

## SCIENTIFIC SECRETARIAT

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## ORGANIZING SECRETARIAT

### **CENTRO ORGANIZZAZIONE CONGRESSI**

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## ORGANIZING COMMITTEE

Z. BASHIR	<i>(U.K.)</i>
G. BATTAGLIA	<i>(Italy)</i>
D.V. BRUNO	<i>(Italy)</i>
G. COLLINGRIDGE	<i>(U.K.)</i>
J. CONN	<i>(U.S.A.)</i>
F. FERRAGUTI	<i>(Austria)</i>
P. FLOR	<i>(Germany)</i>
M. KANO	<i>(Japan)</i>
J. MONN	<i>(U.S.A.)</i>
J.P. PIN	<i>(France)</i>
D.D. SCHOEPP	<i>(U.S.A.)</i>
M. WATANABE	<i>(Japan)</i>

## CONFERENCE CENTRE

***Grande Albergo Capotaormina***

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## REGISTRATION INFORMATION

### REGISTRATION FEES

Participants	€ 1.000,00
Students*	€ 500,00
Accompanying person	€ 500,00

\*verification of student status required

Registration fees includes:

Participants and students:

Access to all scientific sessions; congress kit; abstract book; welcome cocktail; coffee breaks; working lunches; social program and local transportation.

Accompanying persons:

welcome cocktail, working lunches, social program and local transportation  
he registration fee does not include the insurance of participants against personal accidents, sickness, theft or property damage.

### SHUTTLE BUS SERVICE

Participants are kindly requested to communicate the time of their departure to the organizing secretariat "Centro Organizzazione Congressi"

### SCIENTIFIC INFORMATION

Projections

- Oral presentations must be prepared in Power Point format
- Speakers are strongly recommended to save their presentations on a pen drive.
- Speakers with their presentations on personal laptop are kindly requested to go to the Multimedia Slide centre
- We kindly recommend all speakers to contact the Multimedia Slide centre the day before their presentation

Poster session

- Poster can be positioned Wednesday October 5 from 1.00 to 8.00 p.m.
- The poster board will be 100 cm (39,4 inches) wide and 140 cm (56,2 inches) high.

ECM (Italian accreditation)

Request for CME accreditation has been submitted to the Ministry of Health for the categories:

- Neurology • Psychiatry • Neurophysiology • Geriatrics • Pharmacology

## SOCIAL PROGRAM

### **Sunday, October 2**

*Grande Albergo Capotaormina*

Welcome Cocktail with music  
Leonardo Marino and Emiliana Perina

### **Monday, October 3**

*Taormina's Garden*

Dinner

*Greek Theatre in Taormina*

Opera collection by  
Tenor Maestro Giordano Lucà  
and Soprano Lady Gladys Rossi  
accompanied by Maestro Massimo Multari

### **Tuesday, October 4**

*Hotel La Plage - Isolabella*

Mediterranean party at La Plage beach  
with music and cabaret with: Leonardo  
Marino, Emiliana Perina and Lia Fiducia

### **Wednesday, October 5**

*Grande Albergo Capotaormina*

Sicilian buffet

### **Thursday, October 6**

*Grande Albergo Capotaormina*

Beach party with music

## SCIENTIFIC PROGRAM

### Sunday, October 2

- 5.00-5.10 p.m. *Welcome*  
**Symposium** Molecular determinants and regulation of mGlu receptors  
Chair: **J. P. Pin** (France) and **J. Bockaert** (France)
- 5.10-5.35 p.m. Structural dynamics of metabotropic glutamate receptors  
**J.P. Pin**, *E. Doumazane, P. Scholler, D. El-Moustaine, S. Granier, B. Mouillac, J.L. Banères, J.M. Zwier, E. Trinquet, S. Huang, J. Liu and P. Rondard (France and China)*
- 5.35- 6.00 p.m. Successful use of biotech discovery approaches for the identification of potent sweet taste enhancers  
**G. Servant** (USA)
- 6.00-6.25 p.m. Beyond GABA<sub>B</sub> receptor heteromers: insights into the role of Auxiliary Subunits  
**B. Bettler** (Switzerland)
- 6.25-6.50 p.m. One step towards understanding metabotropic glutamate receptor kinetics  
**P. Marcaggi**, *H. Mutoh, D. Dimitrov, M. Beato and T. Knöpfel (UK and Japan)*
- 6.50-7.15 p.m. 5HT<sub>2A</sub>-mGlu2 receptor heterocomplex: A new target for antipsychotic drugs  
**J. González-Maeso** (USA)
- 7.15-7.40 p.m. Chemogenomic discovery of the first selective allosteric antagonists at the GPRC6A receptor  
**H. Bräuner-Osborne**, *V.K. Bhatia, B. Christiansen, C. Clemmensen, K.B. Hansen, D.E. Gloriam, L.D. Johansen, D.S. Pedersen, S. Smajilovic and P. Wellendorph. (Denmark)*

*Welcome buffet at Grand Hotel Capotaormina*

## **Monday, October 3**

*Morning session 8.00 a.m.*

### **Symposium Regulation of synaptic transmission and plasticity**

Chair: **Z. Bashir** (UK) and **G. Collingridge** (UK)

- 8.00-8.25 a.m.** Deconstructing and reconstructing excitatory synapses  
**R. Nicoll** (USA)
- 8.25-8.50 a.m.** Toward differentiating the roles of mGlu2 and mGlu3 receptors in the rat CNS.  
**D. Lodge**, *L. Ceolin, L. Hanna, S.J. Lucas, Z.A. Bortolotto and G.L. Collingridge.* (UK)
- 8.50-9.15 a.m.** Scaffold remodeling during Long Term Potentiation enables synaptic glutamate receptor cross-talk  
*E. Moutin, F. Raynaud, J. Roger, E. Pellegrino, V. Homburger, V. Ollendorff, J. Bockaert, L. Fagni and J. Perroy* (France)
- 9.15-9.40 a.m.** Molecular mechanisms underlying a late phase of cerebellar long-term synaptic depression  
**D. J. Linden** (USA)
- 9.40-10.05 a.m.** *Coffee break*
- 10.05-10.30 a.m.** mGluR heteromers: function and pharmacology  
**P. Kammermaier** (USA)
- 10.30-10.55 a.m.** Learning-facilitated synaptic plasticity in the hippocampus is regulated by mGluR5  
*S.G. Popkirov and D. Manahan-Vaughan* (Germany)
- 10.55-11.20 a.m.** Constitutively active PKMzeta: an essential regulator of synaptic transmission in developing perirhinal cortex.  
**I. Panaccione**, *R. King, G. Molinaro, B. Rizzo, G. Battaglia, F. Nicoletti and Z. I. Bashir* (UK and Italy)

11.20-11.45 a.m. Role of group II metabotropic receptors in long-term plasticity of presynaptic vesicular release at glutamatergic synapses  
*X.L. Zhang, R.E. Nicholls, C.P. Bailey, C. Upreti, W. Müller, E.R. Kandel and P.K. Stanton (USA and UK)*

11.45- 12.10 mGluR-dependent LTD at CA3-CA1 synapses is impaired in caveolin-1 KO mice  
*A. Francesconi and M. Bennett (USA)*

*Working lunch*

## Monday, October 3

*Afternoon session 3.30 p.m.*

### **Symposium** Functional anatomy of mGlu receptors

Chair: **Y. Smith** (USA) and **F. Ferraguti** (Austria)

3.30-3.55 p.m. Metabotropic glutamate receptors in amygdala networks: relevance to fear learning  
*F. Ferraguti (Austria)*

3.55-4.20 p.m. Neuroprotective effects of metabotropic glutamate receptor 5 (mGluR5) antagonist against dopaminergic and noradrenergic neuronal degeneration in the MPTP-treated monkey model of parkinson's disease.  
*Y. Smith, G. Masilamoni, J. Bogenpohl, D. Alagille and G. Tamagnan (USA)*

4.20-4.45 p.m. Genetic dissection of mGluR1 function in cerebellar Purkinje cells  
*A. Aiba (Japan)*

4.45-5.10 p.m. Role of mGluR4 and mGluR8 in visual responses, cognition, and anxiety-like behaviors  
*R.M. Duvoisin and J. Raber (USA)*

5.10-5.35 p.m. *Coffee break*

**Symposium mGlu receptors and epilepsy**

Chair: **J. Huguenard** (USA) and **G. Van Lujtelaar** (The Netherlands)

- 5.35-6.00 p.m.** Metabotropic glutamate receptors in thalamus in relationship to epilepsy  
*C. Lee and J. Huguenard (USA)*
- 6.00-6.25 p.m.** Modulation of spike and wave discharges by individual mGlu receptor subtypes in the WAG/Rij rat model of absence epilepsy  
**R.T. Ngomba** and **G. van Lujtelaar** (Italy and The Netherlands)
- 6.25-6.50 p.m.** Unveiling physiological roles for mGlu receptors in the thalamus using positive allosteric modulators.  
**T.E. Salt** and *C.S. Copeland (UK)*
- 6.50-7.15 p.m.** Opposite effects of cannabimimetic (R+)WIN55, 212 on NMDA vs. Kainate seizures during the juvenile period: a role for group I mGluR receptors  
**L. K. Friedman** and *V. Rudenko (USA)*

*Dinner at Taormina's Garden  
Greek Theatre in Taormina opera collection*

**Tuesday, October 4**

*Morning session 8.00 a.m.*

**Symposium mGlu receptors and endocannabinoids**

Chair: **M. Kano** (Japan) and **M. Watanabe** (Japan)

- 8.00-8.25 a.m.** Endocannabinoid release and retrograde synaptic suppression mediated by group I mGluR and other G<sub>q/11</sub>-coupled receptors  
**M. Kano** (Japan)
- 8.25-8.50 a.m.** Unique inhibitory synapse with particularly rich endocannabinoid signaling machinery on pyramidal neurons in basal amygdaloid nucleus  
*T. Yoshida, M. Uchigashima, M. Yamasaki, I. Katona, M. Yamazaki, K. Sakimura, M. Kan, M. Yoshioka and M. Watanabe (Japan)*

- 8.50-9.15 a.m.** Coupling and uncoupling of the mGlu/endocannabinoid signalosome at glutamatergic synapses  
*R. Nyilas, A. Ludányi, L.C. Gregg, K. Mackie, M.Watanabe, C. Henstridge, M. Sepers, K.M. Jung, D. Piomelli, O. Manzoni, A.G. Hohmann and I. Katona (Hungary and USA)*
- 9.15-9.40 a.m.** Neuron-astrocyte communication mediated by endocannabinoid/mGluR signaling at tripartite synapses  
**A. Araque** (Spain)
- 9.40-10.05 a.m.** Interplay between group I mGlu and the endocannabinoid system in the hippocampus: studies in models of cerebral ischemia  
**D.E. Pellegrini-Giampietro, E. Landucci, T. Scartabelli, E. Gerace, F. Moroni and G. Mannaioni** (Italy)
- 10.05-10.30 a.m.** *Coffee break*
- Symposium** **mGlu receptors and cancer**  
Chair: **S. Chen** (USA) and **J.T. Wroblewsky** (USA)
- 10.30-10.55 a.m.** Glutamate addiction in mGluR1 expression human melanoma cells  
*B. Wall, J. Wangari-Talbot and S. Chen* (USA)
- 10.55-11.20 a.m.** Expression of mGluR5 induces melanoma in transgenic mice  
*K. Y. Choi, K. Chang, J. M. Pickel, J. D. Badger II and K. W. Roche* (USA)
- 11.20-11.45 a.m.** mGluR1 negatively regulates Wnt/ $\beta$ -catenin signaling in melanoma  
**T. L. Biechele, N.D. Camp<sup>1</sup>, D.M. Fass, R. M. Kulikauskas, N.C. Robin, B.D. White, C. M. Taraska, E. C. Moore, J. Muster, R. Karmacharya, S. J. Haggarty, A. J. Chien and R. T. Moon** (USA)
- 11.45-12.10p.m.** mGlu 3 receptors and chemoresistance of glioma stem-cells  
**D. Melchiorri** (Italy)

*Working lunch*

## **Tuesday, October 4**

*Afternoon session 3.00 p.m.*

### **Symposium mGlu receptors and monogenic autism**

Chair: **M. Bear** (USA) and **K. Huber** (USA)

- 3.00-3.25 p.m.** Altered mGluR5-Homer interactions contribute to mGluR5 dysfunction in Fragile X Syndrome  
*J. A. Ronesi, K. A. Collins, S.A. Hays, N.-P. Tsai, W.Guo, S. G. Birnbaum, J.-H. Hu, P.F. Worley, J. R. Gibson and K. M. Huber (USA)*
- 3.25-3.50 p.m.** Metabotropic glutamate receptors and autism: Insights from animal models of syndromic disorders  
**M. F. Bear**, *B.D. Auerbach and E. K. Osterweil (USA)*
- 3.50-4.15 p.m.** Dysregulation of mTOR signaling in Fragile X syndrome  
**S. Zukin** (USA)
- 4.15-4.40 p.m.** Abnormalities of mGlu5 receptor-dependent synaptic plasticity in UBE3A knockout mice modeling Angelman's syndrome  
*G. Molinaro, S. Piccinin, I. Panaccione, M. Pignatelli, L. di Menna, B. Riozzi, M. Bernabucci, G. Battaglia, F. Nicoletti, V. Bruno and R. Nisticò (Italy)*
- 4.40-5.05 p.m.** mGlu5 receptor blockade and Fra-X: early vs. late treatment  
**M.V. Catania** (Italy)
- 5.05-5.30 p.m.** *Coffee break*
- 5.30-5.55 p.m.** Novel mGluR5 NAMs: potential utility to treatment in fragile X syndrome and affective disorders  
**C. K. Jones**, *A. L. Rodriguez, J. M. Rooke, C. M. Niswender, K.A. Emmitte, A. S. Felts, K. P. Lawson, B. S. Bates, A. B. Blobaum, R.D. Morrison, F. W. Byers, J. S. Daniels, R.L. Carpenter, A. Healy, M. Shumway, C. W. Lindsley and P. J. Conn (USA)*

**5.55-6.20p.m.** Antagonism of mGluR5 in Fragile X: A randomized, placebo-controlled, proof-of-concept study of AFQ056, a novel, sub-type selective mGluR5 antagonist  
**G. Apostol**, S. Jacquemont, A. Curie, V. des Portes, M. G. Torrioli, E. Berry-Kravis, R. J. Hagerman, F.J. Ramos, K. Cornish, Y.He, C. Paulding, G. Neri, F. Chen, N.Hadjikhani, D. Martinet, J. Meyer, J. S. Beckmann, K. Delange, A. Brun, G. Bussy, F. Gasparini, T. Hilse, A. Floesser, J. Branson, G. Bilbe and D. Johns, (Switzerland, France, Italy, USA, Spain and Australia)

**Symposium** **mGlu receptors and peripheral organs**

Chair: **J. Cryan** (Ireland) and **P. Flor** (Germany)

**6.20-6.45p.m.** Metabotropic glutamate receptors in peripheral and non-neural tissues: Implications for drug discovery.  
**J.F. Cryan** and M. Julio-Pieper (Ireland)

**6.45-7.10 p.m.** Immune system to brain signaling and vice versa: The role of tryptophan and glutamate.  
**F. Fallarino**, C. Volpi, F. Fazio, S. Nortomaso, M. T. Pallotta, C. Orabona, C. Vacca, M. L. Belladonna, R. Bianchi, M. C. Fioretti, F. Nicoletti, P. Puccetti, U. Grohmann and R. Di Marco (Italy)

*Hotel La Plage - Isolabella Mediterranean party*

## **Wednesday, October 5**

*Morning session 8.00 a.m.*

**Symposium** **Drug Development**

Chair: **J. Monn** (USA) and **F. Gasparini** (Switzerland)

**8.00-8.20 a.m.** Molecular switches' on mGluR allosteric ligands that modulate modes of pharmacology and/or subtype selectivity  
**C.W. Lindsley** (USA)

**8.20-8.40 a.m.** AFQ056 a selective, non-competitive mGlu5 receptor antagonist in clinical development for Fragile X syndrome and L-DOPA induced dyskinesia in PD. Identification and preclinical characterization  
**F. Gasparini**, S. Ofner, P. J. Flor, G. Bilbe, K. McAllister, R. Kuhn and I. Vranesic (Switzerland)

- 8.40-9.00 a.m.** mGluR5 positive allosteric modulators: an industrial perspective  
**T. Steckler**, C.K. Jones, S. Stauffer, J.M. Bartolomé, C.M. Niswender, H. Lavreysen, G. Macdonald, C. Mackie, P. Vinson, J.S. Daniels, C.W. Lindsley and P.J. Conn (Belgium and USA)
- 9.00-9.20 a.m.** Preclinical profile of a novel metabotropic glutamate receptor 5 positive allosteric modulator: from efficacy to mechanism-based neurotoxicity  
**S. Parmentier-Batteur**, P.H. Hutson, K. Menzel, B.A. Mattson, J.H. Uslaner, T. Forest, X.F. Zhang, J.A. O'Brien, B.C. Magliaro, S.L. Huszar, A. Hugues, K.E. Lodge, M.A. Jacobson, C.A. Stump, R.M. Tynebor, N.J. Anthony and T.A. Williams (USA)
- 9.20-9.40 a.m.** Awake rat pharmacological MRI as a translational pharmacodynamic biomarker: mGluR2/3 Agonist and PAM modulation of ketamine-induced BOLD signals  
M. Day, C.-L. Chin, J. Upadhyay, **G. J. Marek**, S.J. Baker, M. Zhang, M. Mezler, G. B. Fox and G. Marek (USA)
- 9.40-10.00 a.m.** Discovery and in vitro characterization of a novel group II metabotropic glutamate receptor agonist and its oral prodrug  
**J. Monn**, D. McKinzie, C. Felder, B. Heinz, X. Wang, R. Vivier, H. Sanger, L. Walton, T. Man, H. Rudyk, B. Clark, C. Beadle, D. Tupper, S. Baker, J. Hao, M. Reinhard, S. Henry, S. Massey, L. Taboada, C. Lamas, C. Dominguez, C. Montero, A. Marcos, J. Blanco, S. Atwell, D. Thompson, S. Emtage, F. Lu, S. Swanson, D. Bedwell, A. Pak and L. Prieto (USA, UK and Spain)
- 10.00-10.20 a.m.** *Coffee break*
- 10.20-10.40 a.m.** In vivo pharmacological characterization of a novel group II metabotropic glutamate receptor agonist and its oral prodrug  
**D. McKinzie**, J. Monn, B. Johnson, J. Witkin, K. Knitowski, D. Shaw, L. Rorick-Kehn, J. Katner, K. Perry, X. Li, C. Overshiner, L. Walton, T. Man, H. Rudyk, B. Clark, C. Beadle, D. Tupper, S. Baker, J. Hao, M. Reinhard, S. Henry, S. Massey, L. Taboada, C. Lamas, C. Dominguez, C. Montero, A. Marcos, J. Blanco, S. Atwell, D. Thompson, S. Emtage, F. Lu, S. Swanson, D. Bedwell, A. Pak and L. Prieto (USA, UK and Spain)

- 10.40-11.00a.m.** 1,3-Dihydro-benzo[b][1,4]diazepin-2-one derivatives as potent non-competitive metabotropic glutamate receptor 2/3 antagonists  
**T. J. Woltering**, J. Wichmann, E. Goetschi, J. Huwyler, F. Knoflach, T. M. Ballard and S. Gatti (Switzerland)
- 11.00-11.20 a.m.** Pharmacological and molecular characterization of metabotropic Glutamate receptor 2/3 negative allosteric modulators  
**L. Lundstroem**, C. Bissantz, J. Beck, J. Messer, T. Woltering, J.G Wettstein, E. Goetschi, J. Wichmann, F. Knoflach and S. Gatti (Switzerland)

*Working lunch*

## **Wednesday, October 5**

*Afternoon session 3.30 p.m.*

### **Symposium Drug Development**

Chair: **V. Mutel** (Switzerland) and **F. Acher** (France)

- 3.30-3.50 p.m.** The development of mGlu2 positive allosteric modulators: In vitro and in vivo characterization of JNJ-40068782  
**H. Lavreysen**, J. Cid, A.A. Trabanco, W. Drinkenburg, A. Ahnaou, A. Megens, I. Biesmans, I. Van der Linden, L. Peeters, X. Langlois, P. Te Riele, F. Dautzenberg, J.R. Atack, G. Duvey, R. Lütjens, E. Le Poul and G. Macdonald (Belgium and Switzerland)
- 3.50- 4.10 p.m.** Assessing native mGlu2/3 receptor functional pharmacology in tissues derived from mouse, rat, and human, and transgenic animals  
**C. Felder**, Y. Tu, D. Schober, A. Quets, H. Xiao, M. Watt, R. Wright, K. Svensson, B. Heinz, D. McKinzie, L. Pietro and J. Monn (USA and Spain)
- 4.10-4.30 p.m.** Effects of a novel mGlu2/3 receptor agonist prodrug, LY2140023 monohydrate, on central dopaminergic and serotonergic turnover as determined in human and rat cerebrospinal fluid  
S. Lowe, R. Dean, B. Ackermann, K. Jackson, F. Natanegara, S. Anderson, J. Eckstein, E. Yuen, M. Ayan-Oshodi, M. Ho, D. McKinzie, K. Perry and **K. Svensson** (Singapore, USA and UK)

- 4.30-4.50 p.m.** Selective mGlu2/3 receptor NAM alleviate pharmacological or age-related cognitive impairment in rodents and monkeys  
**T. M. Ballard**, F. Knoflach, T. J. Woltering, E. Goetschi, R. Moog, J. Huwyler, M. Schmitt, J. Wichmann and S. Gatti (Switzerland)
- 4.50-5.10 p.m.** *Coffee break*
- 5.10-5.30 p.m.** LY2607540 (THIC): A novel, brain penetrant, positive allosteric modulator of the metabotropic glutamate receptor 2.  
**J. Schkeryantz**, K. Svensson, L. Rorick Kehn, M. Fell, J. Witkin, C. Felder, D. Mayhugh, A. Khilevich, S. Swanson, J. Catlow, B. Heinz and X. Wang (USA.)
- 5.30-5.50p.m.** New orthosteric agonists of group-III metabotropic glutamate receptors  
**F.C. Acher**, T. Courtiol, I. Brabet, C. Selvam, N. Oueslati, D. Rigault, I.A. Lemasson, S. Cesarini, H.O Bertrand, C. Goudet and J.P. Pin (France)
- Symposium** **mGlu receptor imaging**  
Chair: **J.P. Pin** (France) and **G. Tamagnan** (France)
- 5.50-6.10p.m.** <sup>18</sup>F-FPEB PET imaging targeting the mGluR5 receptor in neurodegenerative disorders  
D.Jennings J. Seibyl, O.Barret, **G. Tamagnan**, J.Batis, D.Alagille, R. Baldwin, G. Zubal, D.Russell and K. Marek (France)
- 6.10-6.30 p.m.** Reduced metabotropic glutamate receptor 5 density in major depression determined by [<sup>11</sup>C]ABP688 positron emission tomography and postmortem study  
A. Deschwanden, B. Karolewicz, A. M. Feyissa, V. Treyer, S. M. Ametamey, A. Johayem, C. Burger, Y. P. Auberson, J. Sovago, C. A. Stockmeier, A. Buck and **G. Hasler** (Switzerland)
- 6.30-6.50 p.m.** Challenges of PET tracer discovery for subtype-specific mGluR allosteric modulators  
**E. Hostetler** (USA)
- 6.50-7.10 p.m.** Tracer discovery for PET imaging of glutamatergic targets: novel strategies & lessons learned  
T. Eessalu, E. Rhoads and **V. N. Barth** (USA)

8.00 -11.00 p.m. **Poster session**

*Alcantara room*

*Sicilian buffet at Grande Albergo Capotaormina*

## Thursday, October 6

*Morning session 8.00 a.m.*

### Symposium **mGlu receptors and pain**

Chair: **R. Gereau IV** (USA) and **V. Neugebauer** (USA)

- 8.00-8.25 a.m.** Translational studies of mGlu5 NAMs for the treatment of pain  
**R.W. Gereau IV**, *M.C. Montana, B.J. Kolber, L.W. Crock and L.F. Cavallone (USA)*
- 8.25 -8.50 a.m.** mGluR5 and CB1 interactions in the medial prefrontal cortex in pain  
**V. Neugebauer**, *H. Sun, W. Ren, S. Stauffer and P.J. Conn (USA)*
- 8.50-9.15 a.m.** Loss of mGluR-dependent long-term depression in the ACC after digit amputation  
**M. Zhuo** (Canada)
- 9.15-9.40 a.m.** The mGluR2 activation machinery and treatment of chronic pain: from L-acetyl carnitine to N- acetylcysteine  
**S. Notartomaso**, *M. Bernabucci, C. Zappulla, F. Fazio, M. Cannella, M. Motolese, A. Copani, R. Gradini, R. Di Marco and S. Chiechio (Italy)*
- 9.40-10.05 a.m.** Preclinical characterization of LY2300559, a dual acting mGlu2 receptor potentiator and leukotriene CysLT1 receptor antagonist, for potential use in migraine.  
**M.P. Johnson**, *J. Schkeryantz, S. Swanson, A.N. Perkins and K.W. Johnson (USA)*
- 10.05-10.30 a.m.** Role of metabotropic glutamate receptors in the basolateral amygdala-driven prefrontal cortical deactivation or over-activation in models of inflammatory or neuropathic pain in the rat  
**S. Maione**, *E. Palazzo, L. Luongo, F. Rossi and V. de Novellis (Italy)*

- 10.30-10.55 a.m.** A new selective metabotropic glutamate receptor type 4 agonist reveals new ways to develop subtype selective orthosteric ligands with potential therapeutic effects  
**C. Goudet**, B. Vilar, T. Courtiol, T. Deltheil, T. Bessiron, I. Brabet, N. Oueslati, D. Rigault, H.O. Bertrand, H. McLean, H. Daniel, M. Amalric, F. Acher and J.P. Pin (France)
- 10.55-11.15 a.m.** Coffee break
- Symposium** **mGlu receptors and anxiety/depression**  
Chair: **A. Pilc** (Poland) and **S. Chaki** (Japan)
- 11.15-11.40 a.m.** Glutamate and depression: focus on mGlu5 receptors.  
A. Pałucha-Poniewiera, P. Brański, K. Stachowicz, JM. Wierosińska, A. Sławińska, L. Pomierny-Chamiolo, G. Nowak and **A. Pilc** (Poland)
- 11.40-12.05 a.m.** mGluR1 regulation of AMPA receptors and fear memory  
**R. Huganir** (USA)
- 12.05-12.30p.m.** Antidepressant-like effect of a metabotropic glutamate 2/3 receptor antagonist  
**Y. Ago**, S. Chaki, K. Takuma and T. Matsuda (Japan)
- 12.30-12.55 p.m.** mGluR5 expression in rodent models of depression and anxiety  
**P. Gass** (Germany)
- 12.55-1.20 p.m.** Broad spectrum activity of the mGluR5 negative allosteric modulator, GRN-529, in preclinical anxiolytic, antidepressant and analgesic models suggests the potential for efficacy in treatment resistant depression  
**Z. A. Hughes**, S. J. Neal, D. L. Smith, S. J. Sukoff Rizzo, C. M. Pulicchio, S. Lotarski, D. Bryce, S. Lu, J. M. Dwyer, M. Olsen, C. N. Bender, E. Kouranova, D. Springer, D. Li, S.V. O'Neil, T. H. Andree, G.T. Whiteside, J. Dunlop, N. J. Brandon, L.E. Schechter, S. K. Leonard, S. Rosenzweig- Lipson and R. H. Ring (USA)

*Working Lunch*

## Thursday, October 6

Afternoon session 3.15 p.m.

### Symposium **mGlu receptors and schizophrenia**

Chair: **J. Conn** (USA) and **D. McKinzie** (USA)

- 3.15 -3.40 p.m.** Allosteric modulators of Metabotropic Glutamate Receptor 5 for treatment of Schizophrenia.  
**P. J. Conn**, S. R. Stauffer, S. Zhou, J. Manka, R. Williams, M. J. Noetzel, K. J. Gregory, P. Vinson, C. M. Niswender, C. K. Jones, T. Steckler, G. MacDonald and C.W. Lindsley (USA, Belgium)
- 3.40 -4.05 p.m.** Group-II metabotropic glutamate receptors and epigenetics of schizophrenia-related genes  
**F. Matrisciano** and A. Guidotti (USA)
- 4.05-4.30 p.m.** LY2140023 monohydrate: preclinical and clinical update on the development of an mGluR2/3 agonist treatment for schizophrenia  
**B.J. Kinon** (USA)
- 4.30-4.55 p.m.** Selective mGluR2 negative allosteric modulators for the treatment of cognitive deficits associated with Alzheimer's disease  
**N. Lambeng** (Switzerland)
- 4.55-5.20 p.m.** *Coffee break*

### Symposium **mGlu receptors and drug addiction**

Chair: **A. Markou** (USA) and **R. Malenka** (USA)

- 5.20-5.45 p.m.** mGluR-dependent long-term depression in the nucleus accumbens  
**B.A. Grueter**, G. Brasjno and **R.C. Malenka** (USA)
- 5.45-6.10 p.m.** mGluR2/3 activation decreases drug seeking and taking by impacting primarily the conditioned behavioral and neurochemical effects of drugs of abuse  
**A. Markou**, M. D'Souza, S. Semenova, M. Liechti, D.J. Sheffler, P.J. Conn, R. Kuczenski, and N.D.P. Cosford (USA)

- 6.10-6.35p.m.** Metabotropic glutamate mechanisms and cocaine's addictive actions  
*E.L. Gardner, X. Li, X.-Q. Peng, J. Li, K. Spiller and Z.-X. Xi (USA)*
- 6.35-7.00 p.m.** Interactions between mGlu5 receptors and other GPCRs: relevance to drug-seeking  
*A.J. Lawrence, R.M. Brown, C.L. Adams, M. Stagnitti, J. Duncan and C Ledent (Australia and Belgium)*
- 7.00-7.25 p.m.** mGluR5 positive allosteric modulators, extinction of drug-seeking, and dendritic spine plasticity  
*M.F. Olive (USA)*
- 7.25-7.50 p.m.** Control of ethanol consumption and preference by metabotropic glutamate receptor subtype 7 expressed in striatum  
*L. Adelfinger, A. Dillinger, A. Bahi, K. Fizia, M. Dietz, F. Gasparini and P.J. Flor (Germany and Switzerland)*
- 7.50-8.15p.m** Dysregulation of mGluR2/3 and mGluR5 is a factor in compulsive behavior motivated by drugs of abuse and conventional reward: Implications for the treatment target potential of mGluRs  
*F. Weiss (USA)*

*Beach party with music at Grande Albergo Capotaormina*

## **Friday, October 7**

*Morning session 8.00 a.m.*

### **Symposium Parkinson's disease and other neurodegeneration disorders**

Chair: **G. Battaglia** (Italy) and **M. Amalric** (France)

- 8.00- 8.25a.m.** Neuroprotective and neurotoxic signaling of mGlu1 receptors  
*S.Pshenichkin, A.C. Emery, G.R.Takoudjou, J. DiRaddo, H. Hathaway, E.Grajowska, B.B.Wolfe and J.T.Wroblewski (USA)*
- 8-25-8.50 a.m.** DHPG and NMDA preconditioning induce ischemic tolerance with differential mechanisms  
*E. Gerace, E. Zianni, F. Gardoni, T. Scartabelli, A. Masi, E. Landucci, F. Moroni, G. Mannaioni, M. Di Luca and D.E. Pellegrini-Giampietro (Italy)*

- 8.50-9.15 a.m.** Targeting Group I metabotropic glutamate receptors in amyotrophic lateral sclerosis  
*T. Bonifacino, F. Giribaldi, A. Puliti, I. Musante, M. Melone, M. Milanese, P. Rossi, F. Conti, A. Pittaluga and G. Bonanno (Italy)*
- 9.15-9.40a.m.** Group-II metabotropic glutamate receptors as potential targets for the treatment of amyotrophic lateral sclerosis  
**G. Battaglia**, B. Riozzi, G. Molinaro, D. Bucci, M. Storto, S. Pallottino, F. Nicoletti and V. Bruno (Italy)
- 9.40-10.05a.m.** Role of optineurin and huntingtin in the regulation of mGluR5 signaling  
**S. Ferguson** (Canada)
- 10.05-10.30 a.m.** Anti-parkinsonian and anti-dyskinetic effects of dipraglurant (ADX48621), a novel mGluR5 negative allosteric modulator in clinical development  
**S. Poli** (USA)
- 10.30-10.55 a.m.** mGluR5 as a target for the treatment of L-DOPA-induced dyskinesia  
**M. A. Cenci** (Sweden)
- 10.55-11.20 a.m.** *Coffee break*
- 11.20-11.45 a.m.** mGluR5 NAM, MRZ-8676 as a potential treatment for L-DOPA-induced dyskinesia  
**W. Danysz**, A. Dekundy, A. Gravius, R. Zemribo, M. Hechenberger, K.U. Klein, C. Tober, M. van der Elst, F. Mela and C.G. Parsons (Germany and Latvia)
- 11.45-12.10 p.m.** mGluR5-mediated regulation of cAMP/DARPP-32 signaling and AMPA receptor phosphorylation in striatopallidal medium spiny neurons  
*M.T. Dell'Anno, S. Pallottino and G. Fisone* (Sweden)

- 12.10-12.35 p.m.** AFQ056 treatment of levodopa-induced dyskinesias: results of 2 randomized controlled trials  
*G. Apostol, D. Berg, J. Godau, C. Trenkwalder, K. Eggert, I. Csoti, A. Storch, H. Huber, M. Morelli-Canelo, M. Stamelou, V. Ries, M. Wolz, C. Schneider, T. Di Paolo, **F. Gasparini**, S. Hariry, M. Vandemeulebroecke, W. Abi-Saab and D. Johns (Germany, Canada and Switzerland)*
- 12.35- 1.00 p.m.** mGlu4 receptor positive allosteric modulator development for the treatment of CNS disorders  
***C. M. Niswender**, C. K. Jones, C. R. Hopkins, A.D. Thompson, M. Bubser, D. Engers, R. D. Gogliotti, A. E. Blobaum, J. M. Salovich, Y. Y. Cheung, R. D. Morrison, E. S. Dawson, R. Zamorano, K. A. Brewer, J. S. Daniels, C. W. Lindsley and P. J. Conn (USA)*
- 1.00-1.25 p.m.** Orthosteric group III mGlu receptor agonists for Parkinson's disease treatment: symptomatic and neurochemical action on pallidal synaptic transmission  
*T. Deltheil, N. Turle-Lorenzo and **M. Amalric** (France)*
- 1.25- 1.50 p.m.** Novel metabotropic glutamate receptor 4 (mGluR4) allosteric potentiators for the treatment of Parkinson's disease and anxiety  
***B. Campo** (Switzerland)*
- 1.50 -2.15 p.m.** mGlu4 receptor potentiation for the treatment of Parkinson's disease  
***M. A. Uberti**, M. D. Bacolod, H. N. Jimenez, M. Cajina, D. Doller, P. Gubellini and K. E. Bennouar (France)*

*Working Lunch*

## POSTER SESSION

**Wednesday, October 5**

8.00 -11.00 p.m. - Alcantara Room

### AUTISM

- 1) Mirror symmetric alterations in synaptic plasticity in the mouse models of Fragile X syndrome and Tuberous sclerosis  
*B.D. Auerbach, E. Osterweil and M.F. Bear (USA)*

### EPILEPSY

- 2) Pharmacological activation of metabotropic glutamate receptor subtype 5 reduces Spike and Wave Discharges in the WAG/Rij rat model of absence epilepsy  
*I. Santolini, V. D'Amore, C.M. van Rijn, A. Simonyi, A. Prete, P.J. Conn, C. Lindsley, S. Zhou, P.N. Vinson, A.L. Rodriguez, C.K. Jones, S.R. Stauffer, F. Nicoletti, G. van Luijtelaar and R.T. Ngomba (Italy and USA)*

### NEURODEGENERATION

- 3) mGlu1 controls the expression of pro-apoptotic protein Hrk in cerebellar neurons  
*J. DiRaddo, G.R. Takoudjou, H. Hathaway, E.J. Miller, A.C. Emery, S. Pshenichkin, E. Grajkowska and J.T. Wroblewski (USA)*
- 4) Reduced cAMP levels, Akt activation and p65-c-Rel dimerization: mechanisms involved in the protective effects of mGluR3 agonists in cultured astrocytes.  
*D. Durand, L. Carniglia, C. Caruso and M. Lasaga (Argentina)*
- 5) The protective effect of glutamate in primary cultures of cerebellar neurons is mediated through mGlu1-dependent activation of the MAPK cascade.  
*H. Hathaway, S.Pshenichkin, A.C. Emery, J. DiRaddo, G.R. Takoudjou, E. Grajkowska and J.T. Wroblewski (USA)*

- 6) mGlu1 receptors and endocannabinoids: neuroprotection studies in an in vitro model of cerebral ischemia  
*E. Landucci, T. Scartabelli, E. Gerace, F. Moroni, G. Mannaioni and D.E. Pellegrini-Giampietro (Italy)*
- 7) Neuroprotection following postconditioning via group I mGlu receptor activation is coupled to the PI3K/Akt/GSK3 $\beta$  signalling pathway in a rat organotypic hippocampal slice model of cerebral ischemia  
*T. Scartabelli, E. Gerace, E. Landucci, F. Moroni and D.E. Pellegrini-Giampietro (Italy)*

## **PARKINSON'S DISEASE**

- 8) Synergy between L-DOPA and a novel positive allosteric modulator of metabotropic glutamate receptor 4: implications for Parkinson's disease treatment  
*K.-E. Bennouar, M.A. Uberti, M.D. Bacolod, M. Cajina, H.N. Jimenez, C. Melon, D. Doller, L. Kerkerian-Le Goff and P. Gubellini (France and USA)*
- 9) Early changes in the transcript of mGlu4 receptors in mice treated with haloperidol or 1-methyl-4-phenyl-1,2,3,6,- tetrahydropyridine  
*M. Cannella, M. Motolese, D.Bucci, G. Molinaro, V. Bruno, F. Nicoletti and G. Battaglia (Italy)*
- 10) Suppression of NMDA receptor-mediated dopaminergic cell (MES23.5) death by  $\alpha$ -synuclein involves RAB5B-mediated endocytosis  
*F. Cheng, X. Li, Y. Li, T. Wang, G. Liu, A. Baskys, P.Chan, U. Kenji and S. Yu. (USA and Japan)*
- 11) Discovery and SAR development of a novel series of N-4-(2,5-dioxopyrrolidin-1-yl)-phenylpicolinamides, including ML182, as positive allosteric modulators of metabotropic glutamate receptor 4: a novel approach for the treatment of Parkinson's disease  
*D.W. Engers, U.M. Le, Y. Zhou, A.D. Thompson, S. Jadhav, R.D. Gogliotti, S.R. Lindsley, J.L. Bolinger, U.N. Menon, R. Zamorano, J.S. Daniels, R. Morrison, A.L. Blobaum, C.K. Jones, C.D. Weaver, P.J. Conn, C.W. Lindsley, C.M. Niswender and C.R. Hopkins (USA)*

- 12) Neuroadaptation induced by early life stress in the nigrostriatal motor circuit: prenatal restraint stress as a model of “compensated” parkinsonism  
*J. Marrocco, T. Cassano, G. Van Camp, J. Mairesse, M-L. Reynaert, M. Cannella, M. Motolese, G. Battaglia, A. Pittaluga, Nicoletti F., S. Morley-Fletcher and S. Maccari (France and Italy)*
- 13) Blockade of abnormal cortical beta oscillations observed in the 6-OHDA model of Parkinson’s disease with mGlu5 antagonists.  
*K.G. Phillips, T.K. Murray, D.O. Kelleth, D.M. Edgar, M.W. Jones, K.A. Wafford and M.J. O’Neill (UK)*

## PSYCHIATRIC DISORDERS

- 14) Characterisation of mGlu5 PAMs in behavioural assays for schizophrenia, anxiety, and cognition  
*B. Biemans, L. Aubert, C. Fischer, C. Diener, R. Gasser, W. Spooren, G. Jaeschke and L. Lindemann (Switzerland)*
- 15) Blockade of in vivo accumulation of [<sup>3</sup>H]ABP688 by mGluR5 NAMs: MPEP and MTEP, relationship with anxiolytic activity  
*A. Bobok, B. Kiss, K. Sághy, I. Gyertyán and K. Gál (Hungary)*
- 16) Involvement of mammalian target of rapamycin signaling in antidepressant effect of mGlu 2/3 receptor antagonist in mice  
*S. Chaki, H. Koike and M. Iijima (Japan)*
- 17) Addressing the functional cross-talk of mGlu<sub>2</sub> and 5-HT<sub>2A</sub> by measurement of intracellular signaling pathways  
*H.K. Delille, J. Becker, S. Burkhardt, B. Bleher, L. Unger, G.C. Terstappen, H. Schoemaker, G.J. Marek and M. Mezler (Germany)*
- 18) Development of novel metabotropic glutamate receptor 7 (mGluR7) negative allosteric modulators for treatment of anxiety disorders  
*T. Finn, D. Charvin, B. Campo, B. Bournique, M. Fonsi, S. Poli, F. Girard, E. Le Poul, L. Tang, and G. Duvey (Switzerland)*

- 19) Increased trait anxiety in infancy caused by maternal stress  
*J. Mairesse, C. Laloux, G. Van Camp, M.L. Reynaert, J. Marrocco, H. Bouwalerh, A. Giovine, I. Branchi, S.G. Bouret, S. Morley-Fletcher, G.E. Bergonzelli, R. Gradini, F. Nicoletti, M. Darnaudéry and S. Maccari (France, Italy, USA and Switzerland)*
- 20) Epigenetic programming induced by prenatal stress leads to a reduced expression of synaptic-vesicle associated proteins and a selective impairment of glutamate release in the adult hippocampus  
*S. Morley-Fletcher, J. Marocco, J.Mairesse, A. Pittaluga, M. Summa, R. Ngomba, F. Nicoletti and S. Maccari (France and Italy)*
- 21) Acetyl-L-carnitine causes antidepressant-like effect mediated by group-III mGlu Receptors in spontaneously depressed FSL rats  
*C. Nasca, D. Xenos, Y. Barone, A. Caruso, S. Scaccianoce, G. Battaglia, <sup>1</sup>S. Rosati, F. Matrisciano, A. Mathé, G. De Lorenzo, C. Njolu, A. Pittaluga, A. Siracusano, A. Koverech and F. Nicoletti (Italy, Sweden and USA)*
- 22) Association between a genetic marker in HTR2A and response to the mGlu2/3 agonist LY2140023 monohydrate in the treatment of schizophrenia  
*L.K. Nisenbaum, F. Zhao, A.C.M. Downing, L.M. Munsie, P. Chen, B.A. Fijal, M.R. Smith, B.A. Millen, D.H. Adams and B.J. Kinon (USA)*
- 23) Impact of early-life stress on group III mGlu receptor levels in the rat hippocampus: Effects of ketamine, electroconvulsive shock therapy and fluoxetine treatment  
*R.M. O'Connor, M. Pusceddu, T.G. Dinan, J. F. Cryan (Ireland)*
- 24) Differential proteome analysis of mouse cortical neuronal cells treated with “antipsychotic-like” and “anxiolytic-like” mGlu2/3 receptor agonists  
*R. Orlando, M. Borro, M. Motolese, G. Gentile, M. Cannella, G. Battaglia, M. Simmaco, F. Nicoletti and G. Molinaro (Italy)*
- 25) Potential antidepressant-like activity of a potent and highly selective mGlu5 antagonist, MTEP, is serotonin-dependent  
*A. Palucha-Poniewiera, P. Brański, J.M. Wierońska and A. Pilc (Poland)*
- 26) mGlu7 receptor activation produces potential anxiolytic and anti-obsessive-compulsive effects in mice.  
*K. Stachowicz, JM. Wierońska, A. Stawińska and A. Pilc (Poland)*

- 27) Acetyl-L-carnitine promotes adult hippocampal neurogenesis *in vitro* via NF-κB-mediated upregulation of mGlu2 receptors.  
*M.M. Valente, V. Bortolotto, P.L. Canonico, A. Koverech and M. Grilli (Italy)*
- 28) mGlu2/3 agonist and antagonist effects on sleep and wakefulness in rodents –dependence on receptor subtype.  
*K.A Wafford, E. Shanks, W. Seidel, A. McCarthy, D. Kellett and D. Edgar (UK)*
- 29) The involvement of mGlu4, yet not the mGlu7 receptor, in the potential antipsychotic-like action of mGlu group III receptor ligands: focusing on LSP1-2111 and AMN082 activity.  
*JM. Wieronska, K. Stachowicz, P. Branski, A. Palucha-Poniewiera, T. Lech, F. Acher and A. Pilc (Poland and France)*
- 30) An unanticipated antidepressant-like effect of an mGlu2 receptor agonist  
*J.M. Witkin, X. Li, C. Overshiner, K. Ellis, D. Bedwell, S. Swanson, L. Rorick-Kehn, J. Katner, K.W. Perry, L. Prieto, D.L. McKinzie and J. Monn (USA and Spain)*

## PHARMACOLOGY

- 31) *In vitro* and *in vivo* characterization of two mGlu2/3 negative allosteric modulators  
*I. Biesmans, A. Megens, J.A. Bouwknecht, R. Wouters, X. Langlois, P. Te Riele, A.A. Tabanco, C.M. Wassvik, J.R. Atack and H. Lavreysen (Belgium and Spain)*
- 32) Drug metabolism and disposition of a novel N-4-(2,5-dioxopyrrolidin-1-yl)-phenylpicolinamide series of positive allosteric modulators of metabotropic glutamate receptor 4: identification of ML182 as an orally efficacious mGluR4-PAM  
*A. L. Blobaum, R. Morrison, S. Jadhav, D. W. Engers, S. R. Lindsley, Y. Zhou, R. D. Gogliotti, C. K. Jones, C. M. Niswender, P. J. Conn, C. W. Lindsley, C. R. Hopkins and J. S. Daniels (USA)*
- 33) Searching for a new potential mGluR4 positive allosteric modulator.  
*P. Brański, A. Bojarski, G. Burnat, P. Chorobik, R. Bugno, R. Kurczab, J. Staroń, B. Chruścicka, A. Palucha-Poniewiera and A. Pilc (Poland)*

- 34) Discovery and characterization of novel metabotropic receptor 4 (mGluR4) allosteric potentiators  
*S. Célanire, C. Boléa, S. Brückner, N. Liverton,, D. Charvin, F. Hess, S. Poli, B. Bournique, M. Fonsi, S. Polsky-Fisher, C. Gibson, F. Girard, S. Browne, A. Dilella, E. Lis, B. Luo, E. Le Poul, I. Reynolds and B. Campo (Switzerland and USA)*
- 35) mGluRs FRET sensors as new tools for high-throughput drug screening  
*E. Doumazane, P. Scholler, L. Fabre, G. Donsimoni, A. Jean, P. Rondard, E. Trinquet, J.-P. Pin and J. M. Zwieter (France)*
- 36) Shape-based virtual screens to identify novel group I and III mGlu receptor allosteric modulator chemotypes  
*E. S. Dawson, J.A. Smith, C.M. Niswender, C.R. Hopkins, R. Gogliotti, S. Stauffer, C.W. Lindsley and P.J. Conn (USA)*
- 37) Identification, synthesis and SAR investigation of a series of novel Metabotropic Glutamate Receptor 5 (mGluR5) negative allosteric modulators  
*G. Duvey, B. Perry, C. Pesenti, D. Charvin, N. Lambeng, T. Donovan-Rodriguez, S. Poli, E. Le Poul, S. Gagliardi and B. Bonnet (Switzerland and Italy)*
- 38) Xanthurenic acid as a novel putative agonist of group II metabotropic glutamate receptors  
*F. Fazio, G. Molinaro, G. Mauro, L. Iacovelli, R.T. Ngomba, L. Di Menna, S. Notartomaso, V. D'Amore, C. Nasca, S. Romano, C. Zappulla, G. Battaglia, F. Nicoletti, V. Bruno and R. Di Marco (Italy)*
- 39) Native tissue pharmacology of the mGluR2 selective agonist, LY2812223  
*C. Felder, Y. Tu, D. Schober, A. Quets, H. Xiao, M. Watt, E. Siuda, E. Nisenbaum, B. Heinz, D. McKinzie, L. Prieto and J. Monn (USA and Spain)*
- 40) SAR and in vitro/vivo evaluation of a novel series of substituted aryl ether benzamides as negative allosteric modulators of mGlu<sub>5</sub>  
*A. S. Felts, B. S. Bates, A. L. Rodriguez, U. N. Menon, S. Jadhav, A. B. Blobaum, F. W. Byers, J. S. Daniels, K. P. Lawson, C. K. Jones, P. J. Conn, C. W. Lindsley and K. A. Emmitte (USA)*
- 41) Identification of an mGluR5 NAM lead among thienopyridines  
*K. Gál, A. Bielik, K. Nógrádi, Gy. Domány, Gy. M. Keserü, A. Bobok, B. Kiss, B. Benkő, M. Vastag (Hungary)*

- 42) Application of an operational model of allosterism to investigate the structural determinants of positive allosteric modulation of metabotropic glutamate receptor 5  
*K. J. Gregory, E.N. Dong, S.D. Reiff, J.M. Rook, M.J. Noetzel, H.P. Cho, K.W. Kaufmann, J.T. Manka, Y.S. Zhou, P.N. Vinson, S.R. Stauffer, C.M. Niswender, C.W. Lindsley, J. Meiler and P.J. Conn (USA and Australia)*
- 43) Pharmacological profiling of native group II metabotropic glutamate receptors in primary cortical neuronal cultures using FLIPR  
*L. Hanna, H. Sanger, E.M. Colvin, D. Ursu, R. Vivier, Z.A. Bortolotto, D. Lodge, G.L. Collingridge, J. A. Monn and L.M. Broad (UK, Korea and USA)*
- 44) Rational Design of Negative Allosteric Modulators of mGluR5  
*L. W. Hardy, D. F. Burdi, R. Hunt, M. Dethieux, M. Orsini, M. S. Quinton, L. Saraswat, R. Lew and K. Spear (USA and Belgium)*
- 45) In vitro pharmacology of LY2812223, a novel group II mGluR orthosteric agonist  
*B.A. Heinz, X. Wang, A. Vandergriff, C. Felder, D. McKinzie, J. Monn, L. Prieto, H. Sanger and R. Vivier (USA, Spain and UK)*
- 46) Discovery of orally active 5,6,7,8-tetrahydroquinazolin-5-yl amide derivatives as mGlu5 receptor negative allosteric modulators  
*G. Li, M. April, J. Austin, H. Zhou, X. Pu, N. J. Boyle, M. A. Uberti, R. M. Brodbeck, M. D. Bacolod, D. G. Smith and D. Doller (USA)*
- 47) Heteroarylcylohexylamides as mGlu5 receptor negative allosteric modulators  
*G. Li, M. April, H. Zhou, X. Pu, M. A. Uberti, R.M Brodbeck, M. Cajina, G. Chandrasena and D. Doller (USA)*
- 48) Cinnabarinic acid: a novel endogenous agonist of mGlu4 metabotropic glutamate receptors  
*L. Lionetto, F. Fazio, G. Molinaro, R.T. Ngomba, S. Notartommaso, M. Curini, O. Rosati, P. Scarselli, M. Simmaco, R. Di Marco, G. Battaglia, V. Bruno, H. Bertrand, F. Acher, J.P. Pin, F. Nicoletti and C. Goudet (Italy and France)*
- 49) Structures of apo and agonist bound human mGluR2 extracellular domain  
*F. Lu, J. Monn, M. Kearins, S. Antonyamy, D. Clawson, A. Zhang, T. Gheyi, M. Russell and S. Atwell (USA)*

- 50) Molecular determinants of the selective interaction of positive allosteric modulators with the transmembrane region of metabotropic glutamate receptor 2  
*L. Lundström, C. Bissantz, J. Beck, J.G. Wettstein, T.J. Woltering, J. Wichmann and S. Gatti (Switzerland)*
- 51) Use of pharmacodynamic measures to demonstrate functional central activity of a novel group II metabotropic glutamate receptor agonist prodrug  
*D. McKinzie, B. Johnson, L. Thompson, W. Seidel, D. Edgar, K. Wafford, B. Gitter, J. Horn, J. Peters, J. Meyer, P. Territo, L. Prieto and J. Monn (USA, UK and Spain)*
- 52) Behavioral and neurochemical pharmacology of a novel group II metabotropic glutamate receptor agonist and its prodrug  
*D. McKinzie, B. Johnson, K. Knitowski, D. Shaw, L. Rorick-Kehn, J. Katner, K. Perry, M. Johnson, L. Prieto and J. Monn (USA and Spain)*
- 53) Binding mode of a novel MPEP-derived metabotropic glutamate receptor subtype 5 (mGluR5) NAM, 1,3-bis(pyridin-2-ylethynyl)benzene  
*C. Mølck, K. Harpsøe, D. E. Gloriam, B. H. Kaae, H. N. Jimenez, M. A. Uberti, S. Topiol, R. P. Clausen, U. Madsen, S. M. Nielsen, J. M. Mathiesen and H. Bräuner-Osborne (Denmark and USA)*
- 54) Characterization of novel metabotropic glutamate receptor 5 positive allosteric modulators utilizing *in vitro* and *in vivo* studies  
*M.J. Noetzel, K.J. Gregory, J.M. Rook, P.N. Vinson, H.P. Cho, S.R. Stauffer, Z. Xiang, J.S. Daniels, C.M. Niswender, C.W. Lindsley and P.J. Conn (USA)*
- 55) Identification of amino acids important for positive and negative allosteric modulation of the metabotropic glutamate receptor 2.  
*L. Peeters, H. Lavreysen, S. Masure, L. Gabriëls, G. Tresadern, J. Cid and J.R. Atack (Belgium and Spain)*
- 56) Synthesis of LY2812223, a novel group II mGlu receptor agonist, and identification of LY2979165, an effective oral prodrug.  
*L. Prieto, L. Walton, T. Man, H. Rudyk, B. Clark, C. Beadle, D. Tupper, S. Baker, J. Hao, M. Reinhard, S. Henry, S. Massey, L. Taboada, C. Lamas, C. Dominguez, C. Montero, A. Marcos, J. Blanco, S. Atwell, D. Thompson, S. Emtage, F. Lu, S. Swanson, D. Bedwell, D. McKinzie, A. Pak and J. Monn (USA, UK and Spain)*

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*S. R. Stauffer, S. Zhou, J. Manka, A. Rodriguez, M. J. Noetzel, K. J. Gregory, P.N. Vinson, C. M. Niswender, E. Dawson, C. K. Jones, R. Lambert, A. G. Thompson, J. S. Daniels, T. Bridges, H. Lavreysen, J. M. Bartolomé, C. Mackie, T. Steckler, G. MacDonald, C.W. Lindsley and P. J. Conn (USA and Belgium)*
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*I. Van der Linden, L. Peeters; I. Biesmans, J.I. Andrés, M. Vliegen, P. TeRiele, X. Langlois, J.R. Atack and H. Lavreysen (Belgium)*
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*J. Wichmann, T. M. Ballard, S. Gatti, M. Graf, J. Huwyler, F. Knoflach and T. J. Woltering (Switzerland)*
- 61) Development and cross-species evaluation of GTPγ<sup>35</sup>S autoradiography methods to measure functional activity of selective mGlu2 potentiators in native tissues  
*R. Wright, M. Johnson, M. Muhlhauser and K. Svensson (USA)*
- 62) Selective agonists of mGlu3 receptors: N-acetylaspartylglutamate (NAAG) and 2-hydroxymethylglutamate (HMG)  
*B. Wroblewska, S. Pshenichkin, E.J. Miller, J. DiRaddo, E.Grajkowska and J.T. Wroblewski (USA)*

## SYNAPTIC PLASTICITY

- 63) Activation of group II metabotropic glutamate receptors induces long-term depression of excitatory synaptic transmission in the substantia nigra pars reticulata  
*K.A. Johnson, C.M. Niswender, P.J. Conn and Z. Xiang (USA)*

- 64) Role of mGluR8 in hippocampal synaptic transmission and plasticity  
*M. Mercier, Z. Bortolotto, G. Collingridge and D. Lodge (UK)*

### **FUNCTIONAL ANATOMY**

- 65) Actions of Xanthurenic Acid, an endogenous Group II mGlu receptor agonist, on sensory transmission in the thalamus  
*C.S. Copeland, S.A. Neale and T.E. Salt (UK)*
- 66) Sodium-dependent GABA release promoted by metabotropic glutamate receptors in amacrine cells of the chicken retina  
*E. M. Guimarães-Souza, P. F. Gardino, F. G. de Mello and K. C. Calaza (Brazil)*
- 66) Pharmacological characterization of the group II metabotropic glutamate receptors in the temporoammonic pathway of the hippocampus  
*L. Hanna, Z.A. Bortolotto, G.L. Collingridge and D. Lodge (UK and Korea)*
- 67) Presynaptic mGlu7 receptor inhibits the KCl-induced release of GABA in mouse hippocampus  
*M. Summa, S. Di Prisco, C. Usai and A. Pittaluga (Italy)*

### **DRUG ADDICTION**

- 68) Design, synthesis, and evaluation of novel metabotropic glutamate subtype-2 (mGlu<sub>2</sub>) receptor positive allosteric modulators (PAMs) in rodent models of drug dependence  
*N. Cosford, R. Dhanya, S. Sidiq, D. Sheffler, H. Nickols, A. Herath, L. Yang, R. Dahl, R. Ardecky, S. Semenova, P.J. Conn and A. Markou (USA)*
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*B. Gitter, J. Horn, J. Peters, J. Meyer, J. Monn, D. McKinzie and P. Territo (USA)*

### **CELL CYCLE REGULATION AND CANCER**

- 70) Wnt/ $\beta$ -catenin signaling and AXIN1 regulate apoptosis mediated by inhibition of BRAFV600E kinase in human melanoma  
*T. Biechele (USA)*

- 71) mGlu1 receptors control the proliferation of cancer cells by a G protein-independent mechanism.  
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- 72) mGluR1 positive melanoma-initiating cells show drug resistance ability  
*E. Mastrantoni, D. Melchiorri and S. Chen (Italy and USA)*
- 73) The selective mGluR2/3 antagonist, LY341495, enhances chemosensitivity of colon cancer stem cells to standard chemotherapy  
*P. Mosillo, P. Spinsanti, F. Serone, F. Azzollini, B. Turriziani, L. Ricci-Vitiani, F. Nicoletti and D. Melchiorri (Italy)*
- 74) Determining the role of metabotropic glutamate receptors in glioma  
*H.H. Nickols, J.M. Rook, N. Byun and P.J. Conn (USA)*
- 75) mGlu1 and cell cycle interactions in the developmental apoptosis of rat cerebellar granule neurons.  
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*D. Sferra, C. Zappulla, F. Biagioni, P. Scarselli, S. Notartomaso, G. Mallel, V. Russo, F. Fazio, F. Nicoletti, F. Fornai and R. Di Marco (Italy)*
- 77) Beneficial effect of mGlu4 receptor activation on multiple animal models of autoimmune disease  
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### RECEPTOR CHARACTERIZATION AND SIGNALING

- 78) An assessment of brain metabotropic glutamate receptor 5 (mGluR5) occupancy for STX107 in non-human primates  
*O. Barret, G. Tamagnan, R. Rush, D. Lanzetta, N. Uddin and J. Seibyl (USA)*

- 79) A Wistar rat strain lacking mGlu2 receptors: initial phenotyping  
*L. Ceolin, G.R.I Barker, E.C. Warburton, Z.A. Bortolotto, G.L. Collingridge and D. Lodge (UK)*
- 80) Structural insights into metabotropic glutamate receptors activation  
*D. El-Moustaine, S. Huang, E. Doumazane, P. Scholler, J.-L. Banères, B. Mouillac, J. Liu, J. M. Zwier, E. Trinquet, S. Granier, J.-P. Pin and P. Rondard (France and China)*
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- 82) Regulation of recombinantly expressed mGlu7 receptors by G protein-coupled receptor kinases.  
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- 83) Neurochemical characterisation of group II metabotropic receptor knockout mice.  
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- 84) Progress towards a structural understanding of selective activation of mGlu3 over mGlu2 receptors.  
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- 86) Compensatory molecular and functional mechanisms in neurons of the Grm1<sup>crv4</sup> mouse, a murine model for ataxia lacking the mGlu1 receptor  
*P. I. A. Rossi, I. Musante, M. Summa, A. Pittaluga, M. Ikehata, M. P. Rastaldi, R. Ravazzolo and A. Puliti (Italy)*

- 87) A new approach to analyze cell surface mGluRs reveals allosteric switches during activation and possible heterodimers  
*P. Scholler, E. Doumazane, L. Fabre, G. Donsimoni, J. M. Zwier, E. Trinquet, P. Rondard and J.-P. Pin (France)*
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- 89) Investigation of the group II metabotropic glutamate receptor subtype responsible for increased cyclic AMP production and reduced excitatory activity caused by co-activation of  $\beta$ -adrenergic and mGlu<sub>2/3</sub> receptors  
*D.J. Sheffler, A.G. Walker and P.J. Conn (USA)*
- 90) Group II metabotropic glutamate receptors signal via Src kinase to modulate NMDAR-currents in CA1 neurons  
*C.H. Trepanier, M.F. Jackson, J.P. Conn, T. Nakazawa, T. Yamamoto and J.F. MacDonald (Canada, USA and Japan)*
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*S.Yin, R. Zamorano, P.J. Conn and C.M. Niswender (USA)*

## **PAIN**

- 92) LY2491503, A Novel mGluR1 Antagonist for Persistent Pain: Preclinical and Clinical Studies  
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- 93) Strain-dependency of the analgetic effect of Parecoxib is related to differences in the cannabinoid system.  
*H. Schröder, V. Höllt and A. Becker (Germany)*
- 94) Spinal mGlu4 activation inhibits hyperalgesia in animal models of chronic pain by a modulation of the glutamatergic neurotransmission  
*B. Vilar, J. Busserolles, B. Ling, E. Chapuy, F. Acher, J.P. Pin, A. Eschalier and C. Goudet (France)*

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