oded Abramsky, M.D., Ph.D.

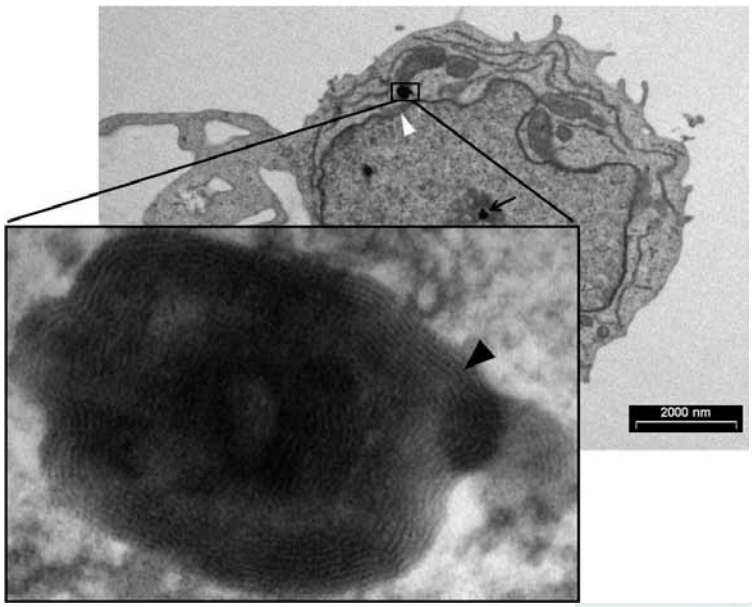
Oded Abramsky was born in Jerusalem and received his M.D. and Ph.D. degrees from The Hebrew University of Jerusalem. He completed his residency in neurology at Hadassah University Hospital, where he was later appointed Head of the Neuroimmunology Unit (1982) and Chairman of the Neurology Department (1988-2005). He was appointed Professor of Neurology at the Hebrew University-Hadassah Medical School in 1982, holding the Israel S. Wechsler Chair in Neurology. He served as Dean of the Faculty of Medicine of the Hebrew University (1992-96) and subsequently was appointed Chairman of the Agnes Ginges Center for Human Neurogenetics at Hadassah University Medical Center.

Prof. Abramsky has been actively involved in many aspects of medical research and holds prominent positions in numerous professional organizations concerned with both clinical practice and medical research. He was Chief Scientist of the Israel Ministry of Health (1987-1992) and Chairman of the National Medical Research Organization. He is an Honorary President of the Israel Society of Neuroimmunology; Honorary Member of the American Neurological Association; Member of the Institute of Medicine, National Academy of Sciences (USA); Fellow by Distinction of the Royal College of Physicians (FRC P); and Member of the Israel Academy of Sciences and Humanities, among many other affiliations. He currently serves as Chairman of the Israel National Council for Research and Development. In 2008, the Oded Abramsky Chair in Neuroimmunology was established in his honor by Biogen USA at the Hadassah University Medical Center.

Prof. Abramsky's clinical and scientific research focuses on autoimmune neurological diseases. He was a pioneer in the field of neuroimmunology and demonstrated immune pathogenesis in various neurological diseases of the central and peripheral nervous systems and muscle. Indeed, he proved that myasthenia gravis (MG) is an autoimmune disease, and showed the beneficial effect of corticosteroids and chemotherapy on induced experimental MG. His research served as a guideline to successful immunotherapy of MG and many other autoimmune diseases.



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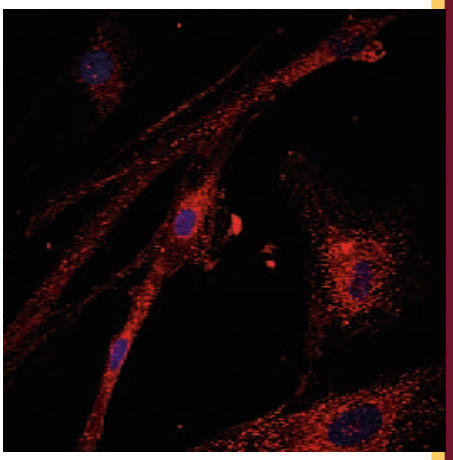
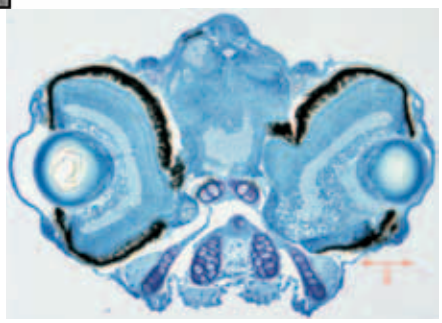
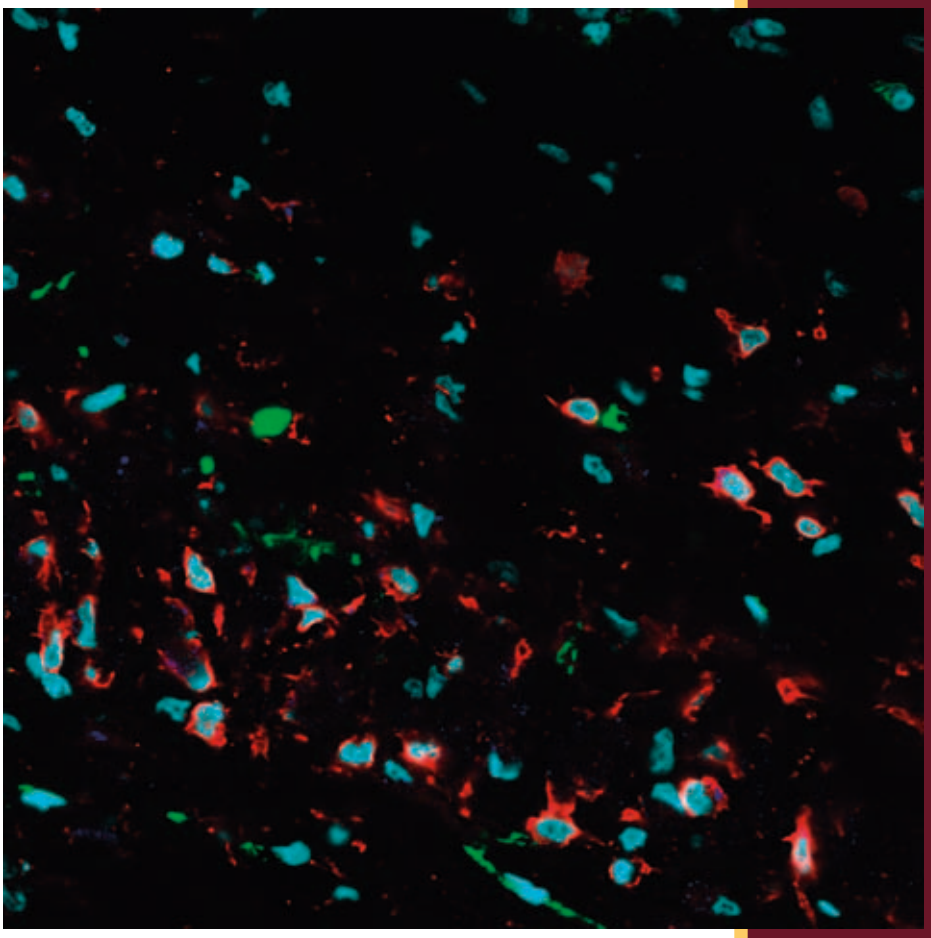




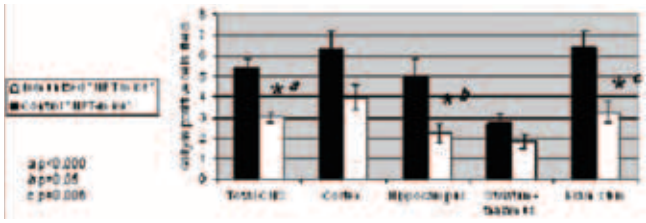


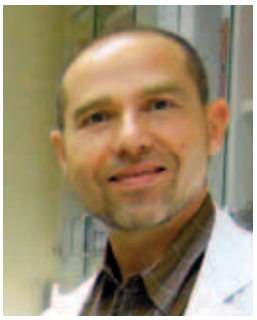
PRUSINER ABRAMSKY
Research Awards - 2013

The prestigious **Prusiner-Abramsky Research Awards in Clinical and Basic Neuroscience** honor Professors Stanley Prusiner and Oded Abramsky. Prof. Prusiner of the University of California at San Francisco is a Nobel Prize Laureate in Medicine (1997) and an Honorary Doctor of the Hebrew University of Jerusalem.

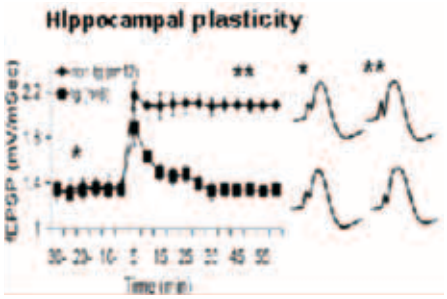
Prof. Abramsky is the former Chairman of the Neurology Department and a former Dean of the Faculty of Medicine at Hebrew University.

The awards are intended for outstanding researchers from all fields of basic clinical neurosciences at the Hebrew University and the Hadassah University Medical Center.

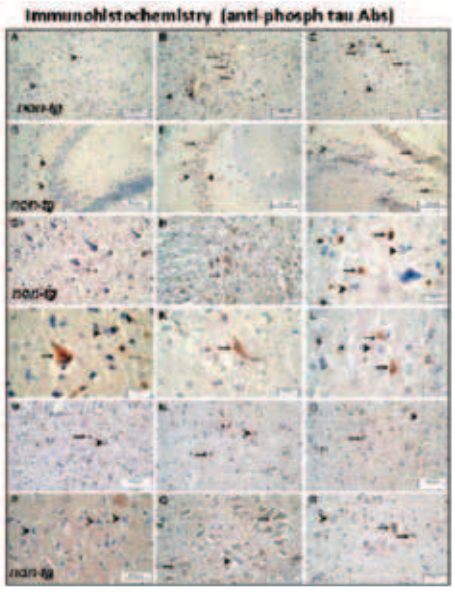




Prof. **ALEXANDER LOSSOS**
Department of Neurology
Hebrew University-Hadassah Medical School
Diagnosis and treatment of adult polyglucosan body disease

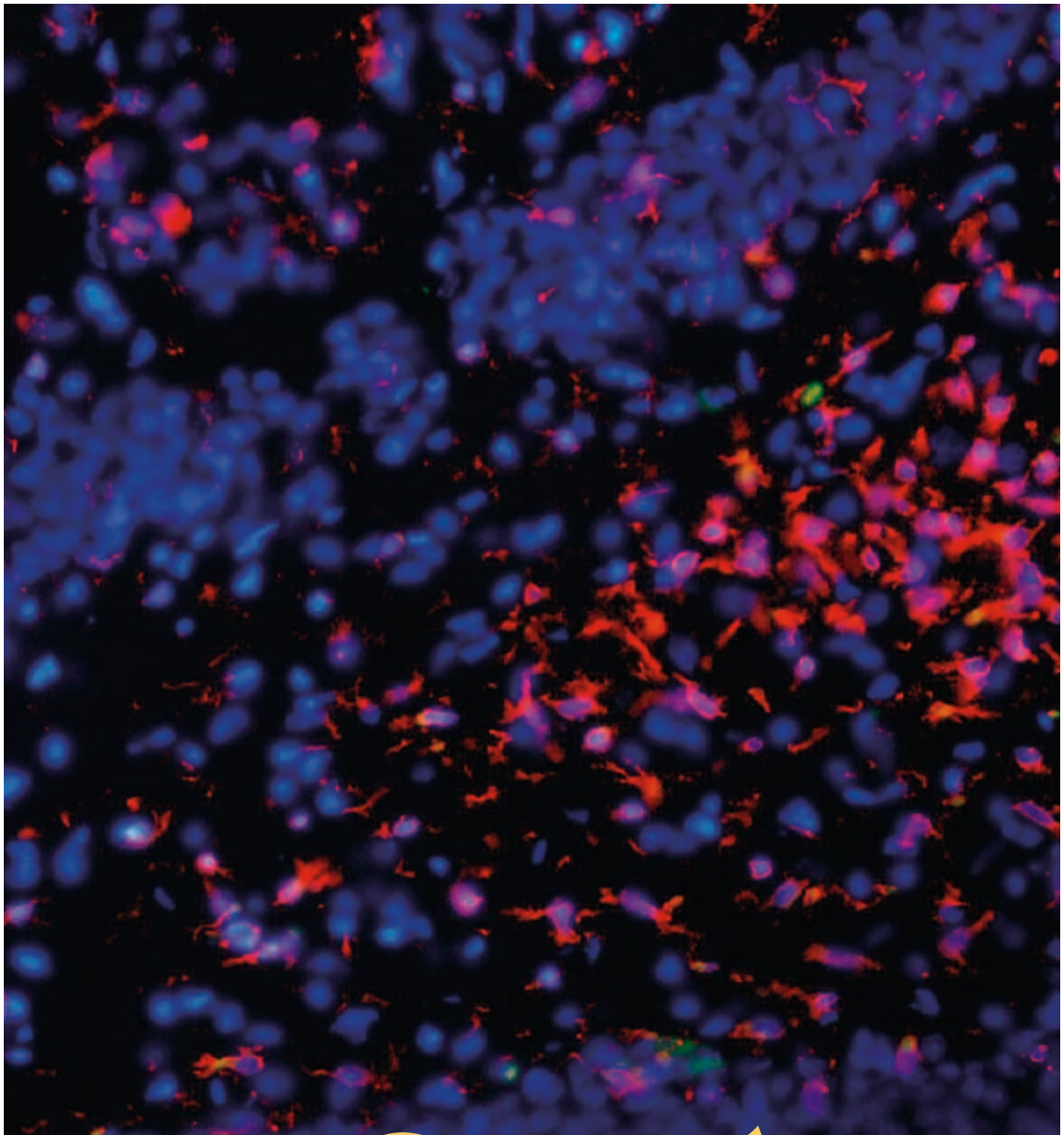


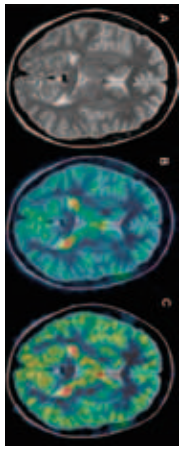
Dr. **HANNA ROSENMANN**
Department of Neurology
Hebrew University-Hadassah Medical School
Alzheimer's disease and tauopathies - improved animal models, pathogenesis and therapeutic approaches

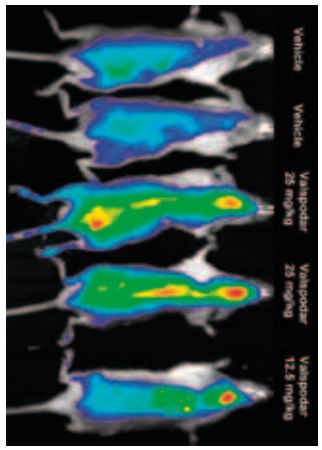


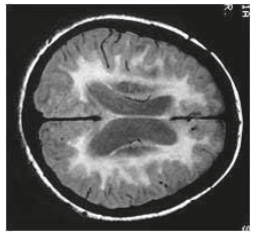
Dr. **SARA EYAL**
Institute for Drug Research, School of Pharmacy, Faculty of Medicine
The Hebrew University of Jerusalem
Imaging CNS function in health and disease

Dr. **ADI INBAL**
Department of Medical Neurobiology
Institute for Medical Research – Israel-Canada
Hebrew University-Hadassah Medical School
Molecular mechanisms of forebrain and eye development





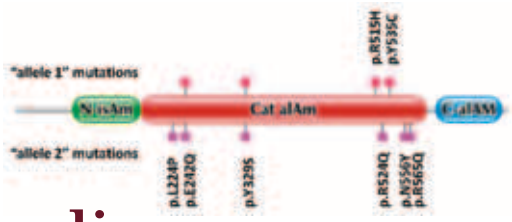




RESEARCHERS

Inventor: ***Prof. Alexander Lossos***
Department of Neurology
Hadassah-Hebrew University Medical Center

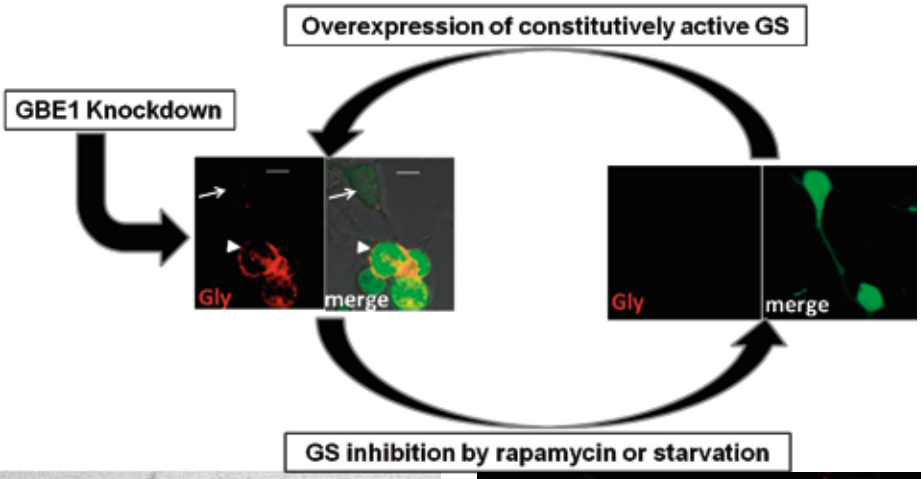
RESEARCHER

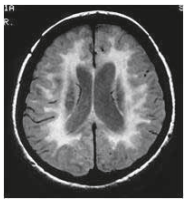


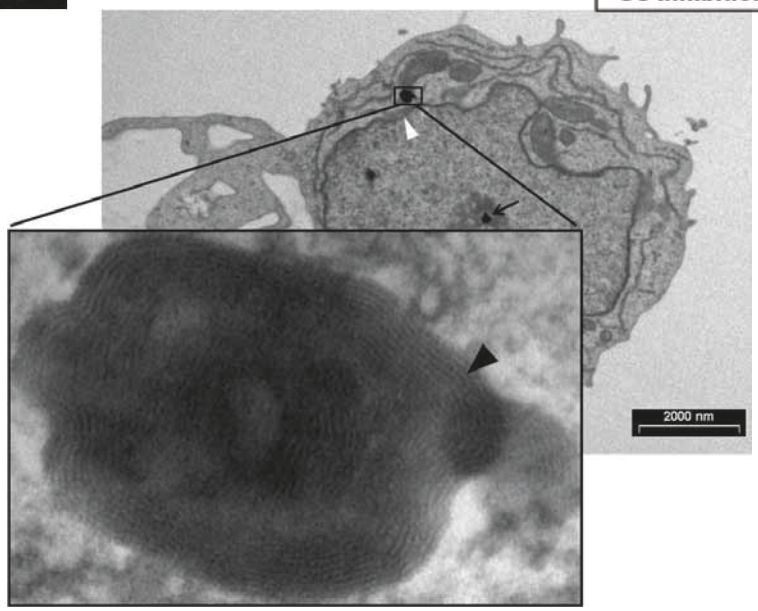
Diagnosis and treatment of adult polyglucosan body disease

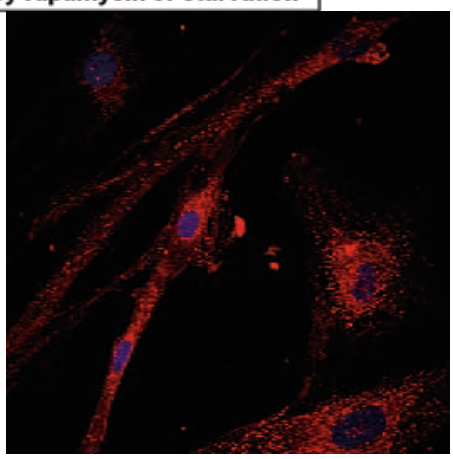
After Prof. Lossos first identified the biochemical and genetic basis of a devastating neuromuscular disorder called Adult Polyglucosan Body Disease (APBD), it remains the main topic of his research. Gait difficulties, unsteadiness and weakness of the legs represent the typical early manifestations of APBD that begin around the age of 50 and slowly progress to severe paralysis. Although more common in people of Jewish Ashkenazi origin, the disease occurs worldwide. Therefore, to delineate the natural history of APBD, he has coordinated a multinational clinically and genetically-oriented study establishing currently-accepted diagnostic criteria. Parallel efforts in his laboratory aimed at finding a treatment have been successful in generating a neuronal cellular model which reproduces the typical biochemical abnormalities of this disease. This model is currently used for the high-throughput screening of tens of thousands of drug candidates; computational peptide design to stabilize the underlying enzymatic defect; and an antisense-mediated approach to knock down glycogen synthesizing enzymes.

Another of his research interests focuses on the clinical and genetic evaluation of the endemic-to-Israel forms of Hereditary Spastic Paraplegia (HSP). This is a large group of disorders characterized by progressive paralysis of the legs variably associated with additional manifestations. Through the establishment of the Israeli HSP Database, Prof. Lossos and his colleagues classified and mapped the distribution of local HSPs and subsequently identified the characteristic genes. This work forms the basis for currently accepted diagnostic strategy.







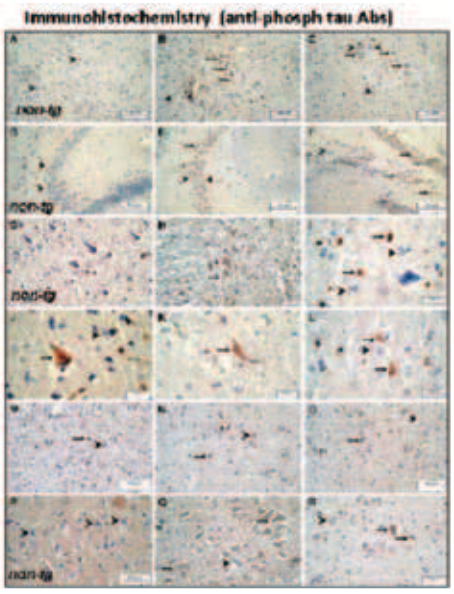


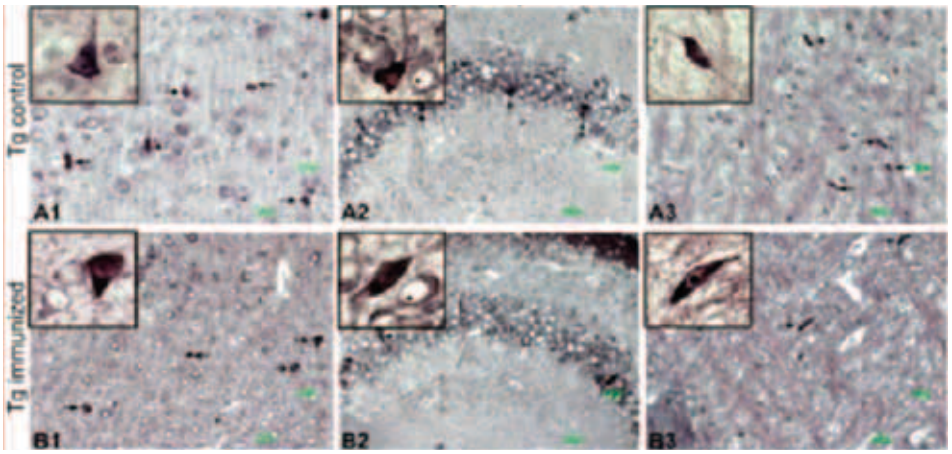
Inventor: ***Dr. Hanna Rosenmann***
Department of Neurology
Hadassah-Hebrew University Medical Center

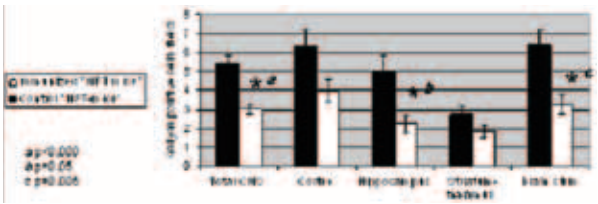
RESEARCHER

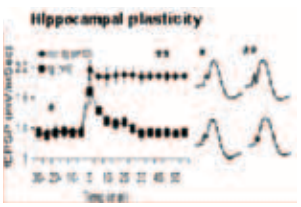
Alzheimer's disease and tauopathies - improved animal models, pathogenesis and therapeutic approaches

Research in Dr. Rosenmann's lab focuses on the tau neurofibrillary-tangle pathology characteristic to Alzheimer's disease (AD) and tauopathies, studying the direct role of pathogenic tau protein in cognitive deficits and neurodegeneration, the complex relationship with the amyloid pathology, and developing therapeutic approaches. For this purpose, a novel tg mouse model was generated, expressing mutant-tau driven by the original homologous tau promoter, which provides an authentic animal model with a wide spectrum of tauopathy and AD features. The high responsiveness to environmental risk factors (inflammation, oxidative stress, low hormones) with acceleration of disease symptoms, detected in her lab, is utilized for turning the pure genetic tangle-model into sporadic-like forms of the diseases. Using the animal models as well as neuronal cell culture models, Dr. Rosenmann is developing therapeutic approaches: 1. Phos-tau-immunotherapy, emphasizing both efficacy and safety aspects; 2. Identifying neuroprotective properties among existing drugs (and newly designed derivatives), and among herbal extracts; 3. Developing novel bi-functional secretase inhibitors; 4. Novel CSF exchange therapy (elimination of pathogenic endogenous CSF and its replacement with biologically enriched artificial CSF), an approach that may be suitable for a wide range of neurodegenerative diseases.









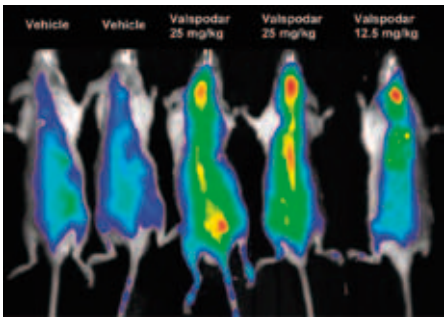
Inventor: ***Dr. Sara Eyal***
Institute for Drug Research, School of Pharmacy
Faculty of Medicine
The Hebrew University of Jerusalem

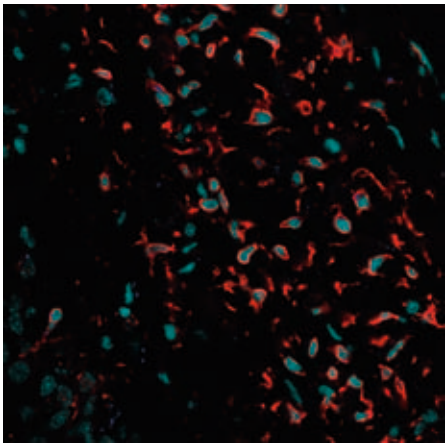
RESEARCHER

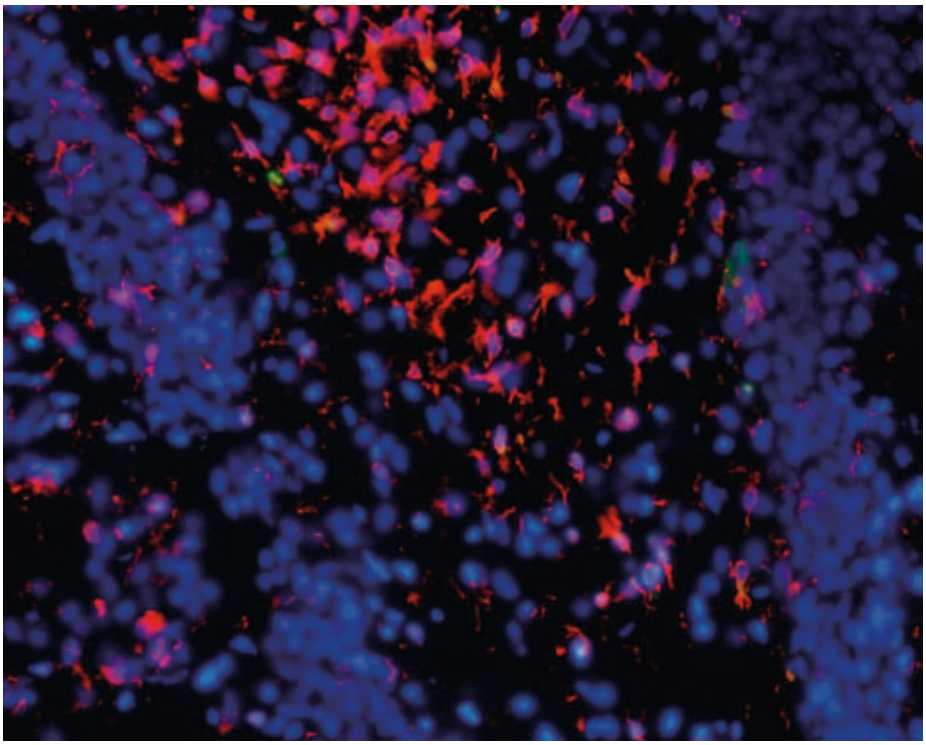
Imaging CNS function in health and disease

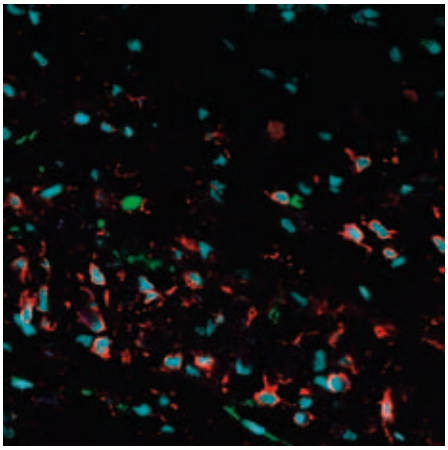
In vivo functional brain imaging is being increasingly used to obtain information on the occurrence and location of molecular events in health and disease. In particular, reliable markers for imaging of brain diseases are important in that they provide means to localize an abnormal region which may be removed surgically, e.g., in patients with epilepsy or glioma, and assist in monitoring response to therapy.

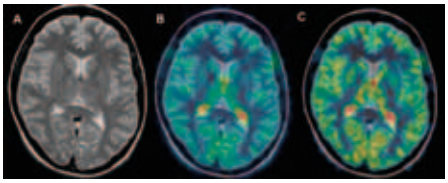
Dr. Eyal's research is aimed at better understanding of the factors that affect probe (and drug) distribution across the blood-brain barrier (BBB), introducing novel markers for studying molecular changes at the BBB itself, and developing delivery systems which would be able to overcome the anatomical and functional barriers to the CNS. Using new imaging methodologies to investigate the function of the BBB, she demonstrated equal protection of various regions of the human brain against foreign compounds by a major efflux pump. She has also contributed to the understanding of the protection provided by efflux pumps at the blood brain barrier compared to other body barriers, such as the placenta. More recently, her lab, in collaboration with Drexel University, has begun developing methodologies involving the application of nanoparticles for imaging brain inflammation.

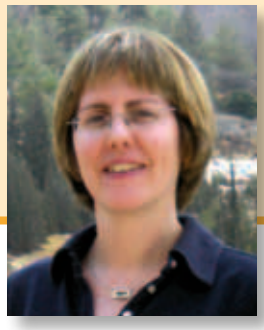








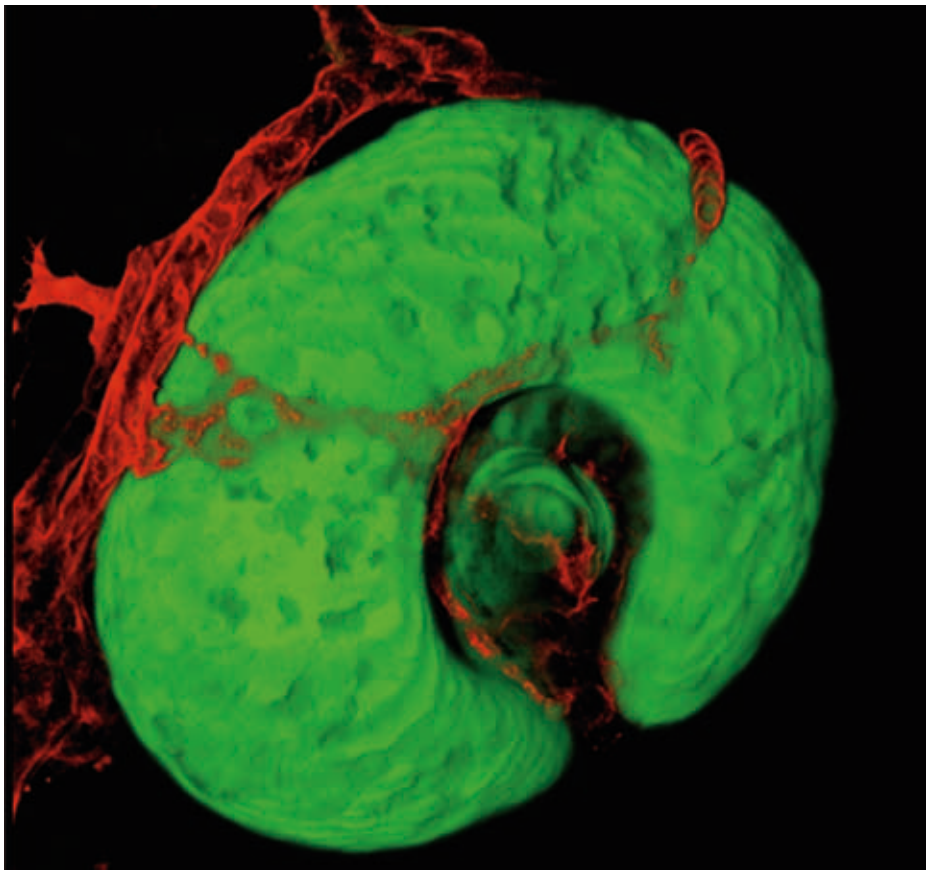




Inventor: ***Dr. Adi Inbal***
Department of Medical Neurobiology, Institute for Medical Research – Israel-Canada
Hebrew University-Hadassah Medical School

RESEARCHER

Molecular mechanisms of forebrain and eye development



Dr. Inbal's research focuses on understanding the molecular genetic basis of forebrain and eye development in the early embryo, using zebrafish as a model organism. Her two main interests are: a) development of the ventral telencephalon, and b) molecular genetic mechanisms of eye development, with a special interest in morphogenesis. Her studies are aimed at identifying genes that influence both normal and abnormal development of the brain and eyes. The knowledge acquired should help us better understand normal human brain development as well as birth defects and neurological conditions that result from abnormal development.