

Multiple facets of GABA in brain development

16th October 2009

*

Prentice Women's hospital

Address

250 E superior street or corner of Chicago avenue and Fairbanks court

Chair Scientific Program Committee

Yehezkel Ben-Ari
INMED – France

Informations

INMED - INSERM Unité 901
163, route de Luminy - B.P. 13
F-13273 MARSEILLE Cedex 9
FRANCE

Phone: +33 (0)4 91 82 81 03

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

www.inmednet.fr/chicago

Introduction

GABA signals play major roles in brain maturation including in cell proliferation, neuronal migration, specification of phenotype, generation of early patterns that condition the construction of functional units and early forms of plasticity that control synapse formation and neuronal growth. Genetic fate techniques have enabled to identify how various subtypes of interneurons are generated, how they migrate and identify the molecules that control the process. GABAergic interneurons also develop before principal cells in many brain regions and provide the first patterns that immature networks generate. Neurons and networks are subject to a series of developmental sequences including a shift of GABA actions from excitation to inhibition and synchronous patterns that shift progressively to engage cell assemblies programmed to form cortical functional units. GABAergic signals and synapses are also subject to multiple forms of plasticity that are instrumental in the trophic actions of GABA. Finally alterations of these signals by genetic mutations and/or environmental hazards lead to malformations associated with dramatic neurological syndromes. We shall present up to date information on these events and the conceptual implications of studies on GABA in a more general perspective of the neurobiology of development.

Y. Ben-Ari
Director of INMED

Registration and general organisation

Rates:

\$70 advance faculty

\$50 advance student

\$100 on-site for faculty

\$70 on-site for students

Registration can be alleviated for students of southern less developed countries

Registration includes access to the meeting, information, coffee breaks and lunch box

Site: the prentice women's hospital

<http://www.nmh.org/nmh/hospitalguide/map.htm>

Organisation and registration

INMED , Campus scientifique de Luminy, BP13, 13273 Marseilles cedex 09

France..

phone +33491828103

Fax: +33491828105

Website and registration :

www.inmednet.fr/chicago

[Mail address: chicago@inmed.univ-mrs.fr](mailto:chicago@inmed.univ-mrs.fr)

;

Program

8h30-9h00 Registration

Chair: A Kriegstein

9h00-9h30 Yehezkel Ben-Ari (FR)

Introduction: basic rules of maturation of GABAergic signals

9h30-9h40 Discussion

9h40-10h10 Angelique Bordey(USA)

GABA signals modulate neuronal production

10h10-10h20 Discussion

10h20-10h50 John LR Rubenstein(USA)

Molecular insights on migration of GABAergic interneurons

10h50-11h00 Discussion

11h00-11h10 Coffee break

Chair A Bordey

11h10-11h40 Gordon K Fishell (USA)

Genetic determinants of GABAergic interneurons phenotypes

11h40-11h50 Discussion

11h50-12h20 Zoltan Molnar (GB)

The earliest circuits in the cortex

12h20-12h30 Discussion

12h30-13h15-Lunch

Chair: JL Rubenstein

13h15-13h45 Arnold Kriegstein (USA)

Excitatory actions of GABA in circuit formation

13h45-13h55 Discussion

13h55-14h25 JG Parnavelas

The role of Slit/Robo signalling in cortical interneuron migration.

14h25-14h35 Discussion

14h35-15h05 Nick Spitzer(USA)

GABA Specification in the Embryonic CNS: Genes, Activity and Target-Derived Factors.

15h05-15h15 Discussion

15h15-15h30 Coffee break

Chair: N Spitzer

15h30-16h00 Mu-Ming Poo (USA)

Plasticity of GABAergic synapses in developing networks

16h00-16h10 Discussion

16h10-16h40 Josh Huang(USA)

Activity dependent regulation of GABAergic synapses during development

16h40-16h50 Discussion

16h50-17h20 Rosa Cossart (FR)

GABA and sequential maturation of oscillations

17h20-17h30 Discussion

17h30-17h45 Coffee break

Chair: Y Ben-Ari

17h45–18h15 Enrico Cherubini (IT)

GABAergic signalling at MF-CA3 synapses

18h15–18h25 Discussion

18h25–18h55 Rustem Khazipov (FR)

GABA and early patterns in vivo

18h55–19h05 Discussion

19h05–19h35 Kevin Staley (USA)

GABA and seizures in the developing brain

19h35–19h45 Discussion

End of meeting