"Nerve Growth Factor and Related Neurotrophic Factors: From Laboratory to Clinic"

May 25-29, 2006
International Congress Center
Lyon, France

www.ngf2006.com

Organisation

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Résumé

Le facteur de croissance neuronal (NGF), premier membre d'une famille de facteurs neurotrophiques, joue un rôle clef dans le développement et la survie de certaines cellules du système nerveux central, sympathique et sensoriel ainsi que du système immunitaire. Il est impliqué dans *la douleur*, joue un rôle dans la *mémoire*, *l'apprentissage* et la *vision* en agissant sur la survie et la *plasticité neuronale*. Il est également facteur favorisant la *prolifération et la survie de certaines cellules tumorales*. Ses récepteurs sont la *voie d'entrée privilégiée de certains virus* telle de la RAGE, mais également des *protéines prions* et *toxine de tétanus*. L'étude de ces facteurs n'intéresse donc pas seulement la neurobiologie et les maladies neuro-dégénératives, mais aussi un très grand nombre de domaines : cancérologie, virologie, immunologie, allergologie, vision ou encore l'ouïe… Organisé les années impaires aux Etats-Unis et les autres hors USA, ce congrès réunit quelques 300 spécialistes pour faire le point et cheminer avec les NGF de la recherche fondamentale aux applications cliniques !

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Summary

Nerve Growth Factor (NGF), the first growth factor to have been discovered, is involved in regulation of proliferation, differentiation and apoptosis in various cell types of the central and peripheral and sensory nervous systems as well as cells of hematopoietic origin. NGF and related neurotrophic factors are involved in pain, vision, memory, and depression, by their effects on the immune system, neuronal survival and plasticity. Additionally, deregulation of neurotrophin signaling has been implicated in several types of cancer including breast, prostate and pancreas. The main goal of the 2006 meeting is to present medically-relevant studies which illustrate the involvement and therapeutic efficacy of NGF and other neurotrophic factors in "disease". The focus is on those where deregulation of the factor or receptor expression, fate, or signaling pathways, contribute to, or are indicative or causative of the pathophysiological state. Key examples of the underlying mechanisms and fruit of basic research will be presented as well. These high quality meetings have been going on since 1986, the year Rita Levi-Montalcini received the Nobel Prize for the discovery of Nerve growth factor. Held in great destinations outside of the US, in alternate years to the neurotrophin Gordon conferences, it offers an international forum for rich and stimulating exchange.

International Scientific Committee

Luigi ALOE, ***Rome***, Italie
Pioneer in the use of NGF for treatment of skin and eye afflictions

Ralph A. BRADSHAW, Irvine ***California***, USA
First to sequence NGF, previous president of FASEB, author of more than 300 publications, Editor of Molecular & Cellular Proteomics, Co-author, with BB Rudkin of a white paper on the Rhone-Alps Region's options for development in the BioSector in view of becoming one of the top 5 european bioclusters.

Moses V. CHAO, ***NY,*** USA
Discovered the first receptor for NGF – p75NTR, that has since proven to be at the heart of numerous actions of this factor, but also having actions independent thereof in inflamatory disease, multiple sclerosis and neuronal regeneration.

Lloyd A. GREEN, ***NY***, USA
Established a model cell sytem that triggered an explosion of studies on the mecanism of action of NGF and other neurotrophic factors – the PC12 cells

Tatsuro MUTOH, ***Nagoya***, Japan
Pioneer in the role of complex lipids with NGF receptors in neurological and neurodegenerative disease.

Robert RUSH, ***Adelaide***, Australie
Pioneer in the discovery of production of NGF by Schwann cells as well as abnormal production of NGF in rheumatoid arthritis.

Maart SAARMA, ***Helsinki***, Finlande
Pioneer in the study of GDNF, another neurtrophic factor involved in various human diseases.

With local participants

Claude FEUERSTEIN, ***Grenoble***, France
Coordinateur Cluster Handicap, Aging, Neurosciences, Director of the Institut for Neurosciences

Geneviève CHOQUET-KASTYLEVSKY *Marcy l'Etoile*, France
Head of the Cancer program at BioMérieux.

Last but not least, the co-organisers !

Hubert HONDERMARCK, ***Lille***, France
Pioneer of the autocrine role of NGF via its receptors in breast cancer.

Brian B. RUDKIN, ***Lyon***, France
Pioneer of the cell cycle phase-specific action of NGF, the anti-mitogenic response and real-time visualization of TrkA receptor trafficking.

Themes for sessions
Behaviour **Cancer** **Embryogenesis/Development** **Neurodegenerative disease** **Senses (Vision, hearing, smell, pain, ...)** **Signalling** **Structure / Function** **Tissue Repair** **Virology, Immunity & Allergy**
List of Speakers/Chairs to date (**to be confirmed*)
Luigi Aloe, Rome Phil Barker, Montreal Ralph A. Bradshaw, Irvine, California Moses V. Chao, New York Patrick Doherty, London Margaret Fahnestock, Hamilton, Canada Mike Fainzilber, Rehovot Lloyd Greene, New York Mike Greenberg, Boston* Simon Halegoua, StonyBrook Franz Hefti, San Francisco Barbara L. Hempstead, New York Hubert Hondermarck, Lille Carlos Ibanez, Stockholm Allessandro Lambiase, Rome Rita Levi-Montalcini, Rome* Patrick W. Mantyh, Minneapolis* Efthimios Mitsiadis, London Tatsuro Mutoh, Nagoya Robert Rush, Adelaide Uri Saragovi, Montreal Eric Shooter, Stanford, California Lino Tessarollo, Frederick Mark Tuszynski, La Jolla*

Among the invited speakers:

Prof. Phil Barker, PhD
Dr. Phil Barker is a molecular biologist and biochemist at the Montreal Neurological Institute and an Associate Professor in the Departments of Neurology & Neurosurgery and Anatomy and Cell Biology at McGill University. Dr. Barker obtained his Ph.D. in 1991 from the University of Alberta and performed postdoctoral studies with Dr. Eric Shooter at Stanford University before joining the Montreal Neurological Institute in 1994. Dr. Barker's research focuses on intracellular signaling pathways regulating nerve cell death, survival and regeneration.

Prof. Moses V. Chao, PhD
Moses V. Chao received his BA degree at Pomona College and his PhD in biochemistry at UCLA. He carried out postdoctoral research in molecular biology at Columbia University with Richard Axel before joining the faculty at Cornell University Medical School in 1984. In 1998, he moved to NYU School of Medicine, where he is currently Professor of Cell Biology and Physiology & Neuroscience and Coordinator of the Molecular Neurobiology Program at the Skirball Institute. His laboratory has been studying the mechanism of action of neurotrophin receptors.

Prof. Patrick Doherty
Pat Doherty works on the signalling pathways that control axonal growth and guidance. Recent achievements include the identification of cross talk between receptor tyrosine kinases and the endocannabinoid system, and cloning of the sn-1 specific diacyglycerol lipases, the enzymes that are responsible for the synthesis of the major endocannabinoid in the brain. Doherty is also working on the design of small molecule agonists for the TrkB receptor and utilising these to overcome the inhibitory activity of myelin. Doherty is currently the Director of the Wolfson Centre for Age-Related Diseases at Kings College London.

Prof. Margaret Fahnestock, PhD
Dr. Margaret Fahnestock is a Professor of Molecular Neurobiology in the Department of Psychiatry and Behavioural Neurosciences at McMaster University. Dr. Fahnestock obtained her Ph.D. in Biochemistry from the University of California, Berkeley in 1979 and did postdoctoral work with Dr. Eric Shooter at Stanford University before moving to Stanford Research Institute. In 1991 she joined McMaster University, where she works on the regulation of neurotrophin expression in human brain, with a particular focus on the role of neurotrophins in neurological diseases including Alzheimer's disease and epilepsy.

Dr. Franz F. Hefti
Dr. Franz F. Hefti is responsible for drug development at Rinat Neuroscience Corporation. Before this activity, he directed neuroscience drug discovery efforts at Merck & Co. and Genentech. Prior to the industry activities, he was a professor at the University of Southern California and conducted research on therapeutic applications of neurotrophic factors. He published over 200 papers on neurotrophic factors and topics in neuropharmacology, as well as a recent textbook “Drug Discovery for Nervous System Diseases”.

Dr. Barbara L. Hempstead
Dr. Hempstead is Professor of Medicine, and co-Chief, Division of Hematology and Medical Oncology at Weill Medical College of Cornell University. Her laboratory has longstanding interests in the signaling pathways downstream of Trk receptor tyrosine kinases, of the biological actions of the proneurotrophins via interaction with sortilin and p75 receptors, and in the roles of neurotrophins in sculpting the vascular bed during development and following vascular injury.

Dr. Efthimios Mitsiadis DDM, PhD, HDR
Tim Mitsiadis works on the signalling pathways that are involved on facial and tooth development and regeneration. After receiving his DDS from the University of Athens, Greece, Dr. Mitsiadis obtained his Ph.D. in 1992 from the University of Lyon I, France, and performed postdoctoral studies with Prof. Irma Thesleff at Helsinki University, Prof. Urban Lendahl at Karolinska Institute, and Prof. Spyros Artavanis-Tsakonas at Yale University before joining the Dental Faculty of Marseille in 1996 as Professor. Since 2003, Dr Mitsiadis is a Clinical Senior Lecturer in the Department of Craniofacial Development at Kings College London Dental Institute. He published over 50 papers on tooth-related articles in developmental biology journals

Prof. Tasuro Mutoh MD, PhD
Tatsuro Mutoh graduated from Nagoya University School of Medicine in 1980 and entered postgraduate school of Medicine, Nagoya Univ. He completed his PhD thesis in 1986 from Nagoya Univ., and joined to the Department of Internal Medicine, Fukui Medical School as an assistant Professor on April, 1986. He studied gangliosides and NGF signaling molecules in neurological disorders and neuro-degenerative disease bridging the gap between clinical and basic research. As visiting fellow at the National Institute of Child Health and Human Development, NIH from Dec 1987 to Jan 1991 he pursued research on the fundamental aspects of NGF signaling, then returned to Fukui Medical School. In 2005 he became full professor and Chairman of the Department of Neurology, Fujita Health University School of Medicine in Nagoya.

Prof. Robert Rush
Robert (Bob) Rush has published extensively in the neurotrophic field since 1978, identifying NGF production by Schwann cells, abnormal production of NGF in rheumatoid arthritis and hypertension and anterograde transport and release of BDNF in primary sensory neurons amongst other discoveries. He has been a contributer to every NGF conference, including the first in 1986 in Monterey. Recognizing scientific advance depends on technological innovation, Bob has introduced numerous qualitative and quantitative techniques for the analysis of neurotrophin function, particularly those requiring antibodies. His presentation will underline this further by demonstrating the use of antibodies to deliver genes into neuronal subpopulations to achieve useful functional outcomes.

Summary of Conference focus and aims

Nerve Growth Factor (NGF) is the first growth factor to have been discovered. It is involved in regulation of *proliferation, differentiation and apoptosis* in various cell types of the central and peripheral nervous system as well as cells of hematopoietic origin. In addition to *development*, it and related neurotrophins, play key roles in regulating *neuronal plasticity* thereby affecting *memory*, *vision*, learning and *pain* and in the immune system by affecting the *immune response*. Additionally, deregulation of NGF signaling has been implicated in several types of *cancer* including breast, prostate and pancreas.

The NGF 2006 conference aims to provide a forum for the *exchange of new information* about neurotrophic factors and to facilitate the *dissemination of new tools* and *approaches* for studying these important proteins in the clinic and in related fundamental research. Further, we aim to stimulate increased interest of industry (from biotech to big Pharma) and clinicians in the diagnostic and therapeutic potential of neurotrophic factors and their signaling pathways. Since 1986, it has been organized in alternating years with the Gordon Conference on Neurotrophins and outside of the United States, to favor participation of more international students, post-docs and scientists. *This is the first time it will be in France*.

The goal of the NGF 2006 Conference is to establish a relatively small meeting, in which new research findings are presented in a stimulating and open atmosphere. Unlike the Neuroscience and Neurochemistry meetings, which number in the thousands of participants, there are clear advantages of a smaller meeting format. There is a greater degree of freedom on the part of the speakers to discuss last minute results, and new approaches and methodologies. It favors closer interactions among participants while encouraging speakers to present on-going work that is not yet published, and allows for greater openness and discussion. This atmosphere facilitates the establishment of new collaborations and the initiation of new directions in research.

This conference will cover several health related subjects of interest in addition to select key fundamental observations regarding the role of neurotrophins in development: immune response, cancer, neurodegenerative disease, pain, … We are expecting presentations of the role of neurotrophins in the immune response in the context of infectious disease and inflammation. Promising results of clinical and pre-clinical trials will be presented for treatment of pain due to osteoarthritis and bone cancer, for example. We are also aiming at having presentations of the results of clinical trials implementing gene and cell therapy for the treatment of early inset Alzheimers while other studies will discuss the identification of promising markers and therapeutic targets. The use of NGF for the treatment of glaucoma and other ophthalmic afflictions of the elderly and people suffering from diabetes.

The dissection of fundamental mechanisms of their action should open new horizons for understanding the imune response in teh context of certain infectious diseases such as HIV, th treatment and diagnosis of certain cancers such as breast, pancreas, prostate neuroblastoma and medulloblastomas and certain neurodegenerative diseases such as Alzheimer, Parkinson and psychiatric afflictions such as depression.

Above all, we are underlining the importance of transfer of knowledge from laboratories towards applications that will benefit society in close collaboration between basic scientists, clinicians, innovative companies and big pharma. Research to Society – "R2S".

Our Italian collaborators have indicated that *Prof. Rita Levi-Montalcini*, who received the Nobel Prize for her discovery and characterization of NGF, may come to the conference.

Practical information

We are aiming at 35 – 40 speakers from France, Europe, Asia, Australia and the USA, selected with the help of an International Scientific Committee of renown in the field. Additional speakers will be selected from the abstracts submitted for poster presentation to allow a "Hot Topics" session. In all we are expecting 250 – 300 participants from around the world of which approximately 50 Students and Post-Docs, at the International congress center in Lyon from May 25-29, 2006.
Logistic considerations will be handled by "Package" a seasoned events managing firm that has handled events such as "BioVision" - the International Life Sciences Forum – in Lyon. The budget is estimated to be approximately 270k Euros of which a bit less that half is expected from registration fees. The amount of funding sought is 150k Euros.

A website www.NGF2006.com, constantly being updated, offers pertinent information on the organization of the conference, from the scientific program to activities for accompanying people and lodging and travel options. Sponsors names and Logos will be posted therein and in the conference program.

Holding this event in Lyon is expected to offer the opportunity for the visitors to learn a bit about our city and our region and their strong commitment to the development of the life sciences – from academia to the clinic.

Communication

The conference is being heralded on several sites around the world in France, Europe, Australia, Japan, and the US. Directed mailings to targeted communities is being pursed as is word of mouth *via* the international scientific committee.

While several of the topics presented in this conference will be newsworthy and of interest to the general public, we feel that only two, maximum three will be actually developed.

Organisation

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