

**5<sup>th</sup> INTERNATIONAL MEETING  
STEROIDS AND NERVOUS SYSTEM**



Royal Palace of Stupinigi - 2007 photo by G.C. Panzica

**TORINO, Italy**  
**Villa Gualino**

**February 13 - 18, 2009**

**FINAL PROGRAM**



## **CONFERENCE ORGANIZED WITH THE SUPPORT OF**

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- **Università degli Studi di Torino**
- **Università degli Studi di Milano**
- **Dipartimento di Anatomia, Farmacologia e Medicina Legale**
- **Centro Rita Levi Montalcini, Torino**
- **Center of Excellence on Neurodegenerative diseases, Milano**
- **Neuroscience Institute of Turin (NIT)**
- **Italian Neuroscience Institute (INN)**
- **Gruppo Italiano di Scienze Neuroendocrine (GISNe)**
  
- **International Brain Research Organization (IBRO)**
- **Società Italiana di Neuroscienze**
- **National Science Foundation**
- **International Neuroendocrine Federation**
  
- **EUROCLONE**
- **Nikon, Italy**
- **Vinci Biochem, Italy**
  
- **Elsevier Publisher**
- **Karger Publisher**
- **Informa Healthcare**
- **Wiley-Blackwell**

**Organizers**

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Roberto C. Melcangi *(Milano, Italy)*  
GianCarlo Panzica *(Torino, Italy)*

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**International Scientific Committee**

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Jacques Balthazart	Belgium
Luis M. García-Segura	Spain
Allan E. Herbison	New Zealand
Margaret McCarthy	USA
Roberto C. Melcangi	Italy
GianCarlo Panzica	Italy

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**Local Organizing Committee**

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Aldo Fasolo  
Carla Viglietti Panzica  
Elisabetta Bo  
Silvia Giatti  
Stefano Gotti  
Daniela Grassi  
Mariangela Martini  
Désirée Miceli  
Marzia Pesaresi

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**Educational Committee**

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Cheryl A. Frye  
Guy Mensah-Nyagan

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**Honor Committee**

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Ezio Pelizzetti	Rector of the University of Torino
Alberto Conte Adalberto Merighi	Dean of the Faculty of Science President of the Research Committee of the University of Torino
Ferdinando Rossi	President of the Neuroscience Institute of Turin (NIT)

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**MEETING SECRETARIAT**

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Prof. GianCarlo Panzica  
Dipartimento di Anatomia, Farmacologia e Medicina Legale  
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**MEETING WEBSITE**

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<http://www.dafml.unito.it/anatomy/panzica/neurosteroids/index.html>

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**MEETING LOCATION**

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Villa Gualino  
viale Settimio Severo 63  
I-10133 TORINO  
Telephone +39-0116603555      Fax +39-0116603535

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## TOPICS OF THE CONFERENCE

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The international meeting on *Steroids and Nervous System* is organized to update our knowledge on the relationships among steroid hormones synthesized in different organs (including brain) and central as well as peripheral nervous system.

This is a wide research field covering different areas from molecular biology to behavior. This year the conference is focused on the following topics:

- Unexpected actions of steroid receptors regulating reproductive and social behaviors
- Gender-specific therapeutic strategies based on neuroactive steroids: in search for innovative tools for neuroprotection
- Sex differences in, and hormonal influences on, cannabinoid-regulated biology
- Steroids and pain
- Androgens and androgen receptors
- Importance of co-regulatory factors for steroid receptor action in the brain
- Estrogen-induced non-classical signaling in the brain: mechanism and role
- Vitamin D the forgotten neurosteroid
- Neurosteroids and pregnancy: long term effects on development
- Neurosteroids and GABA-A receptors
- Pathogenetic mechanisms mediated by glucocorticoid receptors in psychiatric disorders: from bench to clinics

To cover these topics the conference is organized in different satellite symposia, symposia, round tables and posters' presentation. Each symposia will run for half day and will comprise invited lectures with a few additional short communications (selected by the Organizing Committee) to complete the program.

Before the meeting, we organized a one-day conference on Hormones, Brain and Behavior.

The other contributions will be displayed in poster format.

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## CONFERENCE DESK

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A conference desk will be opened at Villa Gualino throughout the conference within the following timetable:

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|-------------|----|-------|--|
| • Saturday  | 14 | 9.00  | 12.00 (for participants at the Satellite Symposia) |
| • Saturday  | 14 | 16.30 | 18.30 (for participants at the meeting)            |
| • Sunday    | 15 | 8.30  | 15.00  |
| • Monday    | 16 | 8.30  | 15.00  |
| • Tuesday   | 17 | 8.30  | 15.00  |
| • Wednesday | 18 | 8.30  | 15.00  |

## **MEETING LOCATION**

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The conference will be held in Torino (Turin), Italy, at Villa Gualino (viale Settimio Severo 63, I-10133 TORINO), that is situated in a pleasant environment atop a hill in the town close to the Po river. All scientific sessions will take place in the Villa Gualino facility that includes a conference room seating 150 people, poster rooms, the conference desk, a restaurant, and a bar.

Villa Gualino overlooks the city of Torino but the road reaching the villa from the city is about 3-4 kms so it will not be practical to leave the conference site during the day for meals and return in time for the afternoon scientific sessions. There is a public bus service (running hourly) from Villa Gualino to downtown. A taxi service will be available on request.

Accommodation will be provided either in Villa Gualino, or in a variety of hotels located in various places in the city.

Torino is located in the northern part of Italy and therefore is easily accessible to other important cultural cities such as Firenze (Florence), Pisa, Verona and Venezia (Venice). However, these cities are located several hundred kms from Torino and several hours (4-6) of travel by train are required (good train or bus connections are available). Good connections by plane are with Roma (Rome) or with the south part of Italy. We encourage you to spend some additional time in Italy before or after the conference to visit these beautiful places, but because of time constraints we are not able to organize short excursions to these cities during the conference.

Further tourist information are available at the website of the meeting. Additional information concerning Torino and the Region Piedmont can be found on Internet at:

<http://www.comune.torino.it/>

<http://www.provincia.torino.it/>

<http://www.regione.piemonte.it/>

## PRESENTATION OF CONTRIBUTION

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### **Poster Presentation**

Posters will be on display during the entire conference from Sunday to Wednesday at 15.00. Personal discussions can be organized during the lunch time. The posters will be discussed Tuesday 17 (h 12.30-15.30); the authors will be requested to be present at least one hour at the poster board.

**Size of poster boards is 90 cm horizontal by 180 cm vertical.** Posters will have to be mounted with sticky tape. **Material for the mounting will be provided by the Congress staff during the set-up of the posters.**

### **Short Oral Communication**

A limited number of oral communications of 15 min (10 min presentation + 5 min discussion) concerning the main topics of the conference will be allowed. The presentation type is computer presentation. A computer with Windows XP and PowerPoint will be available in the conference room. You should prepare your presentation on a CD or USB pens that will be loaded on the computer. If you require additional devices (slide projectors, overhead projectors) please contact the meeting organizers at least 7 days in advance.

### **Lectures**

The program is also including a list of invited lectures (25 min presentation + 5 min discussion) and plenary lectures (45 min presentation). A computer with Windows XP and PowerPoint will be available in the conference room. You should prepare your presentation on a CD or USB pens that will be loaded on the computer. If you require additional devices (slide projectors, overhead projectors) please contact the meeting organizers at least 7 days in advance.

Speakers should give their CDs or USB pens to the projectionist at least 15 min. before the starting time of their symposium. A computer to review the slides will be available in a separate place.

## **YOUNG INVESTIGATORS PROGRAM**

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### **Poster Competition**

Posters presented by Young Investigators (those registered as students/trainees at the meeting) have the option of being judged by an ad hoc Committee constituted by the Educational Committee. Small prizes will be distributed according to the ranking determined by the Committee (prizes are offered by **Karger Publisher, Informa Healthcare and Wiley-Blackwell**). The Prizes will be a one-year subscription to one of the following journals **Brain, Behavior and Evolution, Neuroendocrinology, Journal of Neuroendocrinology and Stress**. We encourage all students who are interested in having their posters be evaluated to contact a person on the Education Committee prior to the poster session to make arrangements.

### **Young Investigator Symposium**

A limited number of oral communications of 10 min (8 min presentation + 2 min discussion) have been selected by the Scientific and Educational Committees among the contributions submitted by student registrants. These contributions will be presented during a special symposium Tuesday 17 morning.

### **International Opportunities for Young Researchers Workshop**

As for the previous meetings, this evening workshop will provide a forum to discuss opportunities in the field of research in both EU and USA for young people.

### **Students' awards**

A number of awards have been distributed to reimburse student registration fees. These awards are due to the contribution of the International Brain Research Organization (IBRO), International Neuroendocrine Federation (INF) and Società Italiana di Neuroscienze (SINS). Students from USA have been partly supported from a National Science Foundation Grant.

### **Meet The Professor Lunches (Monday)**

Trainees and their matched professor(s) should make arrangements with one another for a specific meeting place so that they may proceed to lunch together.

Payment of fees must be made in Euro (only).

Advanced payment by means of:

1. **Bank transfer** to: Banca Intesa-SanPaolo, Filiale Torino 06 (IBAN IT05 T030 6901 0061 0000 0062 049 - BIC BCITITMM) in favor of COM.ORG.INTERN.MEETING STEROIDS-NERVOUS SYSTEM (SNS09).
2. **Credit card** (VISA or MasterCard only). In this case you should fill the appropriate form, sign it and send to the meeting secretariat the original signature. Please add 10 euro to the total for credit card handling expenses.

**On site payment**, at the registration desk, **only by cash** (no credit cards, no checks, with the exception of Italian checks).

The registration fees cover the attendance to the scientific activities (symposia, poster sessions), to the opening ceremony, to the coffee breaks during the meeting. In the price of registration is also included the abstract book of the conference (additional copies must be ordered in advances). A social dinner will be organized, it is optional and its cost will be charged to those who are willing to participate (see the registration forms).

**REGISTRATION FEES (prices in Euro)**

Full registrant (including Satellite Symposia)	<b>550.00</b>
Registration for the meeting only	<b>440.00</b>
Student, full registrant (including Satellite Symposia)	<b>350.00</b>
Student, registration for the meeting only	<b>300.00</b>
Registration to Satellite Symposia only	<b>150.00</b>
One-day registration (only on site)	<b>100.00</b>
Two-day registration (only on site)	<b>170.00</b>
Additional copy of the Abstracts! Book	<b>30.00</b>
Abstracts! Book of 2003, 2005, 2007 editions	<b>10.00</b>
Conference dinner (only for those that have reserved in advance)	<b>65.00</b>



## VII conference Hormones, Brain and Behavior

*(Organizers: Balthazart J., G.J. de Vries, Panzica G.C.)*

**Dipartimento di Anatomia, Farmacologia e Medicina Legale,  
corso M. D'Azeglio 52 10126 Torino**

### 10.00-12.30

- **McCarthy M.M.**, Wright C.L., Schwarz J.M. and Nugent B.M. (USA) *New tricks for an old dogma: how estradiol mediates masculinization and defeminization of sexual behavior.*
- **Bakker J. (Belgium)** *Role of estrogens in the sexual differentiation of the brain*
- **Rissman E. F. (USA)** *Sex chromosomes etc.: new players for sexual differentiation.*
- **Ball G. (USA)** *New views of neuroplasticity and sex differences in the songbird brain*
- **de Vries G. J. (USA)** *A Second Look at the Function of Sexual Differentiation of the Brain*

### 12.30-14.00 Lunch

### 14.00-15.30

- **Palanza P. (Italy)** *Sex differences in social and emotional behavior in mice: How, Why and When.*
- **Forger N. G. (USA)** *Naked Mole-rats: Who needs Sex Differences?*
- **Swaab D. F.**, Garcia-Falgueras A. (Netherlands) *Sexual differentiation of the human brain in relation to gender identity and sexual orientation.*

### 16.00 – 18.30 Visit to the Anatomy Museum

**18.30 – 20.00 Jazz Concert: A tribute to Duke Ellington**  
*(Jazz Group of the Musical Association of the University Students in Piedmont)*

## Satellite Symposia

Villa Gualino, Torino

### *Satellite Symposium:*

#### UNEXPECTED ACTIONS OF STEROID RECEPTORS REGULATING REPRODUCTIVE AND SOCIAL BEHAVIORS

*(Organizers: J.Balthazart, P.Micevych.)*

- 10.00 Cornil A. C. (Belgium)** *Rapid behavioral effects of brain estrogens*  
**10.30 Jill B. Becker,** Yang H., Hu M., Schultz K. M., Kennedy R. T. **(USA)** *Estradiol receptor-alpha (er-alpha) and motivated behavior*  
**11.00 Fusani L.,** Day L. B., Schlinger B. A. **(Italy)** *Dynamic coupling and uncoupling between androgen and courtship behavior in male manakins*  
**11.30 McCarthy M.,** Zhang J.-M., Krebs-Kraft D.L., Waddell J., Bowers J.M. **(USA)** *A Novel Source of Sexual Dimorphism in the Mammalian Brain: Steroid Induced Cell Genesis*  
**12.00 Meisel L. R. (USA)** *Nonlinear Approaches to Genomic Regulation of Female Sexual Behavior*

**12.30-14 - Lunch**

### *Satellite Symposium:*

#### GENDER-SPECIFIC THERAPEUTIC STRATEGIES BASED ON NEUROACTIVE STEROIDS: IN SEARCH FOR INNOVATIVE TOOLS FOR NEUROPROTECTION

*(Organizers: Garcia-Segura L.M., Melcangi R.C.)*

- 15.00 Gillies G. E. (UK)** *Independent influences of sex steroids of systemic and central origin in a rat model of Parkinson's disease: a contribution to gender-specific neuroprotection by estrogen*  
**15.30 Finn D.,** Tanchuck M.A., Fretwell A.M., Beckley E.H., Kaufman K.R., Ford M.M. **(USA)** *Manipulation of GABAergic neurosteroids: Sex differences in the effects on alcohol drinking- and withdrawal-related behaviors*  
**16.00 Paus T. (UK)** *The growth of white matter in the adolescent brain: role of testosterone and androgen receptor*  
**16.30 Frye C.A.,** Paris J.J., Freidenberg B.M., Franco C.A., Wulfert E. **(USA)** *Gender differences in stress hormones, in post traumatic stress disorder and pathological gambling*  
**17.00 Franklin R. J. (UK)** *Gender differences in CNS remyelination - a therapeutic opportunity?*  
**17.30 Melcangi R.C.,** Pesaresi M., Maschi O., Giatti S., Caruso D. **(Italy)** *Gender differences in neuroactive steroid levels: observations in diabetic neuropathy and encephalopathy.*

**18.00 Closure of the Satellite Symposia**

**INTERNATIONAL MEETING**  
**STEROIDS AND NERVOUS SYSTEM**

**Villa Gualino, Torino**

**9.45 - OPENING CEREMONY**

**SEX DIFFERENCES IN, AND HORMONAL INFLUENCES ON, CANNABINOID-  
REGULATED BIOLOGY**

*(Chairs: McCarthy M. M., Wagner E. J.)*

- 10.00 Wagner E. J. (USA)** *Sex differences in the cannabinoid regulation of energy homeostasis*  
**10.30 Fratta W., Altea S., Fattore L. (Italy)** *Sex differences in the self-administration of cannabinoids*  
**11.00 Viveros M. P. (Spain)** *Sex differences in developmental studies analyzing functional implications of the endocannabinoid system; interactions with stress and other drugs of abuse.*  
**11.30 Franzoni M. F., Cottone E., Pomatto V., Guastalla A. (Italy)** *Role of the endocannabinoid system in the regulation of lower vertebrate reproduction*

**12.00 - 13.00 Plenary Lecture:**  
**Garcia-Segura L.M. (Spain)** *Estrogen and neuroprotection*  
*(Chair: Melcangi R.C.)*

*Lunch*

*13-15 Posters' Exhibition*

**STEROIDS AND PAIN**

*(Chairs: Balthazart J., Mensah-Nyagan A. G.)*

- 15.00 Mensah-Nyagan A. G.**, Meyer L., Schaeffer V., Kibaly C., Patte-Mensah C. **(France)**  
*Steroids and Neurobiology of Pain: history, present and future*
- 15.30 Jevtovic-Todorovic V.**, Latham J.R., Pathirathna S., Jagodic M.M., Covey D.F.,  
Todorovic S.M. **(USA)** *T channel modulation with neuroactive steroid, ECN, relieves  
morbid-obesity-induced diabetic neuropathy in ob/ob mice*
- 16.00 Aloisi A.M.**, Fiorenzani P., Ceccarelli I. **(Italy)** *Interactions between opioids and gonadal  
hormones in the modulation of pain*
- 16.30-17.00** *Coffee break*
- 17.00 Marchand S.**, Gaumont I., Tousignant-Laflamme Y. **(Canada)** *The Role of sex hormones  
on endogenous pain modulation: from animal to clinical research*
- 17.30 Levine J. D.** **(USA)** *Pain is sexy*
- 18.00 MaassenVanDenBrink A.**, de Vries R., ter Berg J.W.M. **(The Netherlands)**  
*Hyperprolactinemia, female sex steroids and dopaminergic mechanisms with respect to the  
dopamine – prolactine axis in a patient with a hemicrania continua phenotype.*

**18.15 - 20.00**

***Round Table I:***

**ANDROGENS AND ANDROGEN RECEPTORS**

*(Chairs: DonCarlos L., Mac Lusky N.)*

- **DonCarlos, L.L.** Sarkey, S. **(USA)** *Rapid actions of androgens in the cerebral cortex*
- **Collado P.**, Martini M., Di Sante G., Pinos H., Guillamon A., Panzica G.C. **(Spain)** *Role of  
androgens in masculinization of nitrergic system in rats*
- Rusmini P., Onesto E., Crippa V., Sau D., Bolzoni E., Galbiati R., **Poletti A.** **(Italy)**  
*Pathophysiological roles of the androgen receptor in motor neurons*
- **Rissman E.F.** **(USA)** *Role for androgen receptor in sexual differentiation*
- **Paris J.J.**, Frye C.A. **(USA)** *Formation of 3 $\alpha$ -androstane diol may underlie alcohol-  
promoted aggression among rodents*
- **Panzica G.C.**, Allieri, F., Bo, E., Collado P., Bakker J., Viglietti-Panzica C. **(Italy)**  
*Androgens and development of the BST parvocellular vasopressin system*

**20.00 Welcome Reception**

**IMPORTANCE OF CO-REGULATORY FACTORS FOR STEROID RECEPTOR ACTION  
IN THE BRAIN**

*(Chairs: Charlier T.D., de Vries G.J.)*

- 9.00 Carruth L.L.,** Duncan, K. A. (USA) *The estrogen alpha coactivator, RPL7, and sexual differentiation of the songbird brain*
- 9.30 Tetel M.J. (USA)** *Nuclear receptor coactivators modulate hormone-dependent gene expression in brain and reproductive behavior in rodents*
- 10.00 Auger A. (USA)** *Co-repressors and chromatin binding factors: the epigenetic organization of sex differences in the brain*
- 10.30** Coffee Break
- 11.00 Charlier T.D. (Belgium)** *Importance of steroid receptor coregulators for neuronal phenotype determination: modulation of steroid action.*
- 11.30 Paramanik V.,** Thakur M.K. (India) *Interaction of estrogen receptor associated protein (ERAP) 140 with estrogen receptor beta decreases during aging in mouse brain*

**12.00 - 13.00 Plenary Lecture:**

*Etgen A. M. (USA) Intracellular signal transduction cascades mediating behavioral effects of ovarian steroids*

*(Chair: Panzica G.C.)*

**Lunch**

**13.00 - 15.00 Posters' exhibition**

**ESTROGEN-INDUCED NON-CLASSICAL SIGNALING IN THE BRAIN: MECHANISM  
AND ROLE**

*(Chairs: Abraham I., Bakker J.)*

- 15.00 Rune G. (Germany)** *The maintenance of mature dendritic hippocampal spines requires rapid estrogen signaling*
- 15.30 Michevych P.,** Bondar G., Kuo J., Dominguez R. (USA) *Estradiol regulation of membrane estrogen receptor and its role in reproduction*
- 16.00 McMahan L.,** Smith C.C., Vedder L.C., (USA) *Estrogen, NR2b containing NMDA receptors, and LTP at hippocampal synapses*
- 16.30 Abraham I.,** Zsombor Kőszegi, Éva M Szegő (New Zealand) *Mechanism and role of rapid estrogen signaling in basal forebrain cholinergic neurons*
- 17.00 Vegeto E.,** Maggi A. (Italy) *Estrogen and brain inflammation*
- 17.15 Cambiasso M.J.,** Gorosito S.V. (Argentina) *An estrogen receptor variant located at the cell- surface of hypothalamic neurons is regulated by estradiol*

**18.00 – 20.00 Workshop**

**International Opportunities for Young Researchers**  
*(Organizers: Frye C.A., Mensah-Nyagan G.)*

**VITAMIN D THE FORGOTTEN NEUROSTEROID***(Chairs: Eyles D.W., Melcangi R.C.)*

- 9.00 Eyles D. W.,** Burne T, Cui X., Kesby J., Harms L., Ko P., Pelekanos M., McGrath J.J. **(Australia)** *Developmental vitamin D deficiency causes abnormal brain development*
- 9.30 Feron F.,** Fernandes de Abreu D.A., **(France)** *Vitamin D, a neuro-immunomodulator. Implications for auto-immune and neurodegenerative diseases*
- 10.00 Tuohimaa P.,** Kalueff A., Keisala T., Minasyan A. **(USA)** *Vitamin D, nervous system and aging*
- 10.30 Grecksch G.,** R  thrich H., H  llt V. and Becker A. **(Germany)** *Transient prenatal vitamin D deficiency is associated with changes of synaptic plasticity in the dentate gyrus in adult rats*

**YOUNG INVESTIGATORS SYMPOSIUM:***(Chairs: Frye C.A., Mensah-Nyagan G.)*

- 11.00 Ghasemi M.,** Sianati S., Sadeghi M., Anaraki D.K., Mehr S.E., Dehpour A.R. **(Iran)** *Ovarian sex steroids modulate the cannabinoid-induced analgesia and catalepsy in ovariectomized female mice*
- 11.10 Giatti S.,** Pesaresi M., Maschi O., Bianchi R., Cavaletti G., Caruso D., Melcangi R.C. **(Italy)** *RO5-4864, a ligand of translocator protein-18kda (TSPO), is neuroprotective in an experimental model of diabetic neuropathy.*
- 11.20 Longo D.,** Silvestri C., Rogawski M.A., Avoli M., Biagini G. **(Italy)** *Neuroprotective effects of neurosteroids in pilocarpine-treated rats*
- 11.30 Mouriec K.,** Pellegrini E., Anglade I., Gueguen M.M., Thieulant M.L., Pakdel F., Kah O. **(France)** *Neuronal progenitor cells expressing aromatase b in the brain of adult teleost: an evolutive novelty or an exaggeration of a more discrete mechanism connecting estradiol with neurogenesis?*
- 11.40 Yawno T,** Hirst J, Castillo-Melendez M., Walker D.W. **(Australia)** *Protective role of neurosteroids in the late gestation fetal sheep*
- 11.50 Gioiosa L.,** Chen X., Watkins R., Klanfer N., Bryant C.D., Evans C.J., Arnold A.P. **(USA-Italy)** *Effects of sex chromosome complement on nociception and morphine analgesia in mice*

**12.30 - 15.30****POSTERS DISCUSSION (wine and cheese)**

15.30 - 18.00

*Round table II:*

**NEUROSTEROIDS AND PREGNANCY: LONG TERM EFFECTS ON DEVELOPMENT**

*(Chair: Hirst J.)*

- **Brunton P.J.**, Russell J.A. (UK) *Opioid inhibition of hypothalamo-pituitary-adrenal (HPA) axis stress responses in pregnancy is induced by allopregnanolone*
- **Grattan D. R.** (NZ) *Gonadal steroid modulation of cytokine action in the brain during pregnancy*
- **Hill M.**, Pařizek A. (Czech Rep) *Biosynthesis and transport of neuroactive steroids in pregnancy*
- **Matthews S.G.** (Canada) *Glucocorticoids and transgenerational programming of neuroendocrine function and behaviour*
- **Biggio G., Murru L., Sanna E., Mostallino M.C.** (Italy) *Changes in BDNF, Arc and Long-Term Potentiation in the Rat Brain during Pregnancy and after Post-Partum*
- **Penn A.A.**, Ermini F., Morgan A.C.A. (USA) *Progesterone promotes neural progenitor proliferation in embryonic cortex*
- **Hirst J.J.**, McKendry A.A., Kelleher M.A., Walker D.W., Palliser H.K. (Australia) *Neurosteroid synthesis in compromised pregnancies: role in neuroprotection.*

18.15-18.45

*Luciano Martini Prize Lecture*

- **Walf A.A.** (USA) *The trophic effects of estradiol and SERMS in the hippocampus and peripheral tissues*

**21.00 Social Dinner (Ristorante Antica Zecca, Caselle)**

**NEUROSTEROIDS AND GABA-A RECEPTORS**

*(Chairs: Maguire J., Smith S. S.)*

- 9.00** Mennerick S., Akk G., Covey D.F., Evers A.S., Steinbach J.H., Zorumski C.F., (USA) *The importance of membrane interactions to neuroactive steroid effects at GABA<sub>A</sub> receptors*
- 9.20** Zheleznova N., Sedelnikova A., Weiss D.S. (USA)  *$\alpha_1\beta_2\delta$ , a silent GABA<sub>A</sub> receptor: recruitment by tracazolol and neurosteroids*
- 9.40** Smith S. S., Aoki C. and Shen H. (USA) *Reversal of neurosteroid effects at GABA<sub>A</sub> receptor triggers anxiety at puberty in female mice*
- 10.10** Maguire J., Mody I. (USA) *Endogenous steroid hormone-mediated changes in GABA<sub>A</sub> receptors alter neuronal excitability*
- 10.30** Coffee break
- 11.00** Biggio G., Mostallino M.C., Sanna E. (Italy) *Plasticity and function of extrasynaptic GABA<sub>A</sub> receptors during pregnancy and after delivery*
- 11.20** Frye, C.A., Llaneza, D.C., Paris, J.J. (USA) *Activational and organizational effects of progesterone for affective and cognitive behavior due to 5 $\alpha$ -pregnan-3 $\alpha$ -ol-20-one*

**12.00 – 13.00 Plenary Lecture:**

**Lambert.J. (UK)** *Pregnane neurosteroids: neuron specific allosteric modulators of the GABA<sub>A</sub> receptor*

*(Chair: Mensah-Nyagan G.)*

**Lunch**

**13.00 – 15.00 Posters' exhibition**

**PATHOGENETIC MECHANISMS MEDIATED BY GLUCOCORTICOID RECEPTORS  
IN PSYCHIATRIC DISORDERS: FROM BENCH TO CLINICS**

*(Chairs: Gass P., Pariante C.M.)*

- 15.00** Pariante C. M. (UK) *Modulation of the glucocorticoid receptor by antidepressants*
- 15.30** Tronche F. (France) *Inactivation of the glucocorticoid receptor gene in targeted neuronal populations: new insights on addiction and emotional behaviours*
- 16.00** Binder E.B. (USA) *The role of the glucocorticoid receptor and its co-chaperones in pathogenesis and therapy of affective disorders*
- 16.30** Ferrier N.I. (UK) *Glucocorticoid receptor antagonists in major depression – a new therapeutic avenue?*
- 17.30** Berry A., Carnevale D., Giorgio M., Pelicci P.G., de Kloet E.R., Alleva E., Minghetti L., Cirulli F. (Italy) *Greater resistance to psychophysical stress in p66<sup>Shc<sup>-/-</sup></sup> mice, a model of delayed and healthy aging*

**17.45 – CLOSURE OF THE MEETING**

### *Aromatase and Steroidogenic enzymes*

1. **Bellini M.J.**, Goya R.G. García-Segura, L.M. (**Spain**) *Construction of a recombinant adenoviral virus harbouring the cDNA of the enzyme aromatase: a novel tool for the study of aromatase function in the brain.*
2. **Di Nardo G.**, Breitner M., Panzica G.C., Sadeghi S.J., Gilardi G. (**Italy**) *Engineering human aromatase (CYP19) for biochemical characterization and in vitro assays.*
3. **Fester L.**, Zhou L., Bütow A., Huber C., von Lossow R., Prange-Kiel J., Jarry H., Rune G.M. (**Germany**) *Cholesterol-promoted synaptogenesis requires the conversion of cholesterol to estradiol in the hippocampus*
4. **Hallgren S.**, Srinivas Kitambi S. (**Sweden**) *Anatomical Distribution of Brain Aromatase (CYP19B) Expression in the Guppy, Poecilia reticulata*
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