9th INTERNATIONAL MEETING ON METABOTROPIC GLUTAMATE RECEPTORS

TAORMINA-SICILY-ITALY
October 1 - 6, 2017
CONFERENCE CENTRE

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DATE TO REMEMBER

Late registration – deadline July 15th, 2017
Hotel reservation – deadline June 15th, 2017
Abstract submission - deadline June 30th, 2017

MEETING WEB SITE

www.mglu.it In the web site you will find all relevant information on the Meeting on program as well congress registration and hotel accommodation. The website will be kept up-to-date in the months leading up to the Meeting.
**Sunday, October 1st**

5:00 - 5:10 p.m. **Welcome**

**OPENING SYMPOSIUM P.M.**

**Heterodimeric class-C GPCRs and opto-control of mGluRs**
Chair: J.P. Pin (France) and P.J. Kammermeier (USA)

5.10-5.35 Assessing the stoichiometry of group I mGluR heteromers
P.J. Kammermeier (USA)

Linking the GABA<sub>B</sub> Receptor Proteome to Physiology
5.35-6.00 B. Bettler (Switzerland)

6.00-6.25 Optical dissection of mGluR assembly and cooperativity
J. Levitz (USA)

6.25-6.50 Allosteric control of an asymmetric transduction in the mGlu2-4 heterodimer and pharmacological evidence of their existence in neurons
J.P. Pin (France)

6.50-7.15 Precise dynamic photocontrol of native mGluRs with azobenzene allosteric ligands
A. Llebaria (Spain)

7.15-7.40 Shining light on metabotropic glutamate receptors in vivo
C. Goudet (France)
Monday, October 2nd
Morning session 8.00 a.m.

Structural and functional dynamics of mGluRs and receptor-receptor cross-talk
Chair: J. Bockaert (France) and R. Rondard (France)

8.00-8.25 Structure based drug design applied to the mGlu5 receptor. F. Marshall (UK)

8.25-8.50 Structural mechanisms of ligand-dependent activation in class C GPCRs Q.R. Fan (USA)

8.50-9.15 Structural dynamics of single metabotropic glutamate receptors in solution E. Margeat (France)

9.15-9.40 Dynamics and allostery of the metabotropic glutamate receptors P. Rondard (France)

9.40-10.05 Break

10.05-10.30 Molecular determinants regulating mGlu5 trafficking K. Roche (USA)

10.30-10.55 Serotonin 5-HT2A receptor-dependent phosphorylation of glutamate mGlu2 receptor at Ser843 promotes mGlu2-operated Gi/o signaling J. Bockaert (France)

10.55-11.20 Functional partnership between mGlu3 and mGlu5 receptors in neurons V. Bruno (Italy)
Monday, October 2nd

Afternoon session 2.15 p.m.

**Regulation of synaptic plasticity and epileptogenesis**

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

2.15-2.40 A null Grm2 cys407* mutant rat; aspects of the resulting phenotype
D. Lodge (UK)
RNA methylation and mGluR synaptic plasticity
Z. Bashir (UK)

2.40-3.05 Role of mGluRs in hippocampal synaptic plasticity
J. Georgiou (Canada)

3.05-3.30 Mechanisms of mGluR-LTD in Hippocampal Area CA2
S. Dudek (USA)

3.30-3.55 Modulation of hippocampal mGlu-LTD by L-type calcium channels: mechanisms and chronic alteration by early life seizures
T. Benke (USA)

3.55-4.20 Group I metabotropic glutamate receptors at the core of hippocampal information processing and long-term encoding.
D. Manahan-Vaughan (Germany)

4.20-4.45 Break

4.45-5.10 Role of the mGlu7 receptor in epileptogenesis
F. Bertaso (France)

5.10-5.35 Acute Anticonvulsant Effects of Cannabidiol in Immature Rats
L.K. Friedman (USA)

Monday, October 2nd

Afternoon session 5.35 p.m.

**Group I mGluR Signaling in Synaptic Function and Plasticity**

Chair: M. Kano (Japan) and D. Lodge (UK)

5.35-6.00 Ca2+ homeostasis and beyond: Novel role for Orai2 in mGluR1-dependent synaptic transmission
J. Hartmann (Germany)

6.00-6.25 mGluR1-dependent synapse refinement.
M. Watanabe (Japan)

6.25-6.50 BDNF to TrkB signaling regulated by mGlu1 promotes climbing fiber synapse elimination in the developing cerebellum
M. Kano (Japan)

6.50-7.15 Metabotropic glutamate receptor 1 is enriched at low probability of release synapses: Implications for synaptic plasticity
T. Sanderson (UK)
Tuesday, October 3rd
Morning session 8.30 a.m.

Functional anatomy of mGluRs
Chair: F. Ferraguti (Austria) and P. Somogyi (UK)

8.30-8.55 Role of mTORC1 signaling in cerebellar Purkinje cells and cortical neurons
A. Aiba (Japan)

8.55-9.20 Relevance of group I mGluRs for social behaviours
F. Ferraguti (Austria)

9.20-9.45 mGluR8 and the incredible beauty of subcortical GABAergic innervation of the cortex
P. Somogyi (UK)

9.45-10.10 Left-right asymmetry of synaptic plasticity in the hippocampal circuitry
R. Shigemoto (Austria)

10.10-10.35 Title to be defined
J. Tazi (France)

10.35-11.00 Break

Tuesday, October 3rd
Morning session 11.00 a.m.

Regulation of neurotransmitter release
Chair: F. Bertaso (France)

11.00-11.25 5HT2A-mGlu2/3 functional cross-talk in rat spinal cord glutamatergic nerve endings
A. Pittaluga (Italy)

11.25-11.50 Bidirectional modulation of glutamatergic synaptic transmission by the mGlu7 receptors at SC-CA1 hippocampal synapses
J. Sánchez-Prieto (Spain)

mGlu receptors and cancer
Chair: A. Guidotti (USA)

11.50-12.15 Professor J. T. Wroblewski Honorary Lecture
Metabotropic glutamate receptor 1 and human cancer
S. Chen (USA)
## Tuesday, October 3rd
### Afternoon session 3.00 p.m.

**Drug addiction**  
Chair: P.W. Kalivas and D. Schoepp (USA)

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<th>USA</th>
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<td>3.00-3.25</td>
<td>mGluRs in the Nucleus Accumbens Regulate Drug Relapse</td>
<td>P.W. Kalivas</td>
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<td>3.25-3.50</td>
<td>Timing matters when using positive and negative allosteric modulators of mGluR5 to reduce cocaine-seeking</td>
<td>L. Knackstedt</td>
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<td>3.50-4.15</td>
<td>mGluR1 and mGluR5: Adaptations during withdrawal from cocaine versus methamphetamine</td>
<td>M.E. Wolf</td>
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<td>4.15-4.40</td>
<td>Optogenetic modulation of prefrontal mGluR5 signaling in rodent models of addiction</td>
<td>M.F. Olive</td>
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<td>4.40-5.05</td>
<td>Break</td>
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### Tuesday, October 3rd
### Afternoon session 5.05 p.m.

**Symposium Dedicated to the Work of Professor A. Markou**  
Chair: M. Geyer and N. Cosford (USA)

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<tr>
<td>5.05-5.30</td>
<td>Design, Synthesis, and Characterization of Group II mGlu Receptor Negative Allosteric Modulators for Depression</td>
<td>D.J. Sheffler</td>
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<td>5.30-5.55</td>
<td>Behavioral assessments of Group II mGlu receptor ligands</td>
<td>A. Der-Avakian</td>
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<td>5.55-6.20</td>
<td>Role of metabotropic glutamate receptor 7 (mGluR7) in psychostimulant dependence</td>
<td>X. Li</td>
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<td>6.20-6.45</td>
<td>Inhibitory neurons, mGluR5, and neurodevelopmental disorders</td>
<td>M. Behrens</td>
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<td>6.45- 7.10</td>
<td>The development of tolerance to mGluR2/3 agonists</td>
<td>A. Bespalov</td>
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### Tuesday, October 3rd
### Evening session 9.00 pm

**Poster session • Alcantara room**

Patronized by [www.mglu.it](http://www.mglu.it)
### Wednesday, October 4th

#### Morning session 7.45 a.m.

**Autism spectrum disorders**
Chair: **B.K. Kaang** (South Corea) and **C.M. Niswender** (USA)

- **7.45-8.10** Different roles of glutamate receptors and GABA receptors in autistic Shank2 mutant mice  
  **B.K. Kaang** (Korea)

- **8.10-8.35** mGluR5 Dysfunction in the Basal Ganglia Circuitry  
  **N. Calakos** (USA)

- **8.35-9.00** Autism SHANK3 scaffolding protein and mGluR5 signaling  
  **Y. Jiang** (USA)

- **9.00-9.25** Pharmacological enhancement of mGlu5 receptors by PAMs rescues behavioral deficits in SHANK3 knock-out mice  
  **C. Verpelli** (Italy)

- **9.25-9.50** Alterations of mGlu5 receptor and its regulatory proteins in autism spectrum disorders  
  **M.V. Catania** (Italy)

- **9.50-10.15** Break

- **10.15-10.40** Therapeutic potential of mGlu7 modulation in neurodevelopmental disorders  
  **C.M. Niswender** (USA)

- **10.40-11.05** Function of mGlu5 receptosome in autism spectrum disorders  
  **J. Perroy** (France)

- **11.05-11.30** CPEB3 coordinates AMPA receptor transcription and mRNA targeting to dendrites in Fragile X  
  **S. Zukin** (USA)

#### Schizophrenia
Chair: **P.J. Conn** and **J. Gonzalez-Maeso** (USA)

- **11.30-11.55** Coordinate regulation of forebrain circuits by muscarinic and mGlu receptors provide novel approaches for treatment of schizophrenia  
  **P.J. Conn** (USA)

- **11.55-12.20** Epigenetic role of HDAC2 in mGlu2-dependent schizophrenia treatment  
  **J. Gonzalez-Maeso** (USA)

- **12.20-12.45** Epigenetic bases of antipsychotic drug action  
  **A. Guidotti** (USA)

- **12.45-1.10** Metabotropic glutamate 2/3 receptors in schizophrenia and epigenetics: potential molecular targets for new treatment  
  **F. Matrisciano** (USA)
**Neurodegenerative disorders**  
Chair: **P. Gressens** (France), **G. Battaglia** and **A. Copani** (Italy)

3.00-3.25 Stroke recovery and mGluRs  
**T. Wieloch** (Sweden)

3.25-3.50 Metabotropic glutamate receptor 5, microglial reactivity and neurodegeneration  
**A. Faden** (USA)

3.50-4.15 Targeting GPCRs for the postnatal modulation of microglial reactivity, a new neuroprotective perspective for mGluRs pharmacology  
**J. Mairesse** (France)

4.15-4.40 mGlu5 Receptors, Synaptic Plasticity and Alzheimer’s Disease models  
**M.J. Rowan** (Ireland)

4.40-5.05 Inhibition of mGluR5 for the treatment of Alzheimer’s and Huntington’s disease  
**S. Ferguson** (Canada)

5.05-5.30 Targeting mGlu5 for the treatment of Alzheimer’s disease  
**J. Rook** (USA)

5.30-5.55 Break

5.55-6.20 A novel mGluR4 PAM displays anti-parkinsonian and anti-dyskinetic activity in primate models of Parkinson’s disease.  
**D. Charvin** (Switzerland) and **T. Di Paolo** (Canada)

6.20-6.45 Functional interactions between mGluR5 and dopamine receptors in Parkinson’s disease  
**M.A. Cenci** (Sweden)

6.45-7.10 Targeting metabotropic glutamate receptors (mGluRs) in Parkinson’s disease: from motor to nonmotor symptoms  
**M. Amalric** (France)

7.10-7.35 Metabotropic Glutamate Receptors in the Primate Ventral Motor Thalamus: Their Potential Roles in Normal and Diseased States  
**Y. Smith** (USA)
Thursday, October 5th
Morning session 8.00 a.m.

**Chronic pain/Auditory system**
Chair: R. Gereau and V. Neugebauer (USA)

8.00-8.25  Cortical connection for pain and emotion  
M. Zhuo (Canada)

8.25-8.50  Contribution of mGluR2/3 in the amygdala to group II agonist effects on spinal nociceptive processing  
V. Neugebauer (USA)

8.50-9.15  Cellular mechanisms of mGlu2-induced analgesia: comparative studies in mouse and human  
R. Gereau (USA)

9.15-9.40  Lighting up metabotropic glutamate type 5 receptors in vivo to control pain  
F. Ciruela (Spain)

9.40-10.05  Break

10.05-10.30  Pain affects entorhinal cortex - dentate gyrus pathways functions: role of glutamate and N-acyl-ethanolamines  
S. Maione (Italy)

10.30-10.55  In vivo cellular imaging of trigeminal pain  
Y.S Kim (USA)

10.55-11.20  Neuromodulation by mGluRs in Sound Localization Circuits in the Auditory Brainstem  
Y. Lu (USA)

11.20-11.45  Neurogenic neuroinflammation: a new therapeutic tool in chronic pain  
S. Cuzzocrea (Italy)
Thursday, October 5th

**Afternoon session 3.30 p.m.**

**Drug development**
Chair: F. Acher (France) and J. Monn (USA)

3.30-3.55 New insights at the mGluR orthosteric binding site
F. Acher (France)

3.55-4.20 Recent Developments in the Search for Subtype-Selective mGlu2/3 Receptor Agonists
J. Monn (USA)

4.20-4.45 Lessons learned over 25 years of drug development with mGlu<sub>2/3</sub> receptor agonists
D. McKinzie (USA)

4.45-5.10 Development of Allosteric Modulators for mGluRs: Medicinal Chemistry Challenges
En Route to in vivo Tool Compounds
C. Lindsley (USA)

5.10-5.35 Break

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Thursday, October 5th

**Afternoon session 5.35 p.m.**

**mGluR and Kynurenines**
Chair: R. Schwarz (USA) and T.E. Salt (UK)

5.35-6.00 Kynurenines and Glutamate: Multiple Links in Physiology and Pathology
R. Schwarz (USA)

6.00-6.25 Modulation of synaptic transmission and neural circuit activity by xanthurenic acid and other kynurenines
T.E. Salt (UK)

6.25-6.50 Interplay between kynurenines and glutamate receptors: a dialogue engaging Aryl hydrocarbon receptor?
F. Fallarino (Italy)

6.50-7.15 Unorthodox kynurenines and metabotropic glutamate receptors
F. Fazio (Italy)
Friday, October 6th

*Morning session 8.00 a.m.*

**Major depression**

Chair: **S. Chaki** (Japan) and **L. Lindemann** (Switzerland)

8.00-8.25 Role of serotonergic system in antidepressant effects of mGlu2/3 receptor antagonists: similarity to ketamine  
**S. Chaki** (Japan)

8.25-8.50 Lesson’s learned: Development of mGlu5 NAM’s in Fragile X Syndrome  
**L. Lindemann** (Switzerland)

8.50-9.15 Discovery and Development of the selective mGlu5 NAM VU0424238 for the Treatment of Major Depressive Disorder  
**C. Jones** (USA)

9.15-9.40 A double-blind placebo-controlled study of the antidepressant effects of the mGlu2 negative allosteric modulator RG1578 in patients with major depressive disorder and inadequate response to antidepressant therapy  
**D. Umbricht** (Switzerland)

9.40-10.05 Title to be defined  
**S. Gatti** (USA)

10.05-10.30 Break

10.30-10.55 On the antidepressant effects of mGlu receptor ligands.  
**A. Pilc** (Poland)

10.55-11.20 Promise of mGlu2/3 receptor mechanisms for the treatment of depression: efficacy and side-effect predictions.  
**J. Witkin** (USA)

11.20-11.45 mGLuR5 binding in humans with depression, addiction and schizophrenia  
**G. Hasler** (Switzerland)

Friday, October 6th

*Morning session 11.50 a.m.*

**mGlu receptors and stress response**

Chair: **P. Flor** (Switzerland) and **S. Maccari** (France)

11.45-12.10 mGlu5 receptors in the amygdala mediate resilience to traumatic stress  
**M. Schwendt** (USA)

12.10-12.35 Early life stress has an impact on mglu receptors from pups to aged rats  
**S. Maccari** (France)

12.35-1.00 Metabotropic glutamate receptor subtypes 5 and 7 – promising drug targets to treat chronic psychosocial stress consequences in man  
**N. Uschold** (Germany)
1.00 - 1.25  Title to be defined  
**C. Nasca** (USA)

1.25 - 1.50  Maladaptive plasticity induced by acute/chronic stress and glutamate-based  
drug treatment approaches  
**M. Popoli** (Italy)

1.50 - 2.15  Development of novel allosteric modulators of the mGlu7 receptor for the treatment of  
stress-related disorders  
**G. Duvey** (France)