

Satellite conference of the
7th FENS Forum of
European Neuroscience

GABA SIGNALLING & BRAIN NETWORKS

CNCR Amsterdam
30th June - 2nd July 2010

CHAIR SCIENTIFIC PROGRAM COMMITTEE

Yehezkel Ben-Ari (INMED – France)

Y. Ben-Ari (FR)	L. Maffei (It)
H. Bergman (Il)	P.J. Magill (GB)
A. Bordey (USA)	H. Mansvelder (NL)
R. Cossart (FR)	J. Parnavelas (GB)
A. Destexhe (FR)	O. Paulsen (GB)
GK. Fishell (USA)	C. Petersen (CH)
R. Guerrini (It)	P. Rakic (USA)
C. Hammond (FR)	O. Reiner (Il)
J. Huang (USA)	A. Represa (FR)
J. Isaac(USA)	M. Scanziani (USA)
P. Jonas (G)	E. Sernagor (GB)
R. Khazipov(FR)	C. Shatz (USA)
T. Klausberger (GB)	N. Spitzer (USA)
A. Kriegstein (USA)	T. Voigt (G)

Information:

INMED - INSERM Unité 901

163, route de Luminy - B.P. 13 - 13273 MARSEILLE Cedex 9 - FRANCE

Phone: +33 (0)4 91 82 81 42 - Fax: +33 (0)4 91 82 81 05

Email: floquet@inmed.univ-mrs.fr - <http://www.inmed.univ-mrs.fr>

INTRODUCTION

GABAergic neurons provide most of the inhibitory drive of adult networks and play major roles in the integrative properties of brain networks. Alterations of GABAergic signals are associated with major neurological disorders and GABA mimetic drugs are widely used as comfort molecules and to treat several brain disorders. Thus, the inhibitory drive is altered in epilepsies, infantile developmentally related disorders but also Parkinson disease, and anoxo-ischemic insults to just name a few. From the developmental stand point, GABAergic neurons mature before principal neurons and provide an important source of early activities and are thus instrumental in activity dependent modulation of the construction of cortical functional units.

The goal of this workshop is to bring together experts studying GABA signals at the molecular, cellular and network levels in physiological and pathological conditions and to examine the fate of GABA signals along transversal ideas linking these diverse domains. A particular emphasis is brain maturation as it is now clear that alteration of developmental sequences –notably of GABA signals- impairs brain development leading to life long deleterious neurological sequels.

Sessions will focus on a description of universal developmental sequences of brain activity and ionic currents, alterations of GABA actions during development, genetic and molecular control of GABAergic neurons, mechanisms of neuronal migration, and how migration disorders produced by genetic mutations and/or environmental hazards lead to malformations and severe long term neurological diseases. Parallel description of the physiological and pathological development of GABAergic networks in adults and developing brains are of interest to basic scientists and clinicians and this will be illustrated by this unique panel of expertise. By covering a range of commonly studied human neurological disorders and placing GABA as a link, participants will be exposed to a wide range of experimental and clinical research and will gain a unique critical estimation of its importance and its limits. We expect to attract many MD and PhD researchers and organise the meeting to facilitate interactions between these domains.

■ *Y. Ben-Ari*
Director of INMED

SCIENTIFIC COMMITTEE

Y. Ben-Ari (FR)	H. Mansvelder (NL)
N. Spitzer (USA)	A. Bordey (USA)
R. Cossart (FR)	

INVITED SPEAKERS

Y. Ben-Ari (FR)	L. Maffei (It)
H. Bergman (Il)	P.J. Magill (GB)
A. Bordey (USA)	H. Mansvelder (NL)
R. Cossart (FR)	J. Parnavelas (GB)
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ORGANISATION AND REGISTRATION

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*** [Click here to register online](#) ***

■ Deadline to register:

15th June 2010

■ Rates:

300€ faculty
200€ student
500€ for drug company members
Fee waived for Journal Editors if the journals publish a report on the meeting

*** *We offer a 75€ reduction for early registrants (prior to early March 2010)* ***

Registration includes access to the facilities, coffee breaks and lunch
Registration is on the basis of first come first served

■ Poster sessions:

2 poster sessions are programmed
2 selected young speakers will be asked to give a brief oral presentation

*** [Click here to submit your poster abstract](#) ***

Authors will be assigned poster board space (W90xH120) to display illustrative material (graphs, charts, and tables).

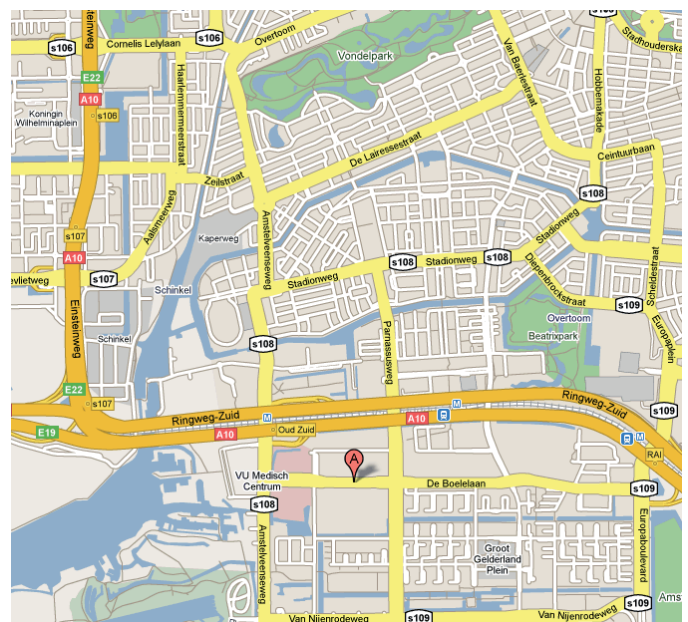
*Abstracts must include: Title, Author(s) last name and first name, Presenting author underlined, Laboratory (ies) address (es), Body text limited to 350 words.
Please use format document .doc, .rtf or .txt*

■ Conference Site:

CNCR, De Boelelaan 1085 - 1081 HV, Amsterdam

Details map at:
<http://www.cncr.vu.nl/Contact.html>

Facilities include a conference room that can accommodate up to 350 persons and all required annexes including a space for poster sessions and coffee breaks.



PROGRAM

DAY 1: Maturation

8h15-8h45 *Registration*

Introduction

8h45-9h00 Y. Ben-Ari (FR)
GABA and the rest: An introduction

Session 1 Proliferation and migration

Chair N. Spitzer (USA)

9h00-9h40 A. Bordey (USA)
GABA signals modulate neuronal production

9h40-10h20 A. Kriegstein (USA)
Excitatory actions of GABA in migration

10h20-11h GK. Fishell (USA)
The contributions of intrinsic genetic programs versus environment in the control of cortical interneuron specification and maturation.

11h-11h30 *General discussion*

11h30-13h30 *Lunch and posters*

Session 2 Developmental sequences, GABA and plasticity

Chair A. Bordey (USA)

13h30-14h10 Y. Ben-Ari (FR)
Pioneering actions of GABA signals and neurons in the developing brain

14h10-14h50 T. Voigt (G)
GABAergic neurons and development of network oscillations

14h50-15h30 R. Cossart (FR)
GABA and sequential maturation of oscillations

15h30-16h *General discussion*

16h-16h30 *Coffee break*

Session 3 early oscillations and functional units

Chair R. Khazipov (FR)

16h30-17h10 J. Huang (USA)
GABA and neurexin signaling in activity-dependent development of inhibitory circuits

17h10-17h50 E. Sernagor (GB)
Excitability in developing retinal networks: insights from maturing GABAergic inhibition

17h50-18h30 L. Maffei (It)
Enriched environment and plasticity in the mammalian visual system

18h30-19h *General discussion*

19h-19h30 *Coffee break*

General discussion

Chair N. Spitzer (USA) and Y. Ben-Ari (FR)
19h30-20h Activity dependent mechanisms in brain development

End of day

DAY 2: Network oscillations

Session 4 Early patterns functional ensembles

Chair P. Jonas (G)

9h-9h40 R. Khazipov (FR)
GABA and glutamate and early patterns in vivo

9h40-10h20 H. Mansvelder (NL)
Experience dependent plasticity in visual system development

10h20-11h C. Petersen (CH)
Synaptic mechanisms of sensory perception'

11h-11h30 General discussion

11h30-13h30 Lunch and posters

Session 5 Intrinsic properties

Chair A. Destexhe (FR)

13h30-14h10 M. Scanziani (USA)
Coordinating excitation with inhibition in space and time

14h10-14h50 J. Isaac (USA)
Mechanisms of experience-dependent integration of feed forward inhibition in barrel cortex

14h50-15h30 P. Jonas (G)
The 'in' and 'out' of hippocampal GABAergic interneurons

15h30-16h General discussion

16h-16h30 Coffee break

Session 6 GABA in adult cortical networks

Chair M. Scanziani (USA)

16h30-17h10 T. Klausberger (GB)
GABAergic interneurons in cortical network operations

17h10-17h50 O. Paulsen (GB)
Control of network synchrony by GABAergic interneurons.

17h50-18h30 A. Destexhe (FR)
Excitatory and inhibitory conductance dynamics in cortical neurons during the wake-sleep cycle and in dynamic-clamp experiments

18h30-19h General discussion

19h-19h30 Coffee break

General discussion

Chairs O. Paulsen (GB) and P. Jonas (G)

19h30-20h Intrinsic properties, cortical networks and oscillations

End of day

DAY 3 : GABA signals and brain disorders

Session 8 Parkinson

Chair O. Paulsen (GB)

9h00-9h40 P.J. Magill (GB)
Disturbed network activities of GABAergic basal ganglia projection neurons in Parkinsonism

9h40-10h20 C. Hammond (FR)
GABAergic interneurons generate oscillations in the dopamine-depleted striatum

10h20-11h00 H. Bergman (II)
Correlation studies of the basal ganglia GABAergic network in normal and dopamine depleted subjects

11h-11h30 General discussion

11h30-13h30 Lunch and young speakers presentation

Session 9 Genetic disorders and development

Chair A. Represa (FR)

13h30-14h10 J. Parnavelas (GB)
The roles of Doublecortin and ARX in cortical interneuron migration

14h10-14h50 R. Guerrini (It)
ARX gene mutations, GABA and pleiotropy

14h50-15h30 O. Reiner (II)
Mutations in the PAFAH complex affect GABAergic neurons

15h30-16h General discussion

16h-16h30 Coffee break

Session 10 as an end note

Chair Y. Ben-Ari (FR)

16h30-17h10 C. Shatz (USA)
Critical periods, homeostasis and a role for MHC Class I molecules

17h10-17h50 P. Rakic (USA)
Species specific features of GABAergic neurons development

17h50-18h30 N. Spitzer (USA)
Molecular mechanism integrating genetic and calcium-dependent neurotransmitter specification

18h30-19h General discussion

19h-19h30 Coffee break

Final discussion

Chair P. Rakic (USA) and Y. Ben-Ari (FR)

19h30-20h Selected questions from students and final discussion

End of meeting