

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



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

**February 17 - 21, 2007**

**FINAL PROGRAM**

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

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- **Università degli Studi di Torino**
- **Università degli Studi di Milano**
- **Facoltà di Scienze MFN, Torino**
- **Dipartimento di Anatomia, Farmacologia e Medicina Legale**
- **Fondazione Oasi, Troina, Italy**
- **Centro Rita Levi Montalcini, Torino**
- **Center of Excellence on Neurodegenerative diseases, Milano**
  
- **International Brain Research Organization (IBRO)**
- **Società Italiana di Neuroscienze**
- **National Science Foundation**
- **Regione Piemonte**
- **Provincia di Torino**
- **Comune di Torino**
  
- **Applied Biosystems**
- **ThermoFisher**
- **BIORAD**
- **CELBIO**
- **DBA, Italy**
- **Nikon, Italy**
- **Vinci Biochem, Italy**
  
- **Elsevier Publisher**
- **Karger Publisher**

**Organizers**

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

**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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**Educational Committee**

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Cheryl A. Frye

**Honor Committee**

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Ezio Pellizzetti – Rector of the University  
Alberto Conte – Dean, Faculty of Sciences  
Aldo Fasolo – Research Comm,  
University

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**MEETING SECRETARIAT**

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Prof. GianCarlo Panzica  
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I-10126 Torino, Italy  
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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 focussed on seven main topics:

- Effects mediated by classical steroid receptors
- Neuroactive steroids and neurogenesis
- Neuroprotective effects
- Xenoestrogens and brain circuitries
- Effects mediated by membrane receptors
- Corticosteroid effects and stress
- Steroid hormones and sexually dimorphic brain circuits
- Steroids and peripheral benzodiazepine receptor

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

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:

- |             |    |       |  |
|-------------|----|-------|--|
| • Saturday  | 17 | 9.00  | 12.00 (for participants at the Satellite Symposia) |
| • Saturday  | 17 | 16.00 | 18.00 (for participants at the meeting)            |
| • Sunday    | 18 | 8.00  | 17.00  |
| • Monday    | 19 | 8.00  | 17.00  |
| • Tuesday   | 20 | 9.00  | 16.00  |
| • Wednesday | 21 | 9.00  | 12.00  |
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## 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 of after the conference to visit these beautiful places, but because of time constrains we are not able to organize short excursions to these cities during the conference.

Torino is also placed very near the mountains and was the capital of the Winter Olympic Games in 2006 and of the Winter Universiade of 17-27 January 2007. Excursions to mountains are also possible and you could program a longer stay in Italy to spend your time skiing in our mountains.

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/>

### **Poster Presentation**

Posters will be on display during the entire conference from Sunday afternoon to Wednesday at 15.00. The posters will be exhibited Tuesday 20 (h 13-16) afternoon; the authors will be requested to be present at least one hour at the poster board, according to the schedule announced at the meeting.

**Size of poster boards is 90 cm horizontal by 200 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 and Elsevier Co Publisher). The Prizes will be a one-year subscription to one of the following journals **Hormones and Behavior**, **Frontiers in Neuroendocrinology** (offered by Elsevier Co), **Brain, Behavior and Evolution**, **Neuroendocrinology** (offered by Karger Publisher). 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 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 limited 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). Students from USA have been partly supported from a The University at Albany-SUNY Grant.

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

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

All participants (including invited speakers) must be registered. For registration please carefully fill in the PARTICIPATION FORM.

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

Advanced payment by means of:

1. **Bank transfer** to: SanPaolo IMI, Filiale 00506 (IBAN IT86 V010 2501 0061 000 0106 785) account number 100000106785 in favor of INTERNATIONAL MEETING ON STEROID AND NERVOUS SYSTEM (SNS03). In case of bank transfer you should add 30.00 euro to the total for handling expenses.
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 (5 days)*)	<b>435.00</b>
Registration for the meeting only (4 days)*	<b>385.00</b>
Student, including Satellite Symposia (5 days)	<b>300.00</b>
Student, meeting only	<b>250.00</b>
Registration to Satellite Symposia only (with lunch)	<b>110.00</b>
One-day registration	<b>95.00</b>
Two-day registration	<b>170.00</b>
Lunch tickets (5 days)	<b>45.00</b>
Lunch tickets (4 days)	<b>36.00</b>
Additional copy of the Abstracts' Book	<b>30.00</b>
Abstracts' Book of 2001, 2003, 2005 editions	<b>10.00</b>
Social dinner (only for those that have reserved in advance)	<b>60.00</b>



**SATELLITE SYMPOSIA**

## SELECTIVE ESTROGEN RECEPTORS MODULATORS AND THE BRAIN

(Organizers: G.C. Panzica, B. Marchetti)

- 10.00 **R.D. Brinton (USA)** *Mechanisms of Neuroprotection by SERMs in the brain*
- 10.30 **DiPaolo T.**, Bourque M., Liu B., Dluzen D.E., Morissette M. (**Canada**) *Tamoxifen and raloxifene neuroprotection in Parkinson's disease models: examples of MPTP and methamphetamine toxicities*
- 11.00 **Garcia-Segura L.M.**, Tapia González S, Diz-Chaves Y, Pernía O, Carrero P, Ciriza I (**Spain**) *Selective estrogen receptor modulators, neuroprotection and glial cells*
- 11.30 **Frye C.A.**, Walf, A.A. (**USA**) *Estrogen receptor beta is a target of estrogens' and androgens' for affective and cognitive behavior*
- 12.00 **Marchetti B.**, L'Episcopo F, Tirolo C, Testa N, Caniglia S, Giaquinta G, Gennuso F, Arcieri P, Serra P-A, Desole MS, Miele E, Delitala G, Morale MC. (**Italy**) *Neuroimmune interactions and estrogen deficiency: innate immunity as a double-edged sword in neurodegeneration and repair*
- 12.30 **Tena-Sempere M.** (**Spain**) *Effects of selective ER ligands and modulators on the gonadotropic axis*
- 13.00-14.00 **Lunch**

## NEW PERSPECTIVES IN THE DOSAGE OF NEUROACTIVE STEROIDS

(Organizers: Melcangi R.C. and Mensah-Nyagan A.G.)

- 15.00 **Schumacher M.**, Liere P, Labombarda F, De Nicola AF, Guennoun R, Baulieu EE (**France**) *Analysis of steroids by gas chromatography/mass spectrometry: novel perspectives for understanding their significance in the nervous system.*
- 15.30 **Griffiths WJ.**, Wang, Y. (**UK**) *Capillary Liquid Chromatography Combined with Tandem Mass Spectrometry for the Study of Neurosteroids and Oxysterols in Brain*
- 16.00 **Higashi T.**, Nagahama A., Ninomiya Y., Shimada K. (**Japan**) *Analysis of stress-induced changes in rat brain neuroactive steroid levels using LC/MS coupled with derivatization.*
- 16.30 **Caruso.**, Scurati S., Crotti S., Maschi O., Melcangi RC (**Italy**) *Recent advances in liquid chromatography-mass spectrometry related to the evaluation of plasma and tissue levels of neuroactive steroids during neurodegenerative events*
- 17.00 **Reddy DS** (USA) *Mass Spectrometric Quantification and Physiological-Pharmacological Activity of Androgenic Neurosteroids*
- 17.30 **Romeo E.**, Rupprecht R., Pasini A., Manieri G., Bernardi G., Longone P. (**Italy**) *Neurosteroids Determination in Biological Fluids and their Enzymes Expression in Lymphocytes of Patients with Neuropsychiatric Disorders*

18.30 **Closure of the Satellite Symposia**

Sunday, 18<sup>th</sup> February

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**INTERNATIONAL MEETING**

**STEROIDS AND NERVOUS SYSTEM**

11.30

*Opening ceremony*

**PLENARY LECTURE**

(Chair: Balthazart J.)

12.00-13.00 **Herbison A.E.**, Porteous R., Clarkson J., Romano N., Campbell R.E. (**New Zealand**)  
*Estrogen regulation of gonadotropin-releasing hormone neurons*

**EFFECTS MEDIATED BY CLASSICAL STEROID  
RECEPTORS**

(Chairs: Mani S., Tena-Sempere M.)

15.00 **Smith J (Australia)** *Steroid regulation of kisspeptin signalling in the brain*

15.30 **Bass ah (USA)** *Steroid-dependent modulation of vocal motor systems*

16.00 **Handa RJ (USA)** *Estrogen receptor beta in the brain: from form to function*

16.30 **Bodo C, Rissman EF (USA)** *A role for the androgen receptor in the sexual differentiation of the olfactory system in mice.*

17.00 **Ishunina T.A., Swaab D.F. (Russia)** *Canonical and alternatively spliced estrogen receptor  $\alpha$  in the human mamillary bodies and hippocampus in aging and alzheimer's disease*

17.15 **Klein S., Grossmann R. (Germany)** *Female specific activation of galanin in the supraoptic nucleus of hens after oviposition related upregulation of arginine vasotocin (AVT)*

17.30 **Sica M., Martini M., Verzè L., Viglietti-Panzica C., Panzica G.C. (Italy)** *Expression of nitric oxide synthase in the male mouse limbic system is mediated by estrogen receptors.*

18.00

Welcome Cocktail

**21-23 ROUND TABLE I Steroid hormones and sexually dimorphic brain circuits**

(Chair: Guillamon A., Panzica G.C.)

**Guillamon A, Segovia S (Spain)** *Sex differences in the olfactory system of mammals*

**Swaab DF (Netherlands)** *Human brain sex differences in relation to gender, sexual orientation and brain disorders.*

**Patisaul H.B. (USA)** *Assessing the Functional Disruption of Brain Sexual Differentiation by Endocrine Disrupting Compounds*

**Micevych P, Phoebe Dewing P. (USA)** *Sexual differentiation: it's not just for development anymore.*

**Bass A.H. (USA)** *Sexually polymorphic neuroendocrine phenotypes: examples from singing fish*

**Bakker J (Belgium)** *Are estrogens required for the development of the female brain?*

**Balthazart J (Belgium)** *Sexual dimorphism in the avian limbic system*

## SCIENTIFIC PROGRAM

Monday, 19<sup>th</sup> February

### NEUROACTIVE STEROIDS AND NEUROGENESIS

(Chairs: Herbison A.E., Micevych P.)

- 8.30 **Galea L.A.M.**, Barha C., Barker J.M., Pawluski J.L. Spritzer M.D. (Canada) *Gonadal hormone regulation of adult hippocampal neurogenesis*
- 9.00 **Wang Z**, Fowler CD (USA) *Estrogen, Amygdala, and Adult Neurogenesis*
- 9.30 **Brinton RD**, Wang J, Irwin R, Liu L, Chen S, Chung E (USA) *Allopregnanolone Regulation Of Proliferation Of Human Neural Stem Cells and Neurogenesis In Triple Transgenic Alzheimer's Disease Mice*
- 10.00 **Abrous N** (France) *Neurogenesis And Age-Related-Cognitive Functions: Implication Of Steroids*
- 10.30-11.00 *Coffee Break*
- 11.00 **Herbert J** (UK) *Control Of Neurogenesis In The Adult Hippocampus By Corticoids and Serotonin*
- 11.30 **Lecanu L.**, Ibrahim A., Yao W., McCourty A., Greeson J., Papadopoulos V. (USA) *In vitro and in vivo induced neurogenesis by the naturally occurring steroid solasodine is associated with GAP-43/HuD pathway activation and increase of the translocator protein (18 kDa) (TSPO) expression*

### Plenary lecture

(Chair: Melcangi R.C.)

- 12.00-13.00 **Mellon SH**, Gong W, Schonemann M (USA) *Neurosteroids in health and disease*

### NEUROPROTECTIVE EFFECTS

(Chairs: Garcia-Segura L.M., Mellon S.H.)

- 15.00 **Simpkins JW**, Dykens JA (USA) *Mitochondrial mechanisms of estrogen neuroprotection*
- 15.30 **Rosario ER**, Carroll JC, Oddo S, LaFerla FM, **Pike CJ** (USA) *Androgen regulation of neuropathology in a triple transgenic mouse model of AD*
- 16.00 **Stein DG** (USA) *Neurosteroids As Protective Factors in TBI: From Laboratory Bench to the Bedside*
- 16.30-17.00 *coffee break*
- 17.00 **Mensah-Nyagan AG**, Meyer L., Kibaly C, Schaeffer V and Patte-Mensah C. (France) *Neurosteroids and nociceptive sensitivity in neuropathic rats*
- 17.30 **Melcangi RC** (Italy) *Neuroactive steroids and peripheral neuropathy*
- 18.00 **Ritz M.-F.**, Hausmann O. (Switzerland) *Neuroprotective effects of estradiol in a rat model of spinal cord injury.*
- 18.15 **Kondo S.**, Imaizumi K (Japan) *BBF2H7, a novel transmembrane bZIP transcription factor, is a new type of ER stress transducer*
- 21.00-22.30 **Workshop: International opportunities for young researchers**  
(Organizers: C.F. Frye C., A.G. Mensah-Nyagan)

**XENOESTROGENS AND BRAIN CIRCUITRIES**

(Chair: Celotti F., Panzica G.C.)

- 8.30 **Ottinger MA**, Lavoie E, Thompson N, Whitehouse K, Barton M, Abdelnabi M, Quinn M, Jr. (USA) *Neuroendocrine and behavioral consequences of embryonic exposure to endocrine disrupting chemicals*
- 9.00 **Patisaul HB**, Polston EK (USA) *Influence of endocrine active compounds in the developing brain*
- 9.30 **Maggi A (Italy)** *The ere-luc reporter mouse: twenty years of basic research to be applied to the study of endocrine disrupters*
- 10.00-10.30 *coffee break*
- 10.30 **Kawato S**, Ogiue-Ikeda M., Tanabe N., Tsurugizawa T., Hojo Y., Mukai H. (Japan) *Rapid modulation of long-term depression and spinogenesis by endocrine disrupters in adult rat hippocampus*
- 11.00 Corrieri L., Della Seta D., Paola Materazzi, Dessi-Fulgheri F., Farabollini F., **Fusani L. (Italy)** *Environmental-like exposure to xenoestrogen affects sexual differentiation of brain and behavior in female rats*
- 11.15 **Ponzi D**, Palanza P, Maruniak J, Parmigiani S, Vom Saal F (USA) *Sexual dimorphism in the number of TH-immunostained neurons in the Locus Coeruleus of young mice is eliminated by prenatal exposure to Bisphenol A*

**YOUNG INVESTIGATORS SYMPOSIUM**

(Chairs: Frye C., Mensah-Nyagan A.G.)

- 11.30 **Belloni V.**, Alleva E., Dessi-Fulgheri F., Zaccaroni M., Santucci D. (Italy) *Effects of low doses of atrazine on the neurobehavioral development of mice*
- 11.40 **Forlano P.M.**, Bass, A.H. (USA) *Substrates for plasticity: brain aromatase, estrogen and androgen receptors in sexually dimorphic, vocal-acoustic and auditory pathways in a teleost fish*
- 11.50 **Meyer L.**, Patte-Mensah C., Mensah-Nyagan AG. (France) *The enzyme 3 $\alpha$ -hydroxysteroid oxidoreductase is a key regulator of nociceptive mechanisms in the rat spinal cord.*
- 12.00 **Romeo, R.D.**, McEwen, B.S. (USA) *Stress during adolescence leads to depressive-like behaviors and changes in hypothalamic-pituitary-adrenal axis function in adulthood*
- 12.10 **Taziaux M.**, Keller M., Bakker J., Balthazart J. (Belgium) *Brain estradiol rapidly regulates in a neurotransmitter-like fashion male sexual behavior in mice*
- 12.20 **Paris J.J.**, Rhodes M.E., Frye C.A. (USA) *Inhibition of 3 $\alpha$ ,5 $\alpha$ -THP formation decreases exploratory/anti-anxiety and socio-sexual behavior in sexually receptive female rats*

13.00-16.00

**POSTERS' EXHIBITION**

14.30-16 **ROUND TABLE II – Steroids and peripheral benzodiazepine receptor**

Participants: V. Papadopoulos, C.F. Frye, J. Guillarte, R.C. Melcangi, L.M. Garcia-Segura

21 **Social Dinner: Castle of Buriasco**

10060 Buriasco (Torino) Via Macello 10

<http://www.castellodiburiasco.com>

## SCIENTIFIC PROGRAM

Wednesday, 21<sup>th</sup> February

### EFFECTS MEDIATED BY MEMBRANE RECEPTORS

(Chairs: Melcangi R.C., Schumacher M.)

- 8.30 **Micevych P.**, Hariri O., Soma K., Sinchak K. (USA) *Neuroprogesterone: essential trigger for estrogen positive feedback?*
- 9.00 **Belcher S.M.**, Le H.H., Spurling L., Zsarnovszky A. (USA) *Integrated signaling mechanisms of estrogen in developing neurons and neuroectodermal derived tumors*
- 9.30 **Guennoun R.**, Meffre D, Labombarda F, Gonzalez S.L, Gonzalez Deniselle M.C, Stein DG, De Nicola AF, Schumacher M (France) *The membrane-associated progesterone-binding protein 25-dx: expression, cellular localisation and up-regulation after brain and spinal cord injuries*
- 10.00 **Valenzuela C.F.**, Mameli M., Carta M., Zamudio, P.A. (USA) *Modulation of glutamatergic synaptic transmission by neurosteroids*
- 10.30-11.00 **coffee break**
- 11.00 **Biggio G**, Mostallino MC, Pisu MG, Talani G, Carta M, Sanna E, Serra M (Italy) *Neurosteroid responses and GABA<sub>A</sub> receptor plasticity during chronic stress*
- 11.15 **Cambiasso M.J.**, Gorosito S.V. (Argentina) *Axogenic effect of oestrogen in male rat hypothalamic neurons involves Ca<sup>2+</sup>, PKC and ERK signaling*
- 11.30 **Nyberg S.**, Bäckström T., Zingmark E., Sundström Poromaa I. (Sweden) *Allopregnanolone decrease with symptom improvement during placebo and GnRH agonist treatment in women with premenstrual dysphoric disorder*

### Plenary lecture

(Chair: Panzica G.C.)

- 12.00-13.00 **Swaab D.F.**, Bao A-M (Netherlands) *The stress system in the human brain in depression and neurodegeneration.*

### CORTICOSTEROID EFFECTS AND STRESS

(Chairs: Riva M.A., Swaab D.F.)

- 15.00 **Sousa N** (Portugal) *Corticosteroid receptors and neuroplasticity*
- 15.30 **Pryce CR** (Switzerland) *Postnatal ontogeny of hippocampal expression of the mineralocorticoid and glucocorticoid receptors in the common marmoset monkey*
- 16.00 **Gass P** (Germany) *Mice with compromised glucocorticoid receptor expression show behavioural and biochemical features of depression*
- 16.30-17.00 **coffee break**
- 17.00 **Matthews SG** (Canada) *Maternal adversity, glucocorticoids and programming of neuroendocrine function and behaviour.*
- 17.30 **Darnaudéry M.**, Morley-Fletcher S. and Maccari S. (France) *Long lasting effects of stress during pregnancy on hpa function and behaviour in mother and offspring rats*

18.30

Meeting closure

## A Effects mediated by classical steroid receptors

**A-1 Benedusi V., Pozzi S., Maggi A. and Vegeto E. (Italy)** *The anti-inflammatory activity of estrogenic compounds in microglia*

**A-2 Mattsson, A., Mura, E., Halldin, K., Panzica G.C., Brunström, B (Sweden)** *Embryonic exposure to an ER $\alpha$  agonist affects reproductive organ development but does not alter copulatory behavior or the parvocellular vasotocin system in male Japanese quail*

**A-3 Mayoral, S.R. and Penn, A.A. (USA)** *Brain estrogen receptor expression in perinatal mice*

**A-4 Pozzi S., Benedusi V., Vegeto E. and Maggi A. (Italy)** *Anti-inflammatory activity of estrogen in acute and chronic brain inflammation*

**A-5 Sanz A., Carrero P., Pernía O., Garcia-Segura L.M. (Spain)** *Both basal and estradiol-regulated activation of IGF-I receptor signaling in the rat brain are affected by the duration of previous ovarian hormonal deprivation*

**A-6 Walf, A.A., Frye, C.A (USA)** *Estradiol and selective estrogen receptor modulators with activity at estrogen receptor beta have dose-dependent effects to reduce anxiety and depressive behavior*

## B Neuroactive steroids and neurogenesis

**B-1 Alias A.G. (USA)** *Does 5 $\alpha$ -reductase stimulation improve cognitive functions, while inhibition improve immunity?*

**B-2 Hill M., Cibula D., Včelaková H, Kancheva L. and Pařízek A. (Czech Republic)** *Pregnanolone isomers and their polar conjugates in late pregnancy: A longitudinal study*

**B-3 Kancheva L , Včelaková H, Hill M., Vrbíková J. and Stárka L (Czech Republic)** *Neuroactive steroids in adult men*

**B-4 Bo E., Casella D., Martini M., Viglietti-Panzica C., Deviche P., Panzica G.C. (Italy)** *Photoperiod influences aromatase expression in *Junco hyemalis* prosencephalon.*

**B-5 Pawluski J.L., Walker C.A., Galea L.A.M. (Canada)** *Adult hippocampal neurogenesis is altered with maternal experience*

**B-6 Peruffo A.,** Buson G. Cozzi B. and Ballarin C. **(Italy)** *Primary cell cultures from fetal bovine brain: an in vitro model to study neuroactive steroids*

**B-7 Rahman M,** Lindblad C., Johansson I-M, Bäckström T and Wang M-D **(Sweden)** *Neurosteroid modulation of recombinant rat  $\alpha_5\beta_2\gamma_{21}$  and  $\alpha_1\beta_2\gamma_{2L}$  GABA<sub>A</sub> receptors in xenopus oocyte*

## C Neuroprotective effects

**C-1 Barreto G.,** Veiga S., Azcoitia I., Garcia-Segura L.M., Garcia-Ovejero D. **(Spain)** *Testosterone decreases reactive astroglia and reactive microglia after brain injury in male rats: role of its metabolites estradiol and dihydrotestosterone*

**C-2 Berumen L.C.,** Tecozautla A., Sánchez-Ramos M.A., García-Servín M., García-Alcocer G. **(México)** *Steroid hormone effects on 5-HT<sub>5A</sub> serotonin receptor-like immunolabelling in the rat hippocampus*

**C-3 F.Biamonte,** G.Assenza, R.Marino, D.Caruso, S.Crotti, R.C.Melcangi, R.Cesa, P.Strata, F.Keller. **(Italy)** *Interaction between estrogens and reelin in purkinje cell development*

**C-4 Carroll J.C.,** Emily R. Rosario, Lilly Chang, Frank Z. Stanczyk, Salvatore Oddo, Frank M. LaFerla, Christian J. Pike **(USA)** *Progesterone blocks estrogen regulation of alzheimer-like neuropathology in female 3xTG-AD mice*

**C-5 Danza G.,** Cecchi C., Pensalfini A., Formigli L., Nosi D., Stefani M, Liguri G, Rosati F., Dichiarà F., Morello M., Pieraccini G., Serio M., Peri A. **(Italy)** *The estrogen-regulated gene Seladin-1/DHCR24 exerts its neuroprotective effects through membrane cholesterol modulation*

**C-6 Fargo K.N.,** Sengelaub D.R. **(USA)** *Androgenic, but not estrogenic, protection of motoneurons from somal and dendritic atrophy induced by the death of neighboring motoneurons*

**C-7 Forsberg M. K.,** Hallberg M., Nyberg F., Svensson A-L **(Sweden)** *Neuronal protection of dehydroepiandrosterone on PC12 cells pretreated with  $\beta$ -amyloid*

**C-8 S. Giatti,** I. Roglio, M. Pesaresi, R. Bianchi, G. Cavaletti, L.M. Garcia-Segura, G. Lauria, R.C. Melcangi **(Italy)** *Progesterone and its derivatives as protective agents in experimental diabetic neuropathy*

**C-9 Jarrahi M,** Vafaei AA, Rashidy-Pour A **(Iran)** *An evaluation of the effect of dexamethasone in preventing Tourniquet neurepathy in rats*

**C-10 Kibaly C.,** Meyer L., Patte-Mensah C. and Mensah-Nyagan A.G. **(France)** *Involvement of endogenous dehydroepiandrosterone in the modulation of spinal nociceptive mechanisms*

- C-11 Kondo S., Imaizumi K (Japan)** *BBF2H7, a novel transmembrane bZIP transcription factor, is a new type of ER stress transducer*
- C-12 Lee J.E., Kim H.J., Kang H.S., Ahn H.S., and Gye M.C. (Korea)** *Postnatal changes in the expression of aquaporin 1 and effect of estrogen on the expression in ovariectomized mouse brain*
- C-13 I. Roglio, S. Giatti, M. Pesaresi, R. Bianchi, G. Cavaletti, D. Caruso, S. Scurati, L.M. Garcia-Segura, G. Lauria, R.C. Melcangi (Italy)** *Testosterone derivatives are neuroprotective agents in experimental diabetic neuropathy*
- C-14 Rosario, E.R., Carroll, J.C., Pike, C.J. (USA)** *Estrogen and androgens regulate Alzheimer-like neuropathology in male 3xTG-AD mice*
- C-15 Schaeffer V., Patte-Mensah C., Eckert A., Mensah-Nyagan A.G. (France)** *Effects of beta amyloid peptide 1-42 and oxidative stress on neurosteroid formation in human neuroblastoma cells.*
- C-16 Szegő É.M., Kékesi K.A., Juhász G., Ábrahám I.M. (Hungary)** *Effect of estrogen treatment on protein expression pattern in female mice brain using fluorescent differential 2-D gel electrophoresis (dige)*
- C-17 Tapia González S., Diz-Chaves Y., Pernía O., Carrero P., Garcia-Segura L.M. (Spain)** *Selective estrogen receptor modulators decrease microglia activation in the cerebellum of male rats*
- C-18 Zampieri S, Mellon SH, Pittis MG, Nevyjel M, Bembi B, Dardis A. (Italy)** *Allopregnanolone (ALLO) exerts a protective effect against oxidative stress in Niemann Pick C cells*

## **D Xenoestrogens and brain circuitries**

- D-1 Martini M., Miceli D., Palanza P., Viglietti-Panzica C., Panzica G.C. (Italy)** *Effects of Bisphenol A on the hypothalamic nitrinergic system of CD1 mouse*
- D-2 Sica M., Håkansson H., Halldin K. (Sweden)** *Effects on estrogenic activity in pituitary gland and hypothalamus of male ERE reporter mice, after single oral TCDD exposure.*

## **E Effects mediated by membrane receptors**

- E-1 Dieni C.V., Tobin V., Menzies JRW., Dutia M.B. (Italy)** *Effects of THDOC and allopregnanolone on the gabaergic current evoked by muscimol in the neurons of the rat medial vestibular nuclei*

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- E-2 Frondaroli A., Grassi S., Pettorossi V.E. (Italy)** *Long-term effects of THDOC on the neuronal activity of the rat medial vestibular nuclei*
- E-3 Hariri O.R., Micevych P.E. (USA)** *The nongenomic effects of estrogen regulates the effects of oxytocin in the hypothalamic astrocytes*
- E-4 Lindblad C., Bierzniece V., Turkmen S., Bäckström T. and Johansson I-M. (Sweden)** *Metabolism prevent the UC1010 antagonistic effect to allopregnanolone in the morris water maze*
- E-5 G. Ragagnin, M. Rahman, E. Zingmark, J. Strömberg, P. Lundgren, M. Wang, T. Bäckström (Sweden)** *Structure-activity relationship of GABA<sub>A</sub>-steroids antagonists*

## F Corticosteroid effects and stress

- F-1 Berry A., Giorgio M., Martin-Padura I.; Pelicci P.G., de Kloet E.R., Alleva E., Minghetti L. and Cirulli F. (Italy)** *Mice carrying a deletion of the P66<sup>Shc</sup> gene show reduced behavioural and neuroendocrine responses to stressful stimuli*
- F-2 Hauser J., Zuercher N., Feldon J., Diaz-Heijtjz R., Dettling-Artho R., Knapman A., Pryce C.R. (Switzerland)** *Effects of prenatal dexamethasone treatment on motor dexterity in the juvenile marmoset monkey*
- F-3 Hirst JJ , Palliser HK, Yates DM, Walker DW (Australia)** *Role of 5αReductase enzymes in the fetal brain and placenta in neurosteroid production following intrauterine growth restriction*
- F-4 Macrì S., Cirulli F. , Pasquali P. , Bonsignore L.T. , Laviola G. (Italy)** *Neonatal exposure to low doses of corticosterone increases novelty seeking and resistance to bacteria infection in adult male mice*
- F-5 Maggio N. and Segal M (Israel)** *Corticosteroids modulation of long term potentiation along the septo-temporal axis of the hippocampus*
- F-6 Morley-Fletcher S, Mairesse J, Daszuta A, Soumier A, Banasr M, Zuena AR, Mocaer E, Matteucci P, Casolini P, Catalani A, Maccari S. (France)** *Neuroplasticity in the prenatal stress rat model of depression: effects of agomelatine treatment*
- F-7 Ognibene E., Adriani W., Macrì S., Laviola G (Italy)** *Neurobehavioural disorders in the infant reeler mouse model: interaction of genetic vulnerability and consequences of maternal separation*
- F-8 Vafaei AA, Taherian AA, Jarrahi M (Iran)** *Assessment of modulatory effects of corticosterone on anxiety related behavior in mice*
- F-9 Velickovic N.A., Djordjevic A.D., Horvat A.I., Demajo M.A. (Serbia)** *Late effects of ionizing irradiation on corticosteroid receptor expression in rat hippocampus: the role of hypothalamus-pituitary-adrenal axis*

## G Others

- G-1 Allieri F., Hardin-Pouzet H. (Italy)** *Monoaminergic regulation of AVP system in limbic nuclei during estrous cycle, possible implication in anxiety and depression*
- G-2 Amini H., Salimpour S., Mirzaei M., Sabetkasaei M., Ahmadiani A. (Iran)** *Involvement of the enzyme 5alpha-reductase in morphine-induced dopamine release in the nucleus accumbens: a microdialysis study in rats*
- G-3 Andrade T.G.C.S., Sergio T.O., Broiz A.C.G., Avanzi V. (Brazil)** *The effect of oestradiol benzoate in the median raphe nucleus on the exploratory behaviour in forced swimming test*
- G-4 Andrade T.G.C.S., Almada R.F., Nakamura J.S., Avanzi V. (Brazil)** *Effect of oestrogenic action in the median raphe nucleus on the exploratory behaviour of previously immobilized female rats, in the elevated plus maze*
- G-5 Aste N., Shimada K., Watanabe Y. and Saito, N. (Japan)** *Neurosteroidogenesis in the quail brain*
- G-6 Atwood C.S., Wilson A.C., Bowen R.L., Vadakkadath Meethal S. and Liu T. (USA)** *The potential role of a neuronal autocrine/paracrine mechanism in the regulation of neurosteroid production: luteinizing hormone receptor mediates neurosteroid production via upregulation of steroidogenic acute regulatory protein expression*
- G-7 Bramanti V., Bronzi D., Raciti G., Avitabile M., Avola R. (Italy)** *Neurosteroids-growth factors interaction induces up and down regulation of GFAP and vimentin expression in astroglial cells maintained under serum-free stressed culture conditions*
- G-8 Balog J., Szegő É.M., Erdei F., Szabó G., Juhász G. and Ábrahám I.M. (Hungary)** *Sex differences in rapid estrogen action on GABAergic neurons in vivo*
- G-9 Campbell B.C. (USA)** *DHEAS and the hominoid brain*
- G-10 Carrillo B., Pinos H., Guillamón A., Panzica G.C., Pérez-Izquierdo M.A., Collado P. (Spain)** *Nitric oxide effects on sexual and maternal behavior in the female rat*
- G-11 Ceccarelli I., De Padova A.M., Fiorenzani P., Massafra C. and Aloisi A.M. (Italy)** *Single opioid administration modifies gonadal steroids in both the CNS and plasma of male rats*
- G-12 Chalbot S., Lecanu L., Greeson J. and Papadopoulos V. (USA)** *Oxidation-dependent plasma DHEA formation as a diagnostic tool for Alzheimer's disease pathology: results from a trial*

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- G-13 Csakvari E., Hoyk S., Szajli A., Kurunczi A., Gyenes A., Berger A., and Parducz A. (Hungary)** *Lesion-induced glial reaction in the rat olfactory bulb: effect of DHEA and DHEA derivatives*
- G-14 Diz-Chaves Y., Pernía O., Carrero P., Garcia-Segura L.M. (Spain)** *Dose-response study of antidepressant effects of estrogenic compounds in ovariectomized mice in the forced swim test*
- G-15 Do Rego J.L., Tremblay Y., Luu-The V., Acharjee S., Repetto E., Galas L., Castel H., Vallarino M., Kwon H.B., Bélanger A., Seong J.Y., Pelletier G., Tonon M.C., Vaudry H. (France)** *Neuroanatomical and biochemical evidence for the occurrence of cytochrome P450<sub>C17</sub> in the frog brain. Regulation by vasotocin and mesotocin*
- G-16 Fester L., Zhou L., Bütow A., Huber C., von Lossow R., Jarry H., M. Rune G.M. (Germany)** *Synaptogenesis: promoted by cholesterol or estradiol?*
- G-17 Hiroi R., Neumaier J.F. (USA)** *Estrogen selectively increases tryptophan hydroxylase-2 and decreases 5HT<sub>1B</sub> mRNA expressions in distinct subregions of rat dorsal raphe nucleus: association between gene expression and anxiety behavior in the open field*
- G-18 Kanematsu T. and Hirata M. (Japan)** *PRIP, a phospholipase C-related inactive protein, regulates GABA<sub>A</sub> receptor endocytosis*
- G-19 Löfgren M., Johansson I., Meyerson B. and Bäckström T. (Sweden)** *Progesterone withdrawal sensitivity in female rats relates to differences in baseline behavior of risk taking and exploration*
- G-20 Longo D., Baldelli E., Zini I., Zoli M., Avoli M., Biagini G. (Italy)** *P450<sub>scc</sub> is induced in neuronal and glial cells after status epilepticus: modulatory effects of neurosteroids on epileptogenesis*
- G-21 Martín-García E., Darbra S., Pallarés M. (Spain)** *Alterations of neonatal levels of allopregnanolone and the novelty-directed behavioural response to intrahippocampal administration of allopregnanolone in adulthood*
- G-22 Milani P., Ginanneschi F., Biasella A., Bonifazi M., Rossi A., Mazzocchio R. (Italy)** *Heightened seizure susceptibility following the administration of human chorionic gonadotropin*
- G-23 Mizokami A., Kanematsu T. and Hirata M. (Japan)** *Roles of PRIP in trafficking of gamma2 subunit containing GABA<sub>A</sub> receptor.*
- G-24 Nasir RH, Chen C, Bellinger D, Korrick SA (USA)** *Prenatal estrogens and the development of memory and learning*
- G-25 Nobahar M., Vafaei AA (Iran)** *Assessment of interaction between sex hormones and incidence of epilepsy crisis in female*

- G-26 Ohya T.,** Kodama M., Hayashi S. (**Japan**) *Vasotocin/isotocin neurons are decreased after spawning in the female medaka fish (Oryzias latipes) brain: localization of aromatase and estrogen receptor homologue*
- G-27 Parkash J.** and Kaur G. (**India**) *GnRH-Astrocytes interactions involved in GnRH neurosecretion: role of PSA-NCAM through changing activity and expression levels of polysialyltransferase.*
- G-28 Prange-Kiel J,** Jarry H, Kohlmann P, Schön M, Lohse C, Rune GM (**Germany**) *Is there a link between the hypothalamo-pituitary-gonad axis and the hippocampus?*
- G-29 Romanò N.,** Jasoni C.L. and Herbison A.E. (**New Zealand**) *Rapid actions of estrogen on adult GnRH neurons*
- G-30 Scurati S.,** Maschi O., Crotti S., De Angelis L., Melcangi R.C. and Caruso D. (**Italy**) *Assessment of neuroactive steroid levels in plasma and nervous system by liquid chromatography-mass spectrometry*
- G-31 Timby E.,** Bäckström T., Nyberg S., Wihlbäck A.-C.N., Bixo M. (**Sweden**) *Administration of allopregnanolone decreases secretion of gonadotropins in healthy women of fertile age*
- G-32 Venard C.,** Boujedaini N., Belon P., Mensah-Nyagan A.G. and Patte-Mensah C. (**France**) *Pharmacological modulators of the glycinergic system regulate allopregnanolone biosynthesis in the rat spinal cord*
- G-33 Vlad A.G (Romania)** *It is possible that the unspecific steroids for gonadotropin system to modulate neuronal pulsatility activity from POA – SCH of the hypothalamus for regulating of LH–RH release and ovulation trigger?*

## **H Steroid hormones and sexually dimorphic brain circuits**

- H-1 Bao A-M,** Swaab D. F. ( **The Netherlands**) *Gender difference in age-related number of corticotropin-releasing hormone expressing neurons in the human hypothalamic paraventricular nucleus and the role of sex hormones*
- H-2 Cannizzaro C.,** Plescia F., Barrile V., Diliberto I., La Barbera M., Noto G., Mantia G. (**Italy**) *Neurosteroid pregnancy differently affects learning and memory performance by altering emotionality in a gender-related manner*
- H-3 Gotti S.,** Martini M., Pradotto M., Viglietti-Panzica C., Panzica G.C. (**Italy**) *Sexual dimorphism and estrous cycle effects on nitrinergic system in mouse hippocampus*

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- H-4 Maccari S**, Mairesse J, Zuena AR, Morley-Fletcher S, Matteucci P, Cinque C, Catalani A, Nicoletti F, Casolini P. **(Italy)** *Prenatal stress has long-term influence on neuroplasticity: sex differences*
- H-5 Mura E.**, Furnari P., Plumari L., Viglietti-Panzica C., Panzica G.C. **(Italy)** *Role of apoptosis in the sexual differentiation of the bed nucleus of stria terminalis of japanese quail*
- H-6 Oboti L.**, Peretto P., Fasolo A., Panzica G.C. **(Italy)** *The accessory olfactory bulb of the adult mouse: neurogenesis and morphological analysis in the two sexes*
- H-7 Pinos H**, Carrillo B, Pérez-Izquierdo M, Ortega E., Collado P. **(Spain)** *Undernurishment and food rehabilitation effects on plasma leptin levels in Wistar rat*

