With an incidence of 400 new cases each year per 100000 inhabitants and a mortality rate of 20%, ischemic brain injury (stroke, trauma, cardiac arrest) is the second leading cause of death and the first cause of permanent disability in industrialized countries. Yet, most stroke cases are not medically treated and most of the therapies now available are either not effective or can be applied to only a small percentage of patients reaching the stroke unit. Discoveries of the past three decades have led to the unifying "excitotoxic" glutamate-mediated pathogenesis of post-ischemic neuronal death that, unfortunately, failed to translate into effective therapeutics. In fact, clinical trials testing NMDA antagonists, calcium channel blockers, spin traps for free radical scavenging, etc., in stroke, have all failed. The causes for these disappointing results should be looked for in the complex, often dual, role (both deleterious and beneficial) of biological mediators identified as important players of the excitotoxic cascade.

Rescuing the peripheral tissue of the penumbra, where active death mechanisms are recruited and proceed more slowly than in the core, might widen the therapeutic window for intervention. In the penumbra, tissue damage evolution is strongly affected by neuroinflammatory events that involve soluble mediators (e.g. IL-1β), enzymes (e.g. MMPs) and specialised cells activated locally (e.g. astrocytes and microglia) or recruited from the periphery (e.g. neutrophils, dendritic cells, lymphocytes). An integrated modulation of these responses may represent an innovative approach to limit the evolution of ischemic brain damage.

Thus, the workshop highlights recent discoveries from basic research aimed at the selection and validation of novel drug targets for stroke therapy. By strengthening the link between basic and clinical research the speakers will overcome the complexity of the experimental (pre-clinical and clinical) settings to promote the rapid translation of new drug applications into clinical practice.

UNIVERSITY OF CALABRIA

DEPARTMENT OF PHARMACOBIOLOGY

PhD COURSE IN PHARMACOLOGY AND BIOCHEMISTRY OF CELL DEATH
PhD COURSE IN CELLULAR BIOCHEMISTRY AND DRUG ACTIVITY IN ONCOLOGY

SCENT
STROKE CENTRE AND EMERGENCY NEUROLOGY TRUST

Stroke: target validation and clinical R&D of novel neurotherapeutics

Parghelia (VV)
30 September – 1 October 2011

Presidents
G. Bagetta (Cosenza, Italy)
G. Micieli (Pavia, Italy)

Under the auspices of
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University Consortium for Adaptive Disorders and Headache (UCADH)

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Organized in the frame of the
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Scientific Programme

30th September

17:45 **Welcome address**

MRP Pino Gentile
Vice President of Calabria Region

18.00 **Dr. Massimo Casciello**
General Director Health Research, Ministry of Health (Rome)

18:15 **Opening invited lecture**

Chairperson: ***Giuseppe Nappi***

"Recent discoveries in neuronal death mechanisms" ***Pierluigi Nicotera***

19:00 *Welcome cocktail*

1st October

New trends in stroke research

Chairperson: ***Pierluigi Nicotera***

9:00 "Reappraisal of 20 years of clinical trials failure for drugs targeting acute, detrimental, mechanisms in stroke" ***Rossella Russo***

9:30 "Target selection and validation for pharmacological rescue of the penumbra: from neuroinflammation to the development of a novel therapeutic" ***Diana Amantea***

10:30 "Molecular mechanisms of an unconventional drug for experimental stroke" ***Michelangelo Certo***

11:00 *Coffee break*

Translational aspects of stroke research

Chairperson: ***Domenico Consoli***

11:30 "Bridging care to research in the stroke unit" ***Anna Maria Cavallini***

12:00 "Proposal for a stroke clinical trial" ***Giacinto Bagetta***

Closing lecture

12:30 "Open health care issues in the management of acute ischemic stroke" ***Giuseppe Micieli***