BRAIN RESEARCH

EU Funding

(2002-2008)

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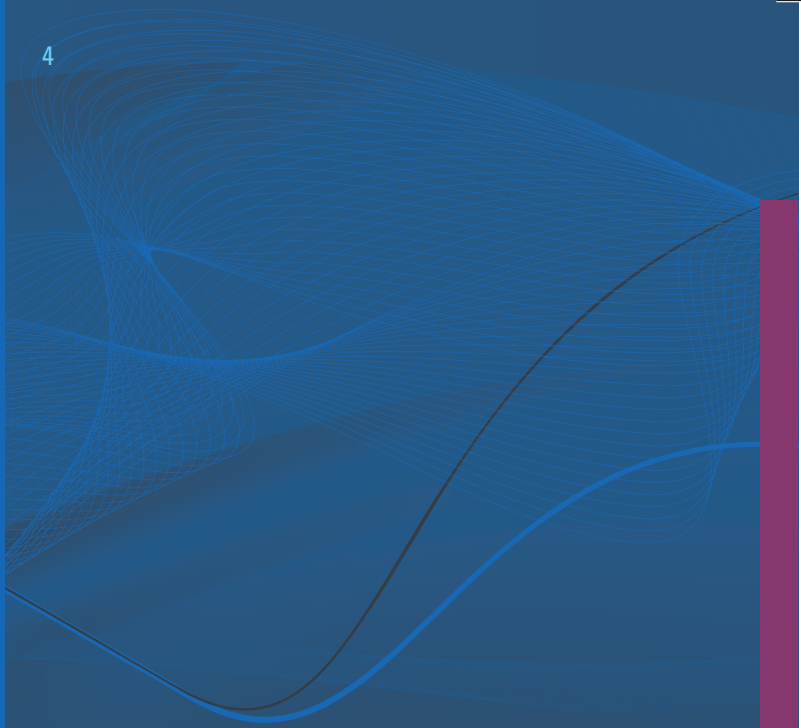

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COORDINATION AND SUPPORT ACTIONS

UNRAVELING THE BRAIN

Brain diseases are all disease affecting the brain, spinal cord and peripheral nerves. Brain diseases are responsible for more than 35% of Europe total disease burden.

Research is needed if Europe is to move forward and meet the challenge of brain diseases. Brain research (both basic and clinical research pertaining to the central and peripheral nervous system and their diseases) will pave the way to therapies for neurodegeneration, better diagnostic tools, neural prosthesis for the paralysed, and individualised treatments for depression and anxiety.

The European Union (EU) recognises the importance of fostering brain research at the European level. The main instrument of the EU for research funding is the Framework Programme for Research and Technological Development. Brain research has received continuous support through several Framework Programmes.

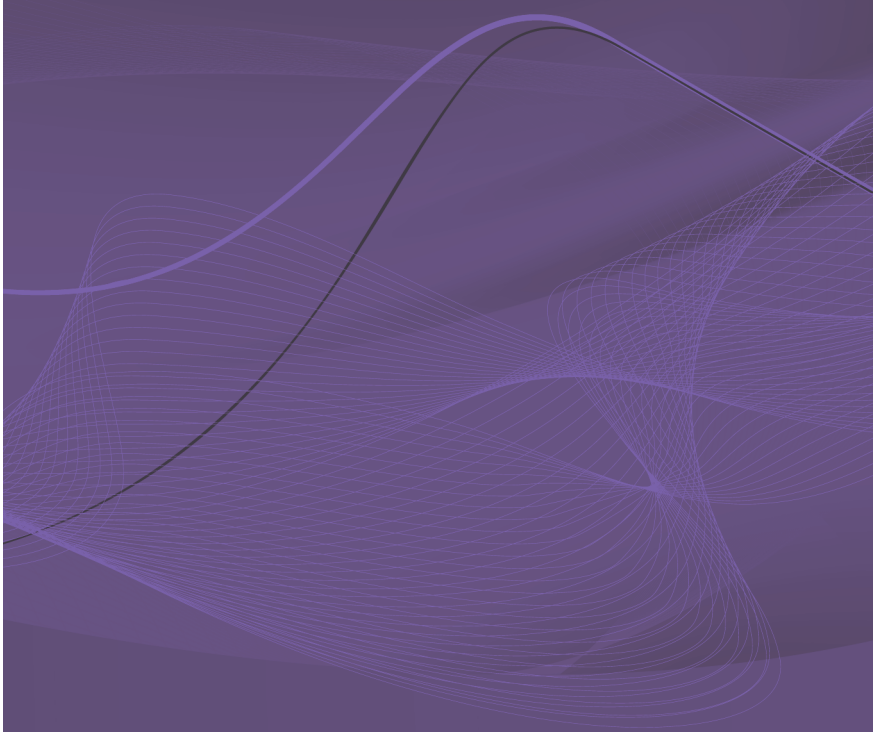
In the 6th Framework Programme (FP6, 2002-2006), research on the brain and related diseases was supported through the Priority I – Life Sciences, in the sub-priority area "Studying the brain and combating diseases of the nervous system". About €157 million have been invested in this sub-priority during FP6. Brain research projects for an additional €99 million were funded across other sub-priority areas. Two "Network of Excellence", 15 "Integrated Projects", 10 "Specific Support Actions" and 44 "Specific Targeted Research Projects" were financed, covering basic to clinical research, including identification of genes and molecules playing a role in brain diseases, physiopathology of diseases, as well as development of new therapies and diagnostic tools.

Very good perspectives exist for continued support for brain research in the 7th Framework programme (FP7, 2007-2013). Indeed, FP7 includes an activity on "Research on the brain and related diseases, human development and ageing", under the theme "Health". This activity has a particular emphasis on translational research, meaning translation of basic discoveries into clinical applications. In the first two FP7 calls, 23 projects were funded under this activity for a total of €91.5 million. Twenty brain-related research projects were funded under other activities of the Theme "Health" for an additional €100 million.

Overall, more than €447 million have been made available to support 25 large-scale and 89 small-scale brain research projects in the period 2002-2008. This booklet gives a short overview of these projects.

Further information:
http://cordis.europa.eu/fp6/whatisfp6.htm
http://cordis.europa.eu/fp7/health
http://ec.europa.eu/research/fp7/index_en.cfm?pg=health

NETWORKS OF EXCELLENCE



BrainNet Europe II

Network of European brain and tissue banks for clinical and basic neuroscience

BrainNet Europe II is a network of 19 brain banks aiming at spreading excellence in collecting human high-quality post-mortem brain tissue and fostering research in the cellular and molecular basis of neurological and psychiatric diseases. Diseases of high frequency and outstanding medical and social importance such as Alzheimer's, Parkinson's, motoneuron disease, prion diseases, multiple sclerosis, schizophrenia and affective disorders are the focus of the network. BNEII will contribute to research in rare diseases, a domain which truly benefits from pooling together European resources and efforts.

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EC CONTRIBUTION	**€7 740 000**
STARTING DATE	**01/07/2004**
DURATION	**60 months**
PROJECT WEBSITE	**http://www.brainnet-europe.org/**

NeuroNE

Molecular mechanisms of neuronal degeneration: from cell biology to the clinic

The NeuroNE consortium is taking a multidisciplinary and multi-faceted (disease mechanisms, biology of cell death and survival, regeneration mechanisms, high-throughput screening, gene- and cell-based therapies) approach to developing novel therapeutic approaches to neurodegenerative disease and neurotrauma. Among the neurodegenerative diseases, the network focuses on Alzheimer's disease, Parkinson's disease, Huntington's disease and amyotrophic lateral sclerosis. Spinal cord injury will be the main model for neurotrauma.

COORDINATOR	**Prof. James Fawcett** **University of Cambridge** **Cambridge Centre for Brain Repair** **Cambridge, United Kingdom**
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EC CONTRIBUTION	**€8 300 000**
STARTING DATE	**01/01/2005**
DURATION	**54 months**
PROJECT WEBSITE	**http://neurone.nuxit.net/**

INTEGRATED PROJECTS (FP6)

LARGE COLLABORATIVE PROJECTS (FP7)

APOPIS

Abnormal proteins in the pathogenesis of neurodegenerative disorders

Degenerative disorders of the nervous system, including Alzheimer's and Parkinson's disease, are among the most debilitating illnesses. There is currently no treatment that can halt or prevent, let alone reverse neuronal degeneration. One hallmark common to these disorders is the deposition of abnormal protein aggregates. APOPIS is designed to elucidate the role of abnormal proteins in the pathogenesis of neurodegenerative disorders and to develop methods for early diagnosis and treatment of these devastating diseases.

COORDINATOR	Prof. Franz Adlkofer VERUM Foundation Munich, Germany
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EC CONTRIBUTION	€8 995 518.39
STARTING DATE	01/01/2004
DURATION	36 months
PROJECT WEBSITE	http://www.verum-foundation.de/apopis/

EUROSCA

European Integrated Project on spinocerebellar ataxias (EUROSCA): Pathogenesis, genetics, animal models and therapy

The EUROSCA network aims at developing a treatment for patients suffering from spinocerebellar ataxias (SCA). The project will develop an international standard on the clinical evaluation in the form of a Core Assessment Programme for Interventional Therapies of SCA (CAPIT-SCA), and will establish the European SCA Registry (EUROSCA-R), the world's largest collection of information on SCA. This will ensure standardised data acquisition and facilitate continuous recruitment of SCA patients throughout Europe.

COORDINATOR	Prof. Olaf Rieß Eberhard Karls-Universitaet Tuebingen Department of Medical Genetics Tuebingen, Germany
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EC CONTRIBUTION	€9 450 000
STARTING DATE	01/01/2004
DURATION	60 months
PROJECT WEBSITE	http://www.eurosca.org/

GENDEP

Genome-based therapeutic drugs for depression

A substantial fraction of patients still show an unsatisfactory response to antidepressants, and cessation of antidepressant medication because of adverse effects is common. GENDEP has three closely interconnected major themes. The first is a large scale multi- centre clinical trial focussed on the prediction of therapeutic response to antidepressants and adverse effects. The second is a set of transcriptomics and proteomics studies on human, rodent, and *in vitro* samples, and the third is a programme of work to address the relevant ethical, social, and legal issues linked to the project.

COORDINATOR	**Prof. Peter McGuffin** **King's College** **Social, Genetic and Developmental Psychiatry Centre (SGDP)** **London, UK**
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EC CONTRIBUTION	**€7 200 000**
STARTING DATE	**01/01/2004**
DURATION	**54 months**
PROJECT WEBSITE	**http://gendep.iop.kcl.ac.uk/**

ETUMOUR

Web accessible MR decision support system for brain tumour diagnosis and prognosis, incorporating *in vivo* and *ex vivo* genomic and metabolic data

ETUMOUR brings together the expertise required to study the genomic and metabolomic characteristics of brain tumours, and includes a multi-centre collaboration necessary to acquire statistically significant data, particularly for rare tumour types. Clinical MRS, high-resolution 1H MRS and gene array analysis of biopsies will be used to investigate how metabolomic and genomic profiles relate to clinically relevant factors such as survival time and treatment response.

COORDINATOR	**Prof. Bernardo Celda** **University of Valencia** **Department of Physical Chemistry, Faculty of Chemistry** **Valencia, Spain**
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EC CONTRIBUTION	**€7 499 982**
STARTING DATE	**01/02/2004**
DURATION	**60 months**
PROJECT WEBSITE	**http://www.etumour.net/**

NEWMOOD

New molecules in mood disorders: a genomic, neurobiological and systems approach in animal models and human disorder

NEWMOOD aims at understanding the molecular mechanisms underlying depression and developing new, effective drug-treatments. The project will measure three fundamental processes underlying depression – the inability to experience pleasure, excessive sensitivity to stress and negative appraisal of circumstances. Studies will be conducted both in humans and animal models to cross-validate findings. Stress-related changes which are consistent across many models will become targets for new treatments.

COORDINATOR	Prof. Bill Deakin University of Manchester Neuroscience and Psychiatry Unit Manchester, United Kingdom
EMAIL	bill.deakin@man.ac.uk
EC CONTRIBUTION	€7 200 000
STARTING DATE	01/05/2004
DURATION	60 months
PROJECT WEBSITE	http://www.medicine.manchester.ac.uk/psychiatry/newmood/

EuroHear

Advances in hearing science: from functional genomics to therapies

EuroHear has two closely inter-related objectives. These are (1) to provide fundamental knowledge about the development and function of the inner ear, and (2) to identify the molecular defects underlying hereditary hearing impairments (HI), including presbycusis, one of the most frequent forms of HI. Achieving these objectives will facilitate the development of therapies for alleviating HI.

COORDINATOR	Prof. Christine Petit Institut Pasteur Inserm U 587 Paris, France
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EC CONTRIBUTION	€12 500 000
STARTING DATE	01/12/2004
DURATION	60 months
PROJECT WEBSITE	http://www.eurohear.org/index.html

GENADDICT

Genomics, mechanisms and treatment of addiction

The contribution of genetic influences to addiction liability has been recently recognised. The identification of genetic risk factors and genes involved in the molecular basis of addiction is a new major challenge for the post-genomic era. The aims of GENADDICT are to use an unbiased genome-wide approach to discover (i) new candidate genes that are involved in addiction in humans and mice; (ii) new genetic mechanisms that are involved in addiction; (iii) new molecular targets for the treatment of addiction.

COORDINATOR	**Prof. Ian Kitchen** **University of Surrey** **School of Biomedical and Molecular Sciences** **Guildford, United Kingdom**
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EC CONTRIBUTION	**€8 100 000**
STARTING DATE	**01/01/2005**
DURATION	**60 months**
PROJECT WEBSITE	**http://www.surrey.ac.uk/genaddict/**

EVI-GENORET

Functional genomics of the retina in health and disease

In EVI-GENORET, 24 academic and industrial partners will establish five platforms (phenotyping, genotyping, development, therapy and functional gene analysis), and share tools and knowledge within and outside the academic community to help fighting the most common causes of blindness, age-related-macular-degeneration and inherited retinal degenerations. The consortium will guarantee result dissemination through patient organisations and transfer to industrial partners.

COORDINATOR	**Dr. Thomas H. Wheeler-Schilling** **European Vision Institute EEIG** **Brussels, Belgium**
EMAIL	**thomas.wheeler-schilling@uni-tuebingen.de**
EC CONTRIBUTION	**€10 000 000**
STARTING DATE	**01/04/2005**
DURATION	**48 months**
PROJECT WEBSITE	**http://www.evi-genoret.org/**

PROMEMORIA

From cell-cell recognition to memory formation. New strategies for the treatment of dysfunctional plasticity, learning and memory

The PROMEMORIA project focuses on the role of neuronal cell adhesion molecules and cell recognition processes in normal and dysfunctional plasticity, learning and memory with the aim of developing compounds with a beneficial effect on diseases involving cognitive impairment. The project focuses on gene discovery, structural biology, synaptic plasticity at both the physiological and morphological level, and a number of models of deficient plasticity, learning and memory. Moreover, there is a considerable expertise in drug screening and development.

COORDINATOR	Prof. Elisabeth Bock University of Copenhagen Institute of Molecular Pathology Copenhagen, Denmark
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EC CONTRIBUTION	€9 700 000
STARTING DATE	01/04/2005
DURATION	48 months
PROJECT WEBSITE	http://plab.ku.dk/promemoria/

ADIT

Design of small molecule therapeutics for the treatment of Alzheimer's disease on the discovery of innovative drug targets

ADIT focuses on the development to the preclinical stage of novel chemical entities endowed with specific neuroprotective activity in Alzheimer's disease (AD), capitalizing on the most widely accepted view on the etiology of AD. A validated *in vitro* model of Aß neurotoxicity, established transcriptomics and proteomics methodologies and sophiscated bioinformatic tools are used in order to identify proteins causally involved in Aß-mediate neurodegeneration, put them in an efficient drug discovery pipeline, and bring two drug candidates to the clinic.

COORDINATOR	Dr. Georg C. Terstappen Siena Biotech S.p.A. Discovery Research Division Siena, Italy
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EC CONTRIBUTION	€7 485 490
STARTING DATE	01/06/2005
DURATION	60 months
PROJECT WEBSITE	http://www.aditproject.org/

INNOMED

Innovative Medicines for Europe

The InnoMed project addresses ways of achieving accelerated development of safe and more effective medicines, aiming to revitalize the European biopharmaceutical research environment. InnoMed consortium is led by the European Federation of Pharmaceutical Industry and Associations (EFPIA), which guarantees a commitment from all the stakeholders needed to change the process of drug development in Europe. The main objective is to develop a Strategic Research Agenda (SRA) that will encompass the whole path from discovery of a new drug target to the validation and approval stages of a new drug compound.

COORDINATOR	Dr. Karen Strandgaard Research Directors Group EFPIA Brussels, Belgium
EMAIL	karenstrandgaard@efpia.org
EC CONTRIBUTION	€11 500 000
STARTING DATE	01/10/2005
DURATION	40 months
PROJECT WEBSITE	http://www.imi-europe.org/researchprojects/pages/default.aspx

NeuroproMiSe

Neuroprotective strategies for multiple sclerosis

The overall aim of the NeuroproMiSe project is to elucidate the molecular mechanisms underlying inflammation-driven injury of the Central Nervous System (CNS) and to define and validate novel targets for the development of therapies for debilitating CNS inflammatory diseases. NeuroproMiSe will achieve this goal by identifying the essential genes and pathways leading to Multiple Sclerosis and neuroprotection of axons and neurons in a range of disease and *in vitro* models. This knowledge will be used to develop new therapeutic compounds.

COORDINATOR	Dr. Francesca Aloisi Instituto Superiore di Sanità Department of Cell Biology and Neuroscience Rome, Italy
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EC CONTRIBUTION	€11 400 000
STARTING DATE	01/11/2005
DURATION	60 months
PROJECT WEBSITE	http://www.neuropromise.eu/

EUSynapse

From molecules to networks: understanding synaptic physiology and pathology in the brain through mouse models

The aim of EUSynapse is to further our understanding of synaptic function and dysfunction by using the mouse as the prime model organism. Manipulating the expression levels of synaptic proteins will originate detailed knowledge of molecular machineries that drive synaptic transmission and of mechanisms responsible for changes in the synaptic properties (synaptic plasticity). These studies will provide insights into the contribution of synaptic function and dysfunction to human diseases, helping identifying candidate drug targets for therapeutic interventions.

COORDINATOR	Prof. Reinhard Jahn Max Planck Institute for Biophysical Chemistry Göttingen, Germany
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EC CONTRIBUTION	€8 000 000
STARTING DATE	01/12/2005
DURATION	48 months
PROJECT WEBSITE	http://www.eusynapse.mpg.de/

EPICURE

Functional genomics and neurobiology of epilepsy: a basis for new therapeutic strategies

Epilepsies are multifactorial disorders. A better knowledge of epileptogenic mechanisms is the essential precondition to developing more effective antiepileptic treatments. EPICURE will identify disease-causing genes and their functional role in the pathophysiology of neuronal excitability and network synchronisation. The work will focus on the role of voltage-gated Na+ channels and GABAergic synaptic inhibition in drug-resistant temporal lobe epilepsy and epilepsies due to developmental cortical abnormalities using animal models and human tissue.

COORDINATOR	Prof. Giuliano Avanzini Istituto Neurologico 'Carlo Besta' Milan, Italy
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EC CONTRIBUTION	€9 883 259
STARTING DATE	01/01/2007
DURATION	48 months
PROJECT WEBSITE	http://ww.epicureproject.eu/

IMAGEN

Reinforcement-related behaviour in normal brain function and psychopathology

IMAGEN wants to use neuroimaging to identify the neurobiological and genetic basis of individual differences in brain responses to reward, punishment and emotional cues in adolescents, and to assess their relevance to mental disorders. To this end, the project will perform the first multicentre functional and structural genetic-neuroimaging study of a cohort of 2,000 + 14 year old adolescents. Intermediate phenotypes of risk for adolescent mental illness will be explored based on cognitive, behavioural, clinical and neuroimaging data.

COORDINATOR	Prof. Gunter Schumann King's College Institute of Psychiatry London, United Kingdom
EMAIL	Gunter.Schumann@iop.kcl.ac.uk
EC CONTRIBUTION	€10 000 000
STARTING DATE	01/02/2007
DURATION	60 months
PROJECT WEBSITE	http:// www.imagen-europe.com/

NeuroCypres

Neurotransmitter Cys-loop receptors: structure, function and disease

Cys-loop receptors (CLRs) are neurotransmitter-gated ion channels that are potential drug targets for the treatment of muscular dystrophies, neurodegenerative and neuropsychiatric diseases. The main goal of NeuroCypres is to obtain high-resolution X-ray and NMR structures for CLRs and their complexes with diverse ligands, agonists/antagonists, channel blockers and modulators, which will reveal basic mechanisms of receptor functioning and open new avenues to rational drug design. In addition, the project aims at understanding the function of these receptors in the brain.

COORDINATOR	Prof. August Smit Vrije Universiteit Amsterdam Centre for Neurogenomics and Cogitive Research (CNCR) Amsterdam, The Netherlands
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EC CONTRIBUTION	€11 025 000
STARTING DATE	01/01/2008
DURATION	48 months
PROJECT WEBSITE	to be developed

EDICT

European Drug Initiatives on channels and transporters

By combining computational and experimental analyses, the European Drug Initiative on Channels and Transporters, EDICT, will analyse existing detailed molecular models of channel and transporter proteins and novel structures to identify the critical regions constituting drug targets. These basic discoveries will be translated into the design of novel drugs that modify activities of the membrane proteins. The range of human proteins covered includes potassium channels, anion and cation transporters, neurotransmitter transporters, cation-transporting ATPases, and mitochondrial transporters.

COORDINATOR	Prof. Peter Henderson University of Leeds Institute of Membrane and Systems Biology Leeds, United Kingdom
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EC CONTRIBUTION	€11 896 559
STARTING DATE	01/02/2008
DURATION	48 months
PROJECT WEBSITE	to be developed

EURIPIDES

European Research initiative to develop imaging probes for early *in vivo* diagnosis and evaluation of response to therapeutic substances

Understanding the mechanisms of drug resistance will lead to the improvement of existing therapies. EURIPIDES focuses on the idea that drug resistance in the brain mainly depends on inadequate access of CNS drugs to their targets across the blod brain barrier (BBB). Using radiochemistry, molecular and cellular biology, physics, physiology, pharmacology, pathology and genetics, Euripides will develop, validate and evaluate non-invasive imaging probes for in-vivo quantification of the function of multidrug transporters that constitute the BBB.

COORDINATOR	Dr. Matthias Koepp University College London Institute of Neurology London, United Kingdom
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EC CONTRIBUTION	€6 994 850
STARTING DATE	01/02/2008
DURATION	48 months
PROJECT WEBSITE	http://www.ion.ucl.ac.uk/research/epilepsy/news.htm

ARISE

Affording recovery in stroke

The ARISE approach is based on a thorough reexamination of the failures and bottlenecks of previous attempts to develop effective therapies for stroke. The ARISE consortium combines expertise in clinical as well as preclinical stroke research. To obtain clinical proof of principle and to translate findings into effective therapy of stroke, ARISE has established a dedicated clinical trials platform to (1) advice the basic researchers on clinically relevant questions, (2) to review the development of innovative therapies, and to (3) ultimately take the most promising preclinical strategy into a multicentre randomized clinical trial.

COORDINATOR	Prof. Ulrich Dirnagl Charité - Universitätsmedizin Berlin Dept. of Experimental Neurology Berlin, Germany
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EC CONTRIBUTION	€11 246 776
STARTING DATE	01/03/2008
DURATION	60 months
PROJECT WEBSITE	to be developed

EUSTROKE

European Stroke Research Network

A primary focus of the EUSTROKE research programme is to improve our understanding of the neurovascular unit (NVU) to enable better prevention and treatment of stroke. This involves elucidation of dynamic interactions of vascular, cellular and matrix signalling in both the grey and white matter of the brain. EUSTROKE will promote integration of both clinical and experimental research teams in cerebrovascular biology, imaging, prevention, and reperfusion with a common focus upon the NVU to provide new opportunities to meet the challenges of stroke.

COORDINATOR	Prof. Stephen Meairs University of Heidelberg Faculty of Medicine Mannheim, Department of Neurology Heidelberg, Germany
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EC CONTRIBUTION	€10 497 027
STARTING DATE	01/03/2008
DURATION	60 months
PROJECT WEBSITE	to be developed

MOODINFLAME

Early diagnosis, treatment and prevention of mood disorders targeting the activated inflammatory response system

Moodinflame wants to asses whether changes in the immune response system (IRS) have any prognostic value for depression. Moodinflame partners come from 10 European countries to achieve two main objectives: A) the study of the pathogenesis of inflammation-related mood disorders and the mechanism of antiinflammatory and tryptophan metabolism restoring drugs in animal models; B) in-parallel, the study of mood disorder patients to validate two sets of already developed biomarker tests to identify patients and individuals at risk for a mood disorder.

COORDINATOR	Prof. Hemmo A. Drexhage Erasmus Medical Centre Rotterdam, Netherlands
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EC CONTRIBUTION	€10 236 300
STARTING DATE	01/11/2008
DURATION	48 months
PROJECT WEBSITE	to be developed

NEuroStemCell

European Consortium for Stem Cell Therapy for Neurodegenerative Diseases

The NEuroStemCell consortium aims at paving the way for successful clinical trials of stem cell therapy for Parkinson's (PD) and Huntington's (HD) disease. The goal is to compare different stem cell sources with respect to their capacity to generate mesencephalic dopaminergic and striatal GABAergic neurons suitable for neuronal cell replacement. The major sources will be neuralised Embryonic Stem (ES) cells, adherent Neural Stem (NS) cell lines and short term expanded Ventral Midbrain neural stem cells/progenitors grown as Neurospheres (VMN).

COORDINATOR	Prof. Elena Cattaneo University of Milano Department of Pharmacological Sciences and Centre for Stem Cell Research Milan, Italy
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EC CONTRIBUTION	€11 600 000
STARTING DATE	under negotiation
DURATION	48 months
PROJECT WEBSITE	to be developed

OptiStem

Optimization of stem cell therapy for clinical trials of degenerative skin and muscle diseases

The aim of OptiStem is to develop and implement efficacy of clinical trials with adult tissue stem cells for degenerative diseases of epithelia and skeletal muscle. The consortium will address not only issues related to basic biology of stem cells, but also transplantation related issues, such as engraftment, angiogenesis, tissue remodelling and immune response. It will also address regulatory and ethical issues related to these novel procedures.

COORDINATOR	**Prof. Giulio Cossu** **Dibit, H. San Raffaele** **Stem Cell Research Institute** **Milan, Italy**
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EC CONTRIBUTION	**€11 992 312**
STARTING DATE	**under negotiation**
DURATION	**60 months**
PROJECT WEBSITE	**to be developed**

SPECIFIC TARGETED RESEARCH PROJECTS (FP6)

SMALL AND MEDIUM COLLABORATIVE PROJECTS (FP7)

NCL-models

Dissecting neuronal degeneration: Neuronal ceroid lipofuscinoses from genes to function

The aim of NCL-models is to reveal the pathogenetic mechanisms in neuronal ceroid lipofuscinoses (NCL). The goal is to characterise NCL proteins, with a focus on the molecular mechanisms by which their loss of function leads to neurodegeneration. A key element of the project is the generation of novel animal models for NCL, including cell, yeast, nematode and mouse. Models will then be used to study the pathogenetic mechanisms of NCLs by a variety of techniques including molecular genetics, cell biology, mRNA and protein expression profiling, proteomics, and morphological approaches.

COORDINATOR	Dr. Anu Jalanko National Public Health Institute Department of Molecular Medicine Helsinki, Finland
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EC CONTRIBUTION	€2 000 000
STARTING DATE	01/01/2004
DURATION	36 months
PROJECT WEBSITE	http:// www.nclmodels.org/

NFG

Functional genomics of the adult and developing brain

NFG brings together researchers who are interested in neuronal dynamics and those interested in understanding how neural activity depends on gene expression. The aim of this project is to identify and characterise complex, physiological electrical activity of cells and networks, and to understand how such global dynamics are orchestrated at a cellular and molecular level in patterns of gene expression. The project will focus on two tissue types of primary importance in the nervous system: sensory receptors (olfactory and visual) and cortex (hippocampus and neocortex).

COORDINATOR	Prof. Anna Maria Menini Scuola Internazionale Superiore di Studi Avanzati (SISSA) Neurobiology Sector Trieste, Italy
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EC CONTRIBUTION	€1 849 600
STARTING DATE	01/01/2004
DURATION	48 months
PROJECT WEBSITE	http://europabio.euproject.eu/ index.php/kb_1/io_811/io.html

SPASTICMODELS

Genetic models of chronic neuronal degeneration causing hereditary spastic paraplegia

Hereditary spastic paraplegia (HSP) is a disorder that results in progressive weakness and spasticity of the lower limbs. SPASTICMODELS intends to provide a multi-faceted, comprehensive approach to study the pathogenesis of HSP with a particular emphasis on the role of mitochondrial dysfunction and impaired axonal transport. The project will produce and characterise seven novel mouse models for HSP, in addition to the recently developed paraplegin null mutant, to identify common mechanisms leading to axonal degeneration.

COORDINATOR	Dr. Georgio Casari San Raffaele Scientific Institute DiBit Milan, Italy
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EC CONTRIBUTION	€1 900 000
STARTING DATE	01/01/2004
DURATION	36 months
PROJECT WEBSITE	http://www.spasticmodels.org/

NEUROKCNQPATHIES

Cell biology of rare monogenic neurological KCNQ disorders

The principal aim of this project is to determine the role of M-channels in neuronal and non-neuronal physiology, and to understand the cellular basis of rare neurological syndromes associated with KCNQ channel dysfunction. In particular, the project aims to understand the processes underlying cellular targeting and trafficking of the channels and to identify targeting signals within the channel. The role of associated proteins and second messenger systems in regulating M-channel function will be studied as well as their interactions, and the role of the KCNQ ligands in channel function.

COORDINATOR	Dr. Alvaro Villarroel Unidad de Biofisica CSIC-UPV/EHU Universidad del País Vasco Leioa (Bilbao), Spain
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EC CONTRIBUTION	€1 900 000
STARTING DATE	01/04/2004
DURATION	36 months
PROJECT WEBSITE	http://www.KCNQ.com/

X-ALD

X-linked Adrenoleukodystrophy (X-ALD): pathogenesis, animal models and therapy

The X-ALD ultimate goal is to develop new therapies for X-linked adrenoleukodystrophy (X-ALD), the most frequent inherited monogenic demyelinating disease of the central nervous system.
The project aims to identify genes and proteins that are differentially regulated in the target tissues of X-ALD patients. In addition, four promising new therapeuthic strategies will be explored: ALD gene transfer into haematopoietic stem cells, into mesenchymal stem cells, and by direct injection of viral vectors, and pharmacological induction of a related gene as a substitute for the deficient ALD gene.

COORDINATOR	Prof. Johannes Berger Medical University of Vienna Centre for Brain Research, Division of Neuroimmunology Vienna, Austria
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EC CONTRIBUTION	€1 800 000
STARTING DATE	01/04/2004
DURATION	36 months
PROJECT WEBSITE	http://www.lifecompetence.eu/index.php/kb_1/io_787/io.html

EUROHEAD

Migraine genes and neurobiological pathways

Migraine is a common chronic pain syndrome for which effective and well-tolerated prophylactic agents are much needed. EUROHEAD aims to unravel the genetic and neurobiological basis of the migraine. To this extent, EUROHEAD will identify and validate migraine genes and study their functional involvement with state-of-the-art techniques in patients and experimental animal models. In addition, the EUROHEAD Consortium wants to promote and disseminate the existing and newly acquired knowledge of the underlying clinical and neurobiological science of migraine syndromes among clinicians, scientists, patients and general public worldwide.

COORDINATOR	Prof. Michel Ferrari Leiden University Medical Centre Department of Neurology Leiden, The Netherlands
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EC CONTRIBUTION	€3 200 000
STARTING DATE	01/05/2004
DURATION	36 months
PROJECT WEBSITE	http://ww.eurohead.org/

PainGenes

Heritability of chronic neuropathic pain

Pain susceptibility genes are intrinsically hard to detect in human lineages and populations. PainGenes adopts the alternative approach of exploiting new rodent models of neuropathy to uncover pain susceptibility loci and associated neurobiological processes, using inbred mouse strains that show high versus low pain phenotypes. Linkage analysis and positional cloning, together with expression arrays and a variety of electrophysiological and neurochemical methods applied to primary sensory neurons, will be used to identify the biological causes of contrasting pain phenotype.

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EC CONTRIBUTION	€1 600 000
STARTING DATE	01/05/2004
DURATION	36 months
PROJECT WEBSITE	http://www.biocompetence.eu/index.php/kb_1/io_3417/io.html

UPMAN

Understanding protein misfolding and aggregation by NMR

Aberrant protein folding can lead to protein aggregates to be deposited inside or outside cells, the cause of several neurodegenerative and systemic diseases. The UPMAN project aims to study structural states of proteins, ranging from highly flexible unfolded monomers to soluble oligomers and precursors of fibrillar aggregates, relevant to understanding protein misfolding and aggregation. The technique of choice will be NMR, which is in principle able to probe at atomic level the structural characteristics of the range of species relevant to understanding misfolding and aggregation.

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EC CONTRIBUTION	€1 900 000
STARTING DATE	01/11/2004
DURATION	42 months
PROJECT WEBSITE	http://schwalbe.org.chemie.uni-frankfurt.de/upman/

EuroCLot

Genetic regulation of the end-stage clotting process that leads to thrombotic stroke

EUROCLOT aims to identify and validate potentially therapeutically useful genes associated with thrombotic stroke using a novel approach. Stroke is a complex end-point disease involving the interaction of many pathologic processes, such as vessel wall atheroma, hypertension, platelet function & coagulation. EUROCLOT focuses on uncovering the genes that control the end-stage of the coagulation process that leads directly to the production of the thrombus (clot) that causes vascular obstruction and tissue death.

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EC CONTRIBUTION	€1 500 000
STARTING DATE	01/01/2005
DURATION	36 months
PROJECT WEBSITE	http://www.euroclot.eu/index.html

INTERDEVO

Gene networks in cortical interneuron development: modelling interneuron function in health and disease

Interneuron dysfunction has been associated with severe neurological and psychiatric disorders (e.g. epilepsy, schizophrenia and bipolar disorder). The goal of INTERDEVO is to understand the cellular and molecular mechanisms controlling the development of cortical interneurons. To this aim, the project combines novel bioinformatic and genomics applications, cutting-edge imaging techniques, and conventional cellular, molecular and electrophysiological methodologies.

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EC CONTRIBUTION	€2 000 000
STARTING DATE	01/01/2005
DURATION	36 months
PROJECT WEBSITE	http://in.umh.es/interdevo/

MOLSTROKE

Molecular basis of vascular events leading to thrombotic stroke

MOLSTROKE focuses on identifying pathogenetic molecular mechanisms and vascular protagonists defining vulnerable plaques and contributing to plaque rupture. The priority research areas of MOLSTROKE comprise 1) concomitant wide genomic and histoproteomic screening of lesional vascular tissue to identify novel pathogenetic markers, 2) Early inflammatory events, which are the key to atherosclerosis progression and hence primary prevention, 3) atherosclerotic plaque instability, which leads to the acute clinical thrombotic events.

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EC CONTRIBUTION	€2 300 000
STARTING DATE	01/01/2005
DURATION	36 months
PROJECT WEBSITE	http://www.molstroke.com/

STRESSPROTECT

Inhibition of stress activated protein kinase signalling as a therapeutic strategy against exitotoxicity

Stress-activated protein kinases (SAPKs) have been identified as novel mediators of excitotoxicity. STRESSPROTECT addresses the organisation and function of SAPKs signalling with molecular genetics, proteomics, signalosome-analysis, and molecular pharmacology including pharmacokinetics. STRESSPROTECT aims at identifying excitotoxicity-related SAPK signalosomes and delivering novel inhibitor peptides against SAPK signalling underlying excitotoxicity-mediated degeneration for possible use in in clinical trials.

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EC CONTRIBUTION	€1 499 560
STARTING DATE	01/01/2005
DURATION	36 months
PROJECT WEBSITE	http://www.stressprotect.de/

SYNSCAFF

Synaptic scaffolding proteins orchestrating cortical synapse organisation during development

SYNSCAFF aims to reach a better understanding of genes and proteins driving synaptic structuring and organisation during development of cortical networks and circuitries. This project integrates the information about the role of different candidate genes/proteins in synaptic formation, remodelling and function and it capitalises on results obtained in *in vitro* systems and translates them to clinical application. The final goal is to define the molecular portrait of the cortical synapse during development, inclufding the key localisation of gene products within the synaptic structure.

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EC CONTRIBUTION	€1 900 000
STARTING DATE	01/01/2005
DURATION	36 months
PROJECT WEBSITE	http://www.synscaff.org/

GRIPANNT

Glutamate receptor interacting proteins as novel neuroprotective targets

The recent discovery of proteins that anchor and interact with glutamate receptors opens a new strategic approach to cytoprotective therapy. The GRIPANNT project aims at providing a platform for cytoprotective therapies that do not interfere unduly with synaptic transmission. The first part of the project aims at providing a more complete picture of the functional roles of glutamate receptor interacting proteins. The second part aims at exploiting the results obtained through the first part of the project to design ways to alleviate excitotoxicity in different model systems.

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EC CONTRIBUTION	€1 785 000
STARTING DATE	01/08/2005
DURATION	36 months
PROJECT WEBSITE	http://www.cmbn.no/gripannt/

AUTISM MOLGEN

Using European and International populations to identify autism susceptibility loci

The goal of Autism Molgen is to identify the susceptibility genes implicated in Autism Spectrum Disorders. The project will pool data from 425 previously ascertained multiplex families and perform a meta-analysis to identify the top 6 susceptibility regions. Brain expressed candidate genes in these narrowed regions will be tested for mutations and association with autism. In parallel, previously identified potential candidate genes will be tested for mutations/association in the combined sample of multiplex families.

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EC CONTRIBUTION	€2 000 000
STARTING DATE	01/10/2005
DURATION	36 months
PROJECT WEBSITE	http://www.well.ox.ac.uk/monaco/autism/molgen.shtml

Enough sleep

Disorders of sleep regulation: basic mechanisms and therapeutic perspectives

This project presents the first integrated effort to study the different aspects of sleep regulation at the genetic, molecular, cellular and network levels. The consortium covers all areas of basic sleep research and is complemented by specialists in human genomics, clinical and adenosine research. The research makes extensive use of the existing, representative DNA databank recently collected in Finland and studies the correlations between polymorphisms in genes associated with sleep regulation and the behavioural phenotype assessed by extensive questionnaires and by a health examination.

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EC CONTRIBUTION	€1 425 000
STARTING DATE	01/12/2005
DURATION	36 months
PROJECT WEBSITE	http://www.enoughsleep.fi/

RESCUE

From stem cell technology to functional restoration after spinal cord injury

The aim of RESCUE is to develop therapeutic intervention strategies aimed at reconstructing the neuronal circuitry damaged in spinal cord injury. In particular, RESCUE is to use human adult stem cells generated from bone marrow and adult CNS to: 1) bring permissive molecules and/or trophic agents at the level of the lesion to enhance the regenerative capacity of severed axons; 2) be grafted locally to stimulate specific circuits such as the central pattern generator (replacement therapy); 3) enhance the reparative potential of intrinsic stem cells.

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EC CONTRIBUTION	€2 700 000
STARTING DATE	01/12/2005
DURATION	36 months
PROJECT WEBSITE	http://www.rescueproject.eu/

NABINMS

Neutralizing antibodies on interferon beta in multiple sclerosis

The effectiveness of interferon beta (IFNb) is well established in relapsing-remitting multiple sclerosis (MS). Nevertheless, the use of this drug in clinical practice is complex, especially because it may induce neutralising antibodies (NABs) that cause a reduction in IFNb bioavailability. The NABINMS network aims to provide standardised IFNb testing and to define the IFNb titres which are clinically relevant. The project also wants to develop in-vitro and in-vivo assays and models that predict immunogenicity, allowing strategies to prevent or modulate the induction of NABs.

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STARTING DATE	01/01/2006
DURATION	36 months
PROJECT WEBSITE	http://www.nabinms.eu/

Plurigenes

Pluripotency associated genes to de-differentiate neural cells into pluripotent cells

Plurigenes aims at understanding the function of genes controlling pluripotency in the central nervous system. These later could enable the de-differentiation of terminally differentiated neural cells into pluripotent cells through transgenesis. Plurigenes will start by identifying candidate genes in model organisms, following original approaches involving screens performed by *in situ* hybridations on well characterised neural structures or by gain of function analysis. Innovative technologies of transgenesis and imaging in several model organisms will be settled to reach this goal.

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STARTING DATE	01/01/2006
DURATION	36 months
PROJECT WEBSITE	http://www.plurigenes.org/

TSEUR

An integrated immunological and cellular strategy for sensitive TSE diagnosis and strain discrimination

No biomarkers are available for preclinical diagnosis of prion infection in body fluids. The TSEUR consortium proposes to develop, validate, and exploit innovative reagents and technologies that will: (1) enhance detection of pathological prion protein, (2) allow direct measurements of prion infectivity, and (3) validation of new TSE biomarkers in body fluids, with the ultimate goal to enhance the safety of the blood supply, to provide minimally invasive diagnostics of human and animal TSEs and to develop highly sensitive tools for discrimination of prion infections.

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STARTING DATE	01/01/2006
DURATION	36 months
PROJECT WEBSITE	http://www.research-projects.uzh.ch/p8241.htm

AntePrion

Development of a pre-clinical blood test for prion diseases

There are currently no tests for early prion diagnosis. AntePrion proposes to develop methodologies for the pre-clinical detection of prions in body fluids, based on (i) PrPSc (silent carriers of pathogenic PrP mutations), and (ii) novel surrogate (non-PrP) markers of prion diseases. To this end, the consortium has proven clinical, experimental and industrial expertise. PrPSc detection in body fluids will be achieved by systematically improving: (i) Sample fractionation; (ii) PrPSc concentration; (iii) PrPSc amplification; (iv) PrPSc detection; Proprietary software will be developed for the analysis.

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STARTING DATE	01/06/2006
DURATION	36 months
PROJECT WEBSITE	http://anteprion.vitamib.com/

ARGES

Age-dependent inflammatory responses after stroke

The ARGES project wants to characterise the age-dependent inflammatory reaction in the brain following a stroke using functional genomics and proteomics. Systemic markers of the inflammatory response after stroke will be identified in circulating leukocytes, which will serve as clinical indicators for potential therapeutical interventions. In addition to the genome-wide approach, ARGES will specifically analyse the functional impact of a pre-selected pathway, the sphingomyelin-ceramide-cycle, considered to be critically involved in stroke-induced destructive processes.

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EC CONTRIBUTION	€995 000
STARTING DATE	01/06/2006
DURATION	36 months
PROJECT WEBSITE	http://www.lifecompetence.eu/index.php/kb_3121/io_550/io.html

NEURODYS

Dyslexia genes and neurobiological pathways

The NEURODYS project aims to clarify the biological bases of developmental dyslexia. Confirming the relation between dyslexia, candidate genes and brain regions requires large samples from diverse cultures and languages. NEURODYS combines innovative analyses of how the reading problems relate to genes, environment, brain structure, and brain function. Nearly 4 000 children will be assessed in this large coordinated effort to build the largest biological database on dyslexia worldwide that will put Europe at the forefront of dyslexia research in less than three years.

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STARTING DATE	01/07/2006
DURATION	36 months
PROJECT WEBSITE	http://www.neurodys.com/

MIMOVAX

Alzheimer´s disease-treatment targeting truncated Aß40/42 by active immunisation

Alzheimer's disease (AD) is the most common form of dementia in humans. AD is characterized by the abnormal accumulation of amyloid plaques in the brain. Immunotherapeutic treatments lead to amyloid plaque reduction and have beneficial impact on disease progression in animal models. MimoVax aims to cure AD patients through vaccination. The cornerstone of the new vaccination strategy is the proprietary AFFITOPE technology of AFFiRiS GmbH, a Biotech company based in Vienna and the project coordinator. The project includes a phase I clinical trial for the AD vaccine.

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STARTING DATE	01/10/2006
DURATION	36 months
PROJECT WEBSITE	http://www.mimovax.eu/

STROKEMAP

Multipotent adult progenitor cells to treat stroke

Multipotent Adult Progenitor Cells (MAPCs) differentiate into vascular and neural cells, and are an ideal allogeneic cell product to treat stroke. STROKEMAP will (i) develop approaches to generate committed vascular cells and neuroprogenitors, and identify key molecular events that guide differentiation; (ii) evaluate the pre-clinical efficacy of allogeneic MAPCs or their progeny in stroke, including development of non-invasive imaging techniques to follow the fate of grafted cells; (iii) compare the efficacy of MAPCs with that of the 'gold-standard' stem cell populations in stroke with the aim of eshablishing potential new therapies.

COORDINATOR	**Prof. Catherine Verfaillie Katholieke Universiteit Leuven Interdepartemental Stem Cell Institute Leuven, Belgium**
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EC CONTRIBUTION	**€2 400 000**
STARTING DATE	**01/10/2006**
DURATION	**36 months**
PROJECT WEBSITE	**http://europabio.euproject.eu/index.php/kb_1/io_598/io.html**

NEOBRAIN

Neonatal estimation of brain damage risk and identification of neuroprotectants

The focus of NEOBRAIN is the prevention of brain damage observed in preterm newborns. The objectives of NEOBRAIN are: (i) to generate marker profiles of damage in multiple animal models and in human preterm infants; (ii) to develop neuroprotective strategies; (iii) to implement a clinical platform for epidemiological studies in human infants and to pave the way for clinical drug development. The clinical platform may serve as the basis for subsequent large-scale pan-European perinatal neuroprotective research initiatives (Euro-Neo-Net, EURAIBI).

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STARTING DATE	**15/10/2006**
DURATION	**36 months**
PROJECT WEBSITE	**http://www.neobrain.eu/**

INTELLIMAZE

High-throughput, fully automated and cost-effective behavioural phenotyping of normal, clinical and genetic mouse models

This project will develop and validate a compact, economic and fully automated modular platform, INTELLIMAZE, that will permit both high-throughput and detailed behavioural characterisation of current and future mouse models in biomedicine. This system should fit into a single small mouse room. The availability of simplified, rapid and thorough behavioural testing of mice without need for specialised personnel will expand the present market to include new categories of customers, and favour the dissemination of the technology among European labs.

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STARTING DATE	01/11/2006
DURATION	36 months
PROJECT WEBSITE	http://www.intellimaze.eu/forum/

NovelTune

Novelty Tuning: behavioural, electrophysiological and molecular mechanisms of novelty detection

This project addresses one of the most profound determinants of brain function and cognition: how is the brain affected by a stimulus that is novel and is therefore potentially significant? The project, centred on the auditory system, will decipher the pathways that start with the detection of a novel stimulus and lead through a cascade of inter-related signals to the induction of the synaptic plasticity. Novelty detection will be studied by using three different readouts: behavioural, electrophysiological and molecular.

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STARTING DATE	01/11/2006
DURATION	36 months
PROJECT WEBSITE	http://www.noveltune.org/

SGENE

A large-scale genome-wide association study of schizophrenia addressing variation in expressivity and contribution from environmental factors

SGENE aims to identify genetic variants associating with schizophrenia, study their impact on phenotype and their interactions with environmental factors contributing to the pathogenesis of the disease. The project has a two-stage design: in Phase I, schizophrenia patients and controls will be genotyped and searched genome-wide for association to schizophrenia. Significant markers identified in Phase I will be carried over to Phase II and typed on a larger, independent sample to provide new targets for the development of novel therapies.

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STARTING DATE	01/11/2006
DURATION	36 months
PROJECT WEBSITE	http://www.sgene.eu/

INDABIP

Innovative diagnostic approaches for biomarkers in Parkinson's disease

The INDABIP project aims to identify biomarkers for the early diagnostics of Parkinson's, disease in particular relevant proteins, mRNA, miRNAs, differentially matured RNAs and methylated DNA, whose analysis can be transformed in diagnostic tests. While most biomarkers are mere reporters of the disease state, others may actually be key factors in the processes that lead to the onset and development of the disease. The second aim of the INDABIP project is therefore to identify these key factors and to evaluate their potential as drug targets.

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STARTING DATE	01/12/2006
DURATION	36 months
PROJECT WEBSITE	http://europabio.euproject.eu/index.php/kb_1/io_593/io.html

MYOAMP

Amplification of human myogenic stem cells in clinical conditions

The aim of this network is to set up conditions for the treatment of Duchenne's Muscular Distrophy (DMD) by exon-skipping. A truncated but functional dystrophin can be generated by using viral-induced exon-skipping. The use of AAV as viral vector allows a large dissemination of the masking sequences, but triggers an immune response, and therefore can be used only once. Myoamp aims at setting the conditions required for a clinical trial using autologous stem cells that have been previously modified by exon skipping, in order to target muscles that are not accessible using AAV vectors.

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STARTING DATE	01/12/2006
DURATION	36 months
PROJECT WEBSITE	http://europabio.euproject.eu/index.php/kb_1/io_669/io.html

STEMS

Pre-clinical evaluation of stem cell therapy in stroke

The use of stem cells (SC) is of particular importance in disciplines that desperately lack treatment options, such as brain disorders and lesions. Given their expected capacity to self-renew and differentiate efficiently into the desired cell type, clonal populations of stem cells (SC) promise to produce beneficial effects in a number of diseases. However, much crucial information is still lacking before SC transplantation becomes a clinical reality. The STEMS project specifically aims at determining the extent and limits of SC therapy in stroke in order to pave the way for clinical therapeutic trials.

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DURATION	36 months
PROJECT WEBSITE	http://www.stemsproject.eu/

AGLAEA

Development of novel animal models of glutamatergic central nervous system disorders using *in vivo* siRNA and transgenic approaches

There is a strong need for animal models of hypo- and hyper-glutamatergic states as impaired glutamatergic transmission is involved in numerous psychiatric diseases. AGLAEA will develop and characterise models of selective, partial knockdown of specific components of the brain glutamatergic system in mice. This will provide better comprehension of the implication of glutamate signalling in diseases such as schizophrenia, anxiety and cognitive disorders, and will enable the further testing of new drugs for treatment.

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STARTING DATE	01/01/2007
DURATION	36 months
PROJECT WEBSITE	http://www.lifecompetence.eu/index.php/kb_3121/io_687/io.html

EDAR

Beta amyloid oligomers in the early diagnosis of AD and as marker for treatment response

The EDAR study aims to develop and validate new biomarkers for Alzheimer's disease (AD). Beta amyloid oligomers have been recognized as a key pathogen in AD only recently. Due to their low concentration, they can not be measured with regular techniques. In the present study, ultra-sensitive assays will be developed in order to measure beta amyloid oligomers *in vivo*. In order to validate the assay for beta amyloid oligomers, cerebrospinal fluid and plasma will be repeatedly collected in subjects with AD, other types of dementia, Mild Cognitive Impairment, and control subjects.

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STARTING DATE	01/01/2007
DURATION	36 months
PROJECT WEBSITE	http://www.edarstudy.eu/

GENEPARK

Genomic biomarkers for Parkinson's disease

The main goal of the project is to determine gene expression profiles, specific for genetic and idiopathic Parkinson's disease (PD) patients, to be utilised clinically as non-invasive diagnostic tests for PD. The sensitivity of the newly developed diagnostic test will be determined by extensive validations on independent cohort of PD patients, whereas the specificity will be assessed by testing patients with atypical parkinsonisms. Finally, GENEPARK aims to determine correlations between gene expression signatures and different stages of PD, and develop new bioinformatic software tools for selection of genomic biomarkers.

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STARTING DATE	01/01/2007
DURATION	36 months
PROJECT WEBSITE	http://www.genepark.org/index.php

MEMORIES

Development, characterisation and validation of new and original models for Alzheimer's disease

Alzheimer's disease (AD) is a progressive brain disorder that gradually destroys a person's memory and ability to carry out daily activities. One major hurdle in drug screening and target discovery in AD is the lack of a suitable animal model, as these fail to fully reproduce the characteristics of the disease. The MEMORIES project aims at developing, characterising and validating new AD animal models based on a deficit of neurotrophic signalling. These models have a real potential for becoming a 'gold standard' for developing new therapeutic tools in the AD field.

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STARTING DATE	01/01/2007
DURATION	36 months
PROJECT WEBSITE	http://europabio.euproject.eu/index.php/kb_1/io_758/io.html

NEURO-SCREEN

Sensitive and differential blood and cerebrospinal fluid test for neurodegenerative dementia diagnosis

The project aims to develop an integrated system allowing differential diagnosis of neurodegenerative diseases based on several patented, sensitive and robust technologies. This system uses an ultrasensitive detection of specific direct and indirect amyloid-related markers in the cerebrospinal fluid and in blood, with new derivative products of nano/micro biosciences. Among diseases with amyloid deposits, the NeuroScreen project will focus on Alzheimer and Prion diseases for which some ambiguities still exist regarding their differential diagnosis.

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STARTING DATE	01/01/2007
DURATION	36 months
PROJECT WEBSITE	http://www.lifecompetence.eu/index.php/kb_1/io_734/io.html

NeuroTAS

Microfluidic total analysis system for the early diagnostic of neurodegenerative disorders

The project aims to develop a prototype for a miniaturized diagnostic system for the early stage of neurodegenerative diseases. The system to be developed could additionally be used as a point-of-care instrument for patient follow-up. It incorporates microfluidic flow control, highly sophisticated nanobiodevices with integrated detection, and novel magnetic nanoparticles. The miniaturization and integration of innovative detection technologies will extend the sensitivity of biomarker detection and improve the precocity of diagnosis.

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STARTING DATE	01/01/2007
DURATION	36 months
PROJECT WEBSITE	http://www.neurotas.eu/

RATstream™

European project on the characterisation of transgenic rat models for neurodegenerative and psychiatric diseases: Automated home cage analyses, live imaging and treatment

RATstream will concentrate on the phenotypical characterisation of rat models of Huntington's and Parkinson's diseases and spinocerebellar ataxia type 17. The project will deliver a procedure for low-cost automated drug screening along with data describing the phenotype for each of the models. The project will develop behavioural and physiological phenotyping procedures, including PET and DTI technologies, to detect systematically neuropsychiatric correlates of neuronal dysfunction and disease progression.

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STARTING DATE	01/01/2007
DURATION	36 months
PROJECT WEBSITE	http://www.ratstream.eu/

STEMSTROKE

Towards a stem cell therapy for stroke

The StemStroke consortium will perform innovative research leading to the first preclinical protocol for application of stem cell therapy in stroke patients. Human neural stem cell (NSC) lines will be isolated from the foetal and adult brain, and from embryonic stem cells. Cellular and molecular characterisation of the NSC lines after transplantation into the stroke-damaged rodent brain will be performed. The StemStroke project will explore the morphological and functional integration of grafted and endogenously generated NSCs and their progeny in the stroke-damaged brain, and develop new *in vivo* imaging and behavioural tests.

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STARTING DATE	01/01/2007
DURATION	36 months
PROJECT WEBSITE	http://stemstroke.eu/front-page/

TAMAHUD

Identification of early disease markers, novel pharmacologically tractable targets and small molecule phenotypic modulators in Huntington's disease

This project aims at identifying novel targets causally associated with Huntington's disease (HD) to support the development of disease-modifying therapeutics and novel biomarkers for early diagnosis. High throughput-RNAi will be employed to identify genes encoding pharmacologically tractable proteins whose inhibition of expression is protective against the HD mutation. Selected validated targets will be screened to identify druggable compounds active and efficacious against the HD mutation in cellular disease models.

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STARTING DATE	01/01/2007
DURATION	42 months
PROJECT WEBSITE	http://www.lifecompetence.eu/index.php/kb_1/io_668/io.html

PHECOMP

Phenotypical characterisation of animal models for neuropsychiatric disorders related to compulsive behaviour

Phecomp will use new sophisticated behavioural and neuroimaging techniques for the characterisation of four new and complementary animal models of compulsive disorders. The behavioural and molecular characterisation of the models, along with parallel neuroimaging (PET), will provide a complete anatomical and functional illustration of the reward pathways imbalance. Correlations between behavioural and genetic components of compulsion in drug addiction and eating disorders will also be investigated.

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STARTING DATE	01/02/2007
DURATION	36 months
PROJECT WEBSITE	http://www.lifecompetence.eu/index.php/kb_1/io_719/io.html

PHOTOLYSIS

Development of flash photolysis for deep uncaging *in vivo* and high-throughput characterisation of neurotransmitter gated ion channels in drug discovery

New photochemistry of cages combined with new pulsed lasers and adaptive optics will be developed to optimise the efficiency, depth and location of photolysis in whole brain *in vivo* and *in vitro*. These developments will be combined with deep imaging to identify mediators and cell types in neurovascular coupling of blood perfusion to neuronal activity, to study postsynaptic channels *in situ*, and investigate the interactions between metabotropic receptors and fast transmitter channels.

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EC CONTRIBUTION	€2 700 000
STARTING DATE	01/03/2007
DURATION	36 months
PROJECT WEBSITE	http://www.lifecompetence.eu/index.php/kb_1/io_747/io.html

cNEUPRO

Clinical Neuroproteomics of Neurodegenerative Diseases

cNEUPRO will apply advanced proteomic tools to discover novel neurochemical dementia markers in blood and cerebrospinal fluid (CSF) for the improved early, as well as predictive, diagnosis of Alzheimer disease. It will also establish European standard operating procedures (SOPs) for current neurochemical dementia diagnostics (NDD) and will establish the first NDD reference centres in Portugal and Hungary. cNEUPRO integrates innovative biotech and bioinformatic companies with leading clinical and proteomic dementia research centres.

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EC CONTRIBUTION	€3 000 000
STARTING DATE	01/04/2007
DURATION	36 months
PROJECT WEBSITE	http://www.lifecompetence.eu/index.php/kb_1/io_773/io.html

MEMOSAD

Memory loss in Alzheimer disease: underlying mechanisms and therapeutic targets

MEMOSAD aims at defining the molecular mechanisms of Abeta- and Tau-induced synaptotoxicity and at developing disease-modifying therapeutics for the prevention of memory loss in Alzheimer disease (AD). Primary neuronal cultures and animal models (C.elegans, zebrafish, mouse) will be employed to define the pathologic pathways leading from Abeta through Tau to synaptotoxicity. This should reveal novel points for therapeutic intervention. MEMOSAD aims to deliver 3 or 4 validated therapeutic targets and at least 2 compounds with demonstrated therapeutic efficacy in mouse models of AD.

COORDINATOR	Prof. Franz Adlkofer VERUM Foundation Munich, Germany
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EC CONTRIBUTION	€2 998 696
STARTING DATE	01/01/2008
DURATION	36 months
PROJECT WEBSITE	to be developed

NEUROGLIA

Molecular and cellular investigation of neuron-astroglia interactions: Understanding brain function and dysfunction

Despite accrued knowledge, many fundamental aspects of neuron-astroglia partnerships remain open. The NeuroGLIA consortium aims: i) to verify the potential of activated astroglia to signal back to neurons rapidly; ii) to define the spatial-temporal dynamics of neuron-astroglia reciprocal signalling; iii) to clarify the specific function of different astroglial subtypes. NeuroGLIA will also investigate how dysfunction of neuron-astroglia signalling contributes to the pathogenesis of brain disorders, focussing on epilepsy.

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STARTING DATE	01/01/2008
DURATION	48 months
PROJECT WEBSITE	http://www.neuroglia.eu/welcome.php

SPINAL CORD REPAIR

Spinal locomotor circuits: organization and repair after injury

This project will integrate knowledge on the development and normal spinal cord function together with biological interventions aiming at protecting and repairing the injured spinal cord. It will elucidate the key molecular pathways responsible for the development and assembly of the spinal circuitry for locomotion. The intrinsic function and modulation the spinal circuitry will be studied in the healthy spinal cord. Finally, the mechanisms of plasticity and reorganization of the circuitry will be examined in the injured spinal cord as will the mechanism to promote regeneration of the lesioned axons.

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STARTING DATE	01/01/2008
DURATION	36 months
PROJECT WEBSITE	to be developed

DEVANX

Serotonin and GABA-B receptors in anxiety: from developmental risk factors to treatment

The project will study the neurobiological basis of anxiety, and open up novel therapeutic approaches in anxiety disorders. Specialists will explore the role of GABA-B receptors in anxiety and the interaction of these receptors with the 5-HT system, the developmental effects of GABA-B receptors and a new generation of GABA-B modulators that produce anxiolytic effects in animal models. Finally they will investigate how exposure to adverse environments interacts with 5-HT-genes and GABA-B receptor genes to produce anxiety phenotypes.

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STARTING DATE	01/02/2008
DURATION	48 months
PROJECT WEBSITE	to be developed

MEMOLOAD

Neurobiological mechanisms of memory loss in Alzheimer's disease

MEMOLOAD will elucidate the molecular mechanisms by which accumulation of beta-amyloid peptide (Aβ) in the brain results in impaired synaptic plasticity and memory loss in Alzheimer's disease. This will translate into new validated *in vitro* and *in vivo* models for the memory impairing effect of Aβ and will feed into industrial development leading to both identification of new drug targets and development of novel peptidomimetic compounds that neutralize the deleterious effects of most harmful Aβ species.

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STARTING DATE	01/02/2008
DURATION	60 months
PROJECT WEBSITE	to be developed

MEMSTICK

Synaptic mechanisms of memory loss: novel cell adhesion molecules as therapeutic targets

The project will investigate the role of novel synaptic cell adhesion molecules (CAMs) in memory loss, and their ability to restore memory function. Specific animal models will be used to investigate memory loss at the molecular, subcellular, cellular and functional level in psychiatric disorders, Alzheimer's disease, stress and aging. This will result in the preclinical development and validation of mimetic peptides for novel synaptic CAMs as potential drug candidates to treat memory deficits or prevent memory decline.

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STARTING DATE	01/02/2008
DURATION	36 months
PROJECT WEBSITE	http://www.memstick.org/

SPACEBRAIN

Space coding in hippocampo-entorhinal neuronal assemblies

The project will use entorhinal grid cells as a model for neuronal computation in non-sensory cortical microcircuits. Using computational modelling and novel electrophysiological, optical and molecular tools, it will establish the mechanisms by which microcircuits in the hippocampus and entorhinal cortex encode, maintain and update representations of location as animals move from one place to another. This understanding may change the way to manage a number of diseases, and may provide European industry with radically innovative concepts for the design of artificial navigating agents.

COORDINATOR	Prof. Edvard Moser Norwegian University of Science and Technology Centre for the Biology of Memory Trondheim, Norway
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EC CONTRIBUTION	€3 000 000
STARTING DATE	01/02/2008
DURATION	36 months
PROJECT WEBSITE	to be developed

BRAINSYNC

Large scale interactions in brain networks and their breakdown in brain diseases

The project goal is to understand how neuronal assemblies exchange information, and how variability in neuronal communication explains variability in behavioural performance in the intact and injured brain. The project concentrates on large-scale interaction between neuronal assemblies that occurs between areas at 2 different temporal scales: 'slow' (<0.1 Hz) and 'fast' (1-150 Hz), aiming to demonstrate the links between them. This may lead to new easy-to-use diagnostic measures of neuronal communication for brain diseases.

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STARTING DATE	01/03/2008
DURATION	36 months
PROJECT WEBSITE	to be developed

CRUMBS IN SIGHT

Restoring Mueller glia cell – photoreceptor interactions with Crumbs

Mutations in the CRB1 gene cause photoreceptor degeneration resulting in progressive blindness. The project will analyze the biochemical, cellular, developmental and physiological functions of CRB1 and CRB1-interacting-proteins. It will analyze the effect of loss of interaction between Mueller glia cells and photoreceptors and explore the efficacy of Mueller glia progenitor cell transplantation in mouse retinas. It will also deliver clinical grade adeno-associated viral gene therapy vectors to express human CRB1 specifically in Mueller glia cells lacking CRB1 function.

COORDINATOR	Dr. Jan Wijnholds Royal Netherlands Academy of Arts and Sciences (KNAW) Netherlands Institute for Neuroscience (NIN) Amsterdam, Netherlands
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EC CONTRIBUTION	€2 999 900
STARTING DATE	01/04/2008
DURATION	50 months
PROJECT WEBSITE	to be developed

nEUROPt

Non-invasive imaging of brain function and disease by pulsed near infrared light

The project aims at the development and clinical validation of advanced non-invasive optical methodologies for in-vivo diagnosis, monitoring, and prognosis of major neurological diseases (stroke, epilepsy, ischemia), based on diffuse optical imaging by pulsed near infrared light. The technique is expected to provide a valuable complementing tool to established diagnostic imaging modalities, to assess perfusion and blood oxygenation in brain tissue and their time evolution in a continuous or quasi-continuous manner.

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STARTING DATE	01/04/2008
DURATION	48 months
PROJECT WEBSITE	to be developed

NGIDD

Neuron-Glia interactions in nerve development and disease

Many neurological diseases are caused by loss or destabilization of the myelin sheath, such as multiple sclerosis, leukodystrophies and peripheral neuropathies. The formation and maintenance of myelin by Schwann cells and oligodendrocytes result from close interactions between the neuron and glia cell. NGIDD aims to unravel the molecular mechanisms underlying axon-glial communication, to discover novel molecules involved in neuron-glia communication and to identify and test new targets for pharmaceutical intervention to aid the regenerative capacity of the nervous system.

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STARTING DATE	01/04/2008
DURATION	48 months
PROJECT WEBSITE	to be developed

AAVEYE

Gene therapy for inherited severe photoreceptor diseases

Current approaches to correct photoreceptor-specific diseases through gene therapy with adeno-associated virus (AAV) vectors are inefficient. The objective of AAVEYE is to develop state-of-the art gene transfer to photoreceptors in the retina, and to provide pre-clinical proof-of-concept of gene therapy for severe blinding retinal photoreceptor diseases to be transferred from bench to bedside. The results of this project will foster the development of novel AAV-mediated therapeutic approaches with a broad potential application in the retina and central nervous system.

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STARTING DATE	under negotiation
DURATION	36 months
PROJECT WEBSITE	to be developed

BrainCAV

Nonhuman adenovirus vectors for gene transfer to the CNS

Gene therapy has the potential to prevent and treat neurodegenerative diseases. This project builds on the potential of canine adenovirus type 2 (CAV-2) vectors, which preferentially transduce neurons and undergo very efficient long-distance targeting via axonal transport. Moreover, the episomal long-term expression of this vector leads to safe, efficient neuron-specific gene delivery. The goil is to provide a proof-of-principle of the effectiveness of CAV-2 in mucopolysaccharidosis type VII and Parkinson's disease.

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STARTING DATE	under negotiation
DURATION	48 months
PROJECT WEBSITE	to be developed

CHERISH

Improving Diagnoses of Mental Retardation in Children in Central Eastern Europe and Central Asia through Genetic Characterisation and Bioinformatics/-Statistics

CHERISH will establish an Eastern Europe and Central Asia consortium to develop a standardized approach for diagnosis of mental retardation (MR), create a large data-base of patients, identify and sequence MR genes, analyse the molecular epidemiology of MR in Eastern European populations, and increase awareness on the possible genetic origin of MR and implications for novel therapeutic strategies. This will help reducing the health care costs and improving quality of life of the concerned population.

COORDINATOR	Prof. Giovanni Romeo University of Bologna U.O. Genetica Medica Bologna, Italy
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STARTING DATE	under negotiation
DURATION	36 months
PROJECT WEBSITE	to be developed

CISSTEM

Cis-regulatory logic of the transcriptional control in neural stem cells

Understanding the cellular and molecular biology of neural stem cells (NSCs) is crucial to be able to use them as therapeutic tools. CISSTEM takes advantage of new computational and experimental tools to address the specification and maintenance of NSCs at the transcriptional/epigenetic level. It is designed to unravel the basic principles of gene regulation in NSC. Intermediate objectives of this project are the prediction of relevant elements and the identification of the temporal, spatial and quantitative activities of predicted conserved regulatory motifs associated with NSC expressed genes.

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STARTING DATE	under negotiation
DURATION	36 months
PROJECT WEBSITE	to be developed

DIAMARK

Sensory and biomechanical markers in Diabetic Neuropathy of the gut. Basic investigations and new approaches for treatment

DIAMARK is focused on analysing the pathophysiology of diabetic neuropathy and to determine better biomarkers of the complications and approaches for intervention. Due to lack of standardisation, there are no accepted biomarkers to evaluate the neuropathy and its involvement in the gastrointestinal tract (GI). This project will develop better biomarkers for GI neuropathy and associated complications, test the reliability and validity under controlled circumstances using advanced multimodal methods and follow the biomarkers during new treatments.

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STARTING DATE	under negotiation
DURATION	36 months
PROJECT WEBSITE	to be developed

DOPAMINET

Molecular networks of dopaminergic neurons in chordates

The selective degeneration of midbrain dopaminergic neurons is believed to be the primary cause for disruption of the ability to control movements. This project will identify and compare gene regulatory networks of protein coding genes, non-protein-coding genes and cis-regulatory elements within dopaminergic neurons in three chordate organisms (Mouse, Zebrafish and Ciona). Cis-regulatory elements in key genes in dopaminergic neurons will be predicted and screened utilizing high throughput screening in zebrafish. Deciphering the basic networks of dopaminergic neurons will generate novel diagnostic and therapeutic candidates.

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STARTING DATE	under negotiation
DURATION	36 months
PROJECT WEBSITE	to be developed

EuroV1sion

Imaging function and dysfunction of neuronal circuits in the visual cortex

The project aims to understand the dynamics of the structural and functional organization of the visual cortex using chronic *in vivo* two photon imaging of Ca^{2+} responses in the visual cortex. It will study how experience changes firing properties of individual neurons, how binocular experience leads to recovery from amblyopia, and the molecular and cellular mechanisms that restrict plasticity in the adult visual system. This understanding will contribute to improved treatment of amblyopia and development of plasticity based approaches for curing disorders of the CNS.

COORDINATOR	Dr. Christiaan Levelt Royal Netherlands Academy of Arts and Sciences (KNAW) Netherlands Institute for Neuroscience (NIN) Amsterdam, The Netherlands
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STARTING DATE	under negotiation
DURATION	60 months
PROJECT WEBSITE	to be developed

mdDANEURODEV

Molecular coding and subset specification of dopamine neurons generating the meso-limbic and nigro-striatal system

The project aims to elucidate the molecular coding of meso-diencephalic dopaminergic (mdDA) neurons forming the complex meso-limbic and nigro-striatal dopaminergic system in the vertebrate central nervous system. The consortium gathers the expertise on early and late development, cross species molecular-coding conservation, migration and axonal pathfinding to capture the significance of the understanding of mdDA neuronal development to generate a real advance in clinical understanding and treatment of mdDA pathology.

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STARTING DATE	under negotiation
DURATION	36 months
PROJECT WEBSITE	to be developed

Mitotarget

Mitochondrial dysfunction in neurodegenerative diseases: towards new therapeutics

Mitotarget aims at better understanding the link between mitochondrial dysfunction with neuronal degeneration. The project will provide a more comprehensive insight into the mechanisms leading to mitochondrial impairments and establish their clinical relevance in a severe orphan neurodegenerative disease, Amyotrophic Lateral Sclerosis (ALS). A new class of therapeutic agent targeting underlying mitochondrial dysfunction in neurons or their supporting cells may therefore emerge, in support with a potential to discover new drugs for neurodegenerative diseases.

COORDINATOR	Dr. Rebecca Pruss Trophos S.A. Marseille, France
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STARTING DATE	under negotiation
DURATION	36 months
PROJECT WEBSITE	to be developed

MOLPARK

Molecular mechanisms of neuronal restoration: novel approaches for Parkinson's disease

MOLPARK aims to define the basic cellular and molecular mechanisms underlying the generation, differentiation, survival and connectivity of nigrostriatal dopaminergic neurons and translate this knowledge into radically new therapeutic strategies for Parkinson's disease (PD). MOLPARK wants to define mechanisms: 1) of stem cell self-renewal, differentiation and integration, 2) sustaining dopaminergic neuron survival in health and disease, 3) promoting the growth of DA nigrostriatal axons and dendrites, 4) sustaining the synaptic connections of dopaminergic neurons.

COORDINATOR	Prof. Alun Davies Cardiff University School of Biosciences Cardiff, UK
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EC CONTRIBUTION	€3 472 657
STARTING DATE	under negotiation
DURATION	36 months
PROJECT WEBSITE	to be developed

NEUGENE

Advanced gene therapy tools for treatment of CNS-specific disorders

NEUGENE will develop Adeno-associated virus (AAV) and Lentivirus (LV)-based tools for targeted and regulated gene transfer into different populations of CNS cells, with three major goals: 1) targeting gene transfer vectors to specific populations of neurons and glia, 2) tight control over expression levels of therapeutic genes, and 3) establishing the safety of the novel vector tools. NEUGENE will then verify the functional efficacy of the novel CNS gene transfer tools in a well-established animal model of Parkinson's Disease.

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STARTING DATE	under negotiation
DURATION	36 months
PROJECT WEBSITE	to be developed

NEURO.GSK3

GSK-3 in neuronal plasticity and neurodegeneration: basic mechanisms and pre-clinical assessment

Formation of excitatory synapses on dendritic spines depends on dynamic interactions of microtubuli and actin-filaments that are also controlled by kinases. Deterioration of these processes is thought to cause the cognitive decline in normal ageing as well in dementia. Protein tau is a microtubule associated protein and GSK-3 kinases are proposed as the major tau-kinases *in vivo*. This project will explore the GSK-3 kinases *in vivo* by manipulating their activity genetically, pharmacologically and biochemically in pre-clinical models for dementia that have tauopathy as essential pathogenic component.

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STARTING DATE	under negotiation
DURATION	36 months
PROJECT WEBSITE	to be developed

NEUROPRO

Oligopeptidase inhibitors in brain function and dysfunction: towards new therapeutic strategies for neuroprotection

Recent evidence points to a role of prolyl oligopeptidase (PREP) in brain function and dysfunction. NEUROPRO aims at: 1) unravelling the biological role of PREP and PREPlike proteins in neuropathology, 2) determining the mode of action of PREP inhibitors and 3) firmly establishing their therapeutic potential. The final goal is to obtain proof of concept that PREP inhibition is a valid therapeutic target which will ultimately lead to new methods for the early detection, prevention or restoration of PREP-related neurodegeneration.

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EC CONTRIBUTION	€4 788 220
STARTING DATE	under negotiation
DURATION	48 months
PROJECT WEBSITE	to be developed

NeuroXsys

Genomic regulatory systems of human X-linked neurological diseases

NeuroXsys will generate regulatory maps and models of the human X chromosome based on evolutionary conservation, with special attention to genes and regions implicated in X-linked neurological diseases. Vertebrate chromosomes are subdivided into domains of genomic regulatory blocks (GRBs) and NeuroXsys proposes to map all GRBs on the X chromosome through bioinformatic approaches, extract gene regulatory sequences, and model their activity through transgenic reporter assays in the zebrafish juvenile and adult brain. The project will publish an online database that achieves correlation of disease genes.

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STARTING DATE	under negotiation
DURATION	36 months
PROJECT WEBSITE	to be developed

NMD-CHIP

Development of targeted DNA-chips for high throughput diagnosis of neuromuscular disorders

Due to genetic and clinical heterogeneity, current diagnostics of Inherited Neuromuscular Diseases (NMD) requires extensive clinical examination, as well as molecular and genetic tests. DNA chips can provide reliable diagnosis tools for sequencing NMD genes, in a time and cost effective way. The project will: i) design and validate a DNA Chip for sequencing genes responsible for 4 inherited NMDs, and ii) use the DNA Chip technology to identify new genes/mutations involved in these inherited NMD and increase the molecular diagnosis/patients ratio.

COORDINATOR	Dr. Nicolas Levy Faculté de Médecine de la Timone Génétique Médicale et Développement Marseille, France
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STARTING DATE	under negotiation
DURATION	36 months
PROJECT WEBSITE	to be developed

PLASTICISE

Promotion of plasticity as a treatment for neurodegenerative conditions

This project builds on the concept is that restoration of the function in neurodegeneration can be achieved through plasticity (the formation of new functional connections, withdrawal of inappropriate connections, modulation of synaptic strength). Plasticity-promoting treatments could therefore be beneficial in a wide range of conditions that damage the CNS. It is believed that treatments that enhance plasticity will become one key medication to improve neurological function in the damaged human nervous system.

COORDINATOR	Prof. James Fawcett University of Cambridge Cambridge Centre for Brain Repair Cambridge, UK
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STARTING DATE	under negotiation
DURATION	48 months
PROJECT WEBSITE	to be developed

PsychCNVs

Copy number variations conferring risk of psychiatric disorders in children

De novo copy number variants (CNVs) are seen in autistic patients, and rare chromosomal aberrations are known to account for a small fraction of schizophrenia and bipolar disorder. The PsychCNVs consortium will apply oligonucleotide arrays for the large-scale interrogation of CNV variation in the human genome, focusing on people with autism and childhood onset schizophrenia and bipolar disorder, where CNVs are likely to be more common. The genetic risk conferred by CNVs will be estimated by genotyping samples from 2800 patients, to identify de novo or recent spontaneous mutations.

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STARTING DATE	under negotiation
DURATION	36 months
PROJECT WEBSITE	to be developed

REPLACES

Restorative plasticity at corticostriatal excitatory synapses

Long-term synaptic plasticity is widely expressed at excitatory synapses throughout the brain and has been described at corticostriatal connections, at which they might underlie motor-skill learning, cognitive performance and reward mechanisms. REPLACES will explore basic mechanisms of brain plasticity and repair and translate the new generated knowledge into novel restorative therapeutic approaches. The long-term efficacy of new treatments for Parkinson's disease will depend on their ability to restore the synaptic wiring of striatal neurons and physiological synaptic plasticity.

COORDINATOR	Prof. Paolo Calabresi Fondazione Santa Lucia Rome, Italy
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EC CONTRIBUTION	€4 219 766
STARTING DATE	under negotiation
DURATION	48 months
PROJECT WEBSITE	to be developed

RETICIRC

Circuit specific approaches to retinal diseases

The RETICIR project focuses on neuronal mechanisms of vision from photoreceptor level to visual cortex. This project aims at understanding the structure and function of specific retinal circuits to find therapies to retinal diseases like retinitis pigmentosa. Specific circuits will be studied with cell type specific promoters. A combination of *in vivo* marked cell types and genetic interference with the function of these cells and state of the art physiological and behavioral approaches will be used.

COORDINATOR	Dr. Maarten Kamermans Royal Netherlands Academy of Arts and Sciences (KNAW) Netherlands Institute for Neuroscience (NIN) Amsterdam, Netherlands
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EC CONTRIBUTION	€2 250 000
STARTING DATE	under negotiation
DURATION	36 months
PROJECT WEBSITE	to be developed

SchizDX

Minimally invasive, tools & technologies for high-throughput, low-cost molecular assays for the early diagnosis of schizophrenia and other psychiatric disorders

There is a clinical need for empirical diagnostic tests for high throughput screening of biological fluids that would enable early and accurate diagnosis of schizophrenia and related disorders. This project will identify biomarkers and develop a diagnostic assay panel/tool to help in the identification of disease sub-types, aid in predicting and monitoring treatment response and compliance, and identify novel drug targets.

COORDINATOR	Dr. George McAllister Psynova Neurotech Cambridge, United Kingdom
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EC CONTRIBUTION	€2 757 691
STARTING DATE	under negotiation
DURATION	36 months
PROJECT WEBSITE	to be developed

Select-and-act

The role of striatum in selection of behaviour and motor learning - neuronal code, microcircuits and modelling

The goal of this project is to define the cellular and network organisation underlying decision-making by analysing the microcircuitry of subpopulations of striatal neurons concerned with the control of different patterns of behaviour. Neuronal function and synaptic interaction at the microcircuit level will be studied experimentally and the outcome will be subjected to a detailed computer modelling. Plasticity underlying motor learning/synaptic plasticity will also be characterized.

COORDINATOR	Prof. Sten Grillner Karolinska Institutet Department of Neuroscience Stockholm, Sweden
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EC CONTRIBUTION	€2 500 000
STARTING DATE	under negotiation
DURATION	36 months
PROJECT WEBSITE	to be developed

COORDINATION AND SUPPORT ACTIONS

EUROMEMO

First European meeting on molecular and cellular cognition

The Molecular and Cellular Cognition Society (MCCS – www.molcellcog.org) was established in 2002 as a European forum for the development of molecular and cellular approaches to study cognition, emotion and behaviour, and with the aims to facilitate exchanges between laboratories and to promote neuroscience at the general public level. EUROMEMO has supported the organisation of the first European Meeting of MCCS, as a satellite of the Federation of European Neuroscience Societies (FENS) meeting in July 2004.

COORDINATOR	**Dr. Riccardo Brambilla** **Centro San Raffaele del Monte Tabor** **DIBIT** **Milan, Italy**
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EC CONTRIBUTION	**€19 650**
STARTING DATE	**01/06/2003**
DURATION	**18 months**
PROJECT WEBSITE	**http://www.molcellcog.org/**

ESNI course 2003

European School of Neuroimmunology (ESNI); 4th Teaching Course – Barcelona

The European School of Neuroimmunology (ESNI) has been established as a European framework for continuous educational programmes in neuroimmunology, to promote high-quality neuroimmunological research and foster trans-national collaboration throughout Europe. The 4th ESNI was conceived to be a contact forum between senior and junior researchers, between basic and clinical research, building a trans-European network.

COORDINATOR	**Prof. Nils Erik Gilhus** **Haukeland University Hospital** **Department of Neurology** **Bergen, Norway**
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EC CONTRIBUTION	**€50 000**
STARTING DATE	**01/07/2003**
DURATION	**10 months**
PROJECT WEBSITE	**http://www.esni.org/**

SYMBIONIC

Towards European Neuronal Cell Simulation: a European consortium to integrate the scientific activities for the creation of a European Alliance devoted to the complete in-silico model of a Neuronal Cell

Symbionic pulls together scientists working in cellular and molecular neurobiology and neurophysiology, functional genomics, proteomics, bioinformatics, biophysics and computational biology to tackle the issue of the Systems Biology of a Neuronal Cell. System biology data from proteomics and genomics will allow the design of an in silico virtual cell, a model that may contribute to a rational design of drugs for human neurodegenerative diseases.

COORDINATOR	Dr. Ivan Arisi Lay Line Genomics S.p.A. Rome, Italy
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EC CONTRIBUTION	€200 000
STARTING DATE	01/11/2003
DURATION	24 months
PROJECT WEBSITE	http://www.symbionicproject.org/

FENS Forum 2004

4th Forum of European Neuroscience

The 4th Forum of European Neuroscience, held in Lisbon on 10-14 July 2004, was one of the largest European meetings in the field of basic and clinical neuroscience. Topics addressed ranged from genes and molecules implicated in brain function and dysfunction, to the physiopathology and therapy of diseases with a special emphasis on translational science. The Forum included nine plenary and 12 special lectures, 56 symposia, seven technical workshops and approximately 3000 poster presentations from over 4500 participants.

COORDINATOR	Prof. José Castro-Lopes Faculdade de Medicina do Porto Instituto de Histologia e Embriologia Porto, Portugal
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STARTING DATE	01/01/2004
DURATION	15 months
PROJECT WEBSITE	http://www.fens2004.org/

NeuroDisseminator

Neuroimaging laboratories sharing data through a database

The NeuroDisseminator project aims at creating functional maps of the human cerebral cortex by collecting an elevated number of PET and fMRI studies and analysing them in a homogenous way. The studies are provided by collaborating laboratories in Europe, and the statistical results are stored on a database distributed on DVD to all contributors.
The NeuroDisseminator project now aims at increasing the number of studies in the NeuroGenerator database and distributing the database to the collaborators. Another goal is to perform research and develop ideas regarding meta-analysis of these studies.

COORDINATOR	**Prof. Per Roland Karolinska Institute Department of Neuroscience Stockholm, Sweden**
EMAIL	**per.roland@neuro.ki.se**
EC CONTRIBUTION	**€400 000**
STARTING DATE	**01/01/2004**
DURATION	**36 months**
PROJECT WEBSITE	**http://www.neurogenerator.org/**

RABRE

Resource allocation to brain research in Europe

RABRE aims to investigate the funding resources for brain research in Europe and assess the potential benefits and costs related to neuroscience of further efforts for brain research in Europe in the future. Both private funding and public funding will be analysed and divided into categories according to function or disease target. A comparison of the results will be made across countries within Europe, as with the USA and Japan. The results shall be compared with studies in other areas to indicate the best possible use of funding allocation in future.

COORDINATOR	**Prof. Jes Olesen Glostrup Hospital Department of Neurology Copenhagen, Denmark**
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EC CONTRIBUTION	**€300 000**
STARTING DATE	**01/01/2005**
DURATION	**18 months**
PROJECT WEBSITE	**http://www.ebc-eurobrain.net/**

DB workshop

Databasing the brain

The workshop brought together established scientists in the field of brain databasing, expert neuroscientists, representatives of SMEs, and journal editors with the objective of accelerating existing research and development efforts in the field of neuroscience databasing that will facilitate data sharing, tools sharing and integration of multiple categories of data from the brain. The workshop focused on standardised data formats and annotations of data at the level of the laboratory workbench and the role of journals in providing information about databasing initiatives, and encouraging scientists to share persistent data via databases.

COORDINATOR	Prof. Jan G. Bjaalie Centre for Molecular Biology and Neuroscience University of Oslo Oslo, Norway
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EC CONTRIBUTION	€77 400
STARTING DATE	01/10/2005
DURATION	18 months
PROJECT WEBSITE	http://www.nesys.uio.no/Workshop2006/

ENINET

Network of European Neuroscience Institutes

This network formed by fifteen major European Neuroscience Institutes (ENIs) is dedicated to the promotion of the independent work of young investigators. The institutes supply laboratory space, infrastructure, a nurturing environment and other support, enabling young investigators to build small research teams and to perform independent work. The network promotes interaction among Young Investigator Groups by providing funds for organising regular meetings, exchanging students and sharing expertise, as a means of fostering collaborations and integrating research between participants.

COORDINATOR	Prof. Erwin Neher Max Planck Institute for Biophysical Chemistry Göttingen, Germany
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EC CONTRIBUTION	€1 282 500
STARTING DATE	01/11/2005
DURATION	36 months
PROJECT WEBSITE	http://www.eni-net.eu/

PNS-EURONET2

Paraneoplastic Neurological Syndromes (PNS): strengthening the European Network

Paraneoplastic Neurological Syndromes (PNS) are severe disorders of the nervous system that arise as remote effects of neoplasia. Their diagnosis permits early tumour detection. PNS-EURONET2 is a network of reference centres that created a common database for the standardised collection of PNS patients' data and a central sample bank, and published guidelines on PNS diagnosis. The information collected in the database are used to set up multicentric prospective clinical trials, obtain epidemiological data and update guidelines.

COORDINATOR	**Dr. Bruno Giometto Hospital of Treviso U.O. Neurologia Treviso, Italy**
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EC CONTRIBUTION	**€475 000**
STARTING DATE	**01/01/2006**
DURATION	**36 months**
PROJECT WEBSITE	**http://www.pnseuronet.org/**

INCF

International Neuroinformatics Coordinating Facility

The 'International Neuroinformatics Coordinating Facility' (INCF) has been created to support the development of neuroscience data and knowledge bases, together with computational models and analytical tools, for the sharing, integration and analysis of experimental data and the advancement of theories of neural function. This project is to promote the INCF objectives by organising small workshops in different neuroinformatics (NI) areas, making an inventory of all NI resources available in Europe and analysing the most efficient way to develop NI training programmes.

COORDINATOR	**Prof. Sten Grillner Karolinska Institutet Department of Neuroscience Stockholm, Sweden**
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EC CONTRIBUTION	**€500 000**
STARTING DATE	**01/01/2007**
DURATION	**36 months**
PROJECT WEBSITE	**http://www.incf.org/**

BID

Brains in Dialogue: Brain Science at the service of European citizens

The main goal of the project is to build an effective dialogue among key-stakeholders (scientists, clinicians, pharmaceutical companies, health operators, patients' associations and experts in ethics, legal and social issues) in Brain Science, in particular in Predictive Medicine, Brain Imaging and Brain Machine Interfaces. To this end, a press office and a website will be established, and series of workshops and open forums will be organized to produce and disseminate accurate scientific information on the state of the art, the promises and the risks, and to discuss the associated ethical and social issues.

COORDINATOR	Prof. Vincent Torre International School for Advanced Studies (SISSA) Neurobiology Sector Trieste, Italy
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EC CONTRIBUTION	€497 688
STARTING DATE	01/03/2008
DURATION	36 months
PROJECT WEBSITE	to be developed

EuroVisionNet

Visual impairment and degeneration: a road-map for vision research within Europe

EuroVisionNet aims to link the research activities and policies of the European vision research community and promote integration by bringing together the major scientific actors in visual impairment and degeneration research field, facilitating the multidisciplinary exchange of information and initiating a discussion on future activities. It will address the needs of the European vision community by policies and guidelines. Workshops and conferences on the ageing eye will facilitate communication and collaboration between private and public sector stakeholders.

COORDINATOR	Dr. Thomas H. Wheeler-Schilling European Vision Institute – EEIG Brussels, Belgium
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EC CONTRIBUTION	€774 680
STARTING DATE	01/03/2008
DURATION	48 months
PROJECT WEBSITE	to be developed

AHEAD III

Assessment of hearing in the elderly: ageing and degeneration - integration through immediate intervention

AHEAD III has been specifically designed to provide evidence of the effects of hearing impairment in adults and particularly in the elderly, analyse costs associated with the implementation of integrated large scale programmes of hearing screening and intervention in the elderly, provide quality standards and minimum requirements for screening methods and related diagnostic techniques and develop guidelines and recommendations on how to implement successful screening programmes to be tuned to the local, social, and economical conditions of a country.

COORDINATOR	**Prof. Ferdinando Grandori Politecnico di Milano Centro di Ingegneria Biomedica Milano, Italy**
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EC CONTRIBUTION	**€1 088 250**
STARTING DATE	**01/05/2008**
DURATION	**36 months**
PROJECT WEBSITE	**to be developed**

European Commission

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