

9th INTERNATIONAL MEETING ON METABOTROPIC GLUTAMATE RECEPTORS



Taormina, Sicily-Italy
October 1st - 6th, 2017

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9th INTERNATIONAL MEETING ON METABOTROPIC GLUTAMATE RECEPTORS

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ORGANIZING COMMITTEE

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ORGANIZING SECRETARIAT

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REGISTRATION INFORMATION

REGISTRATION FEES

Participants	€ 1.000,00
Undergraduate Students	€ 300,00 <i>verification of student status required</i>
Accompanying person	€ 500,00

REGISTRATION FEES INCLUDES

Participants: Access to all scientific session, meeting material, certificate of attendance, coffee breaks, working lunches, social program, local Shuttle service, transfer from and to Catania airport (only in these days: Transfer arrival 30 Sept.-1 Oct. Transfer back Oct.6-7).

Accompanying persons: Lunches, social program, local Shuttle service, transfer from and to Catania airport (only in these days: Transfer arrival 30 Sept.-1 Oct. Transfer back Oct.6-7).

The registration fee does not include the insurance of participants against personal accidents, sickness, theft or property damage.

AIRPORT SHUTTLE SERVICE

A free transportation service from Capotaormina Hotel will be provided by the Organizing secretariat in these days. Please note that we will not be able to transfer people who have not booked.

Friday 6th and Saturday 7th October

All registered participants are anyhow kindly requested to communicate departure details at the Registration Desk within October 4th

Pick-up time will be confirmed by our staff the day before the departure date.

ORAL COMMUNICATION

- 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 (unreccomanded) are kindly requested to go to the Multimedia Slide centre;
- We kindly recommended speakers to contact the Multimedia Slide centre the day before their presentation.

POSTER SESSION

Poster session will take place on Tuesday October 3rd from 8.30 pm to 11.00 pm. in Alcantara room.

Posters can be positioned from 2.00 pm to 7.00 pm and must be removed immediately after the end of the Poster session. After that the Organizing Secretariat has no responsibility for your poster.

The presenters are required to be present at their board during all time of the session. The area (portrait) on poster boards is 95cm wide and 118cm high.

Posters will be numbered and listed in the program, you will find at the top of your poster space, a label indicating your poster number.

Material for mounting posters (Scotch paper tape) will be available at the poster area.

CONTINUING MEDICAL EDUCATION (Italian accreditation)

Request for ECM accreditation has been submitted to the Ministry of Health
Categories involved:

- Neurology
- Psychiatry
- Clinical Biochemistry
- Pharmacology and Toxicology
- Neurophysiopathology.

The Meeting has been accredited for Italian CME: event n. 198428 • 6 credits for Italian participants only.

Provider ECM: Centro Organizzazione Congressi No. 2263

ABSTRACT

Please find the list of Abstracts in the “Neuromed” pen drive. Abstracts are published on-line in Current Neuropharmacology.

BADGE

Each participant and accompanying person registered will receive a name badge upon arrival at the registration desk. You are kindly requested to wear your name badge during all Scientific Session and all Meeting activities.

There will be no admittance to the Scientific Sessions without the badge.

SCIENTIFIC PROGRAM

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 p.m.

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

5.35-6.00

Linking the GABA_B Receptor Proteome to Physiology
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-HT_{2A} receptor-dependent phosphorylation of glutamate
mGlu₂ receptor at Ser843 promotes mGlu₂-operated G_{i/o} signaling
J. Bockaert (France)
- 10.55-11.20** Functional partnership between mGlu3 and mGlu5 receptors
in neurons
M. Joffe (USA) and **L. Di Menna** (Italy)

Monday, October 2nd

Afternoon session 2.15 p.m.

Regulation of synaptic plasticity and epileptogenesis

Chair: **Z. I. Bashir** and **G. L. Collingridge** (*Canada*)

- 2.15-2.30** RNA methylation and mGluR synaptic plasticity
Z. I. Bashir (*UK*)
- 2.30- 2.55** Role of mGluRs in hippocampal synaptic plasticity
J. Georgiou (*Canada*)
- 2.55-3.20** Mechanisms of mGluR-LTD in Hippocampal Area CA2
S. Dudek (*USA*)
- 3.20-3.45** Modulation of hippocampal mGlu-LTD by L-type calcium channels: mechanisms and chronic alteration by early life seizures
T. Benke (*USA*)
- 3.45-4.10** Group I metabotropic glutamate receptors at the core of hippocampal information processing and long-term encoding.
D. Manahan-Vaughan (*Germany*)
- 4.10-4.30** *Break*
- 4.30-4.55** Role of the mGlu7 receptor in epileptogenesis
F. Bertaso (*France*)
- 4.55-5.20** Acute Anticonvulsant Effects of Cannabidiol in Immature Rats
L.K. Friedman (*USA*)

Monday, October 2nd

Afternoon session 5.20 p.m.

Group I mGluR Signaling in Synaptic Function and Plasticity

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

- 5.20-5.45** Ca²⁺ homeostasis and beyond: Novel role for Orai2 in mGluR1-dependent synaptic transmission
J. Hartmann (*Germany*)
- 5.45-6.10** mGluR1-dependent synapse refinement.
M. Watanabe (*Japan*)
- 6.10-6.35** BDNF to TrkB signaling regulated by mGlu1 promotes climbing fiber synapse elimination in the developing cerebellum
M. Kano (*Japan*)
- 6.35-7.00** 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)
- 10.10-10.25** A null Grm₂ cys407* mutant rat; aspects of the resulting phenotype
D. Lodge (UK)
- 10.25-10.50** *Break*

Tuesday, October 3rd

Morning session 10.50 a.m.

Regulation of neurotransmitter release

Chair: **F. Bertaso** (France)

10.50-11.15 5HT_{2A}-mGlu_{2/3} functional cross-talk in rat spinal cord glutamatergic nerve endings

A. Pittaluga (Italy)

11.15-11.40 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)

11.40- 12.05 **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. D. Schoepp** (USA)

3.00-3.25 mGluRs in the Nucleus Accumbens Regulate Drug Relapse

P.W. Kalivas (USA)

3.25-3.50 Timing matters when using positive and negative allosteric modulators of mGluR₅ to reduce cocaine-seeking

L. Knackstedt (USA)

- 3.50-4.15** mGluR1 and mGluR5: Adaptations during withdrawal from cocaine versus methamphetamine
M.E. Wolf (USA)
- 4.15-4.40** Optogenetic modulation of prefrontal mGluR5 signaling in rodent models of addiction
M.F. Olive (USA)
- 4.40-5.05** *Break*

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)

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

Tuesday, October 3rd

Evening session 8.30 pm

Poster Session - Alcantara Room

Wednesday, October 4th

Morning session 7.30 a.m.

Autism spectrum disorders

Chair: **B.K. Kaang** (South Korea) and **C.M. Niswender** (USA)

- 7.30-7.55** Lesson's learned: Development of mGluR5 NAM's in Fragile X Syndrome
L. Lindemann (Switzerland)
- 7.55-8.20** Different roles of glutamate receptors and GABA receptors in autistic Shank2 mutant mice
B.K. Kaang (Korea)
- 8.20-8.45** mGluR5 Dysfunction in the Basal Ganglia Circuitry
N. Calakos (USA)
- 8.45-9.10** Autism SHANK3 scaffolding protein and mGluR5 signaling
Y. Jiang (USA)
- 9.10-9.35** Pharmacological enhancement of mGlu5 receptors by PAMs rescues behavioral deficits in SHANK3 knock-out mice
C. Verpelli (Italy)
- 9.35-10.00** Alterations of mGlu5 receptor and its regulatory proteins in autism spectrum disorders
M.V. Catania (Italy)
- 10.00-10.25** *Break*

- 10.25-10.50** Therapeutic potential of mGlu7 modulation in neurodevelopmental disorders
C.M. Niswender (USA)
- 10.50-11.15** Function of mGlu5 receptosome in autism spectrum disorders
J. Perroy (France)
- 11.15-11.40** CPEB3 coordinates AMPA receptor transcription and mRNA targeting to dendrites in Fragile X
S. Zukin (USA)

Wednesday, October 4th

Morning session 11.40 a.m.

Schizophrenia

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

- 11.40-12.05** Coordinate regulation of forebrain circuits by muscarinic and mGlu receptors provide novel approaches for treatment of schizophrenia
P.J. Conn (USA)
- 12.05-12.30** Epigenetic role of HDAC2 in mGlu2-dependent schizophrenia treatment
J. Gonzalez- Maeso (USA)
- 12.30-12.55** Epigenetic bases of antipsychotic drug action
A. Guidotti (USA)
- 12.55-1.20** Metabotropic glutamate 2/3 receptors in schizophrenia and epigenetics: potential molecular targets for new treatment
F. Matrisciano (USA)

Wednesday, October 4th

Afternoon session 3.30 p.m.

Neurodegenerative disorders

Chair: **P. Gressens** (France) and **A. Copani** (Italy)

- 3.30-3.55** Stroke recovery and mGluRs
T. Wieloch (Sweden)
- 3.55-4.20** Metabotropic glutamate receptor 5, microglial reactivity and neurodegeneration
A. Faden (USA)
- 4.20-4.45** Targeting GPCRS for the postnatal modulation of microglial reactivity, a new neuroprotective perspective for mGluRs pharmacology
J. Mairesse (France)
- 4.45-5.10** mGlu5 Receptors, Synaptic Plasticity and Alzheimer's Disease models
M.J. Rowan (Ireland)
- 5.10-5.35** Inhibition of mGluR5 for the treatment of Alzheimer's and Huntington's disease
S. Ferguson (Canada)
- 5.35-6.00** Targeting mGlu5 for the treatment of Alzheimer's disease
J. Rook (USA)
- 6.00-6.25** *Break*
- 6.25-6.50** 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)

- 6.50-7.15** Functional interactions between mGluR5 and dopamine receptors in Parkinson's disease
M.A. Cenci (Sweden)
- 7.15 -7.40** Targeting metabotropic glutamate receptors (mGluRs) in Parkinson's disease: from motor to nonmotor symptoms
M. Amalric (France)
- 7.40-8.05** 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. W. Gereau IV** 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. W. Gereau IV (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 mGlu2/3 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*

Thursday, October 5th

Afternoon session 5.35 p.m.

mGluR and Kynurenines

Chair: **R. Schwarcz** (USA) and **T.E. Salt** (UK)

- 5.35-6.00** Kynurenines and Glutamate: Multiple Links in Physiology and Pathology
R. Schwarcz (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 8.15 a.m.

Major depression

Chair: **S.Chaki** (Japan), **A. Pilc** (Poland) and **C. Nasca** (USA)

- 8.15-8.40** Role of serotonergic system in antidepressant effects of mGlu2/3 receptor antagonists: similarity to ketamine
S. Chaki (Japan)
- 8.40-9.05** Discovery and Development of the selective mGlu5 NAM VU0424238 for the Treatment of Major Depressive Disorder
C. Jones (USA)

- 9.05-9.30** 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)
- 9.30-9.55** *Break*
- 9.55-10.00** On the antidepressant effects of mGlu receptor ligands.
A. Pilc (Poland)
- 10.00-10.25** Promise of mGlu2/3 receptor mechanisms for the treatment of depression: efficacy and side-effect predictions.
J. Witkin (USA)
- 10.25-10.50** mGluR5 binding in humans with depression, addiction and schizophrenia
G. Hasler (Switzerland)

Friday, October 6th

Morning session 10.50 a.m.

mGlu receptors and stress response

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

- 10.50-11.15** mGlu5 receptors in the amygdala mediate resilience to traumatic stress
M. Schwendt (USA)
- 11.15 -11.40** Early life stress has an impact on mglu receptors from pups to aged rats
S. Maccari (France)

- 11.40 -12.05** Metabotropic glutamate receptor subtypes 5 and 7 – promising drug targets to treat chronic psychosocial stress consequences in man
N. Uschold-Schmidt (*Germany*)
- 12.05 -12.30** Epigenetic role of LAC in mGlu2-dependent responses to stress and antidepressants in ventral hippocampus
C. Nasca (*USA*)
- 12.30-12.55** Maladaptive plasticity induced by acute/chronic stress and glutamate-based drug treatment approaches
M. Popoli (*Italy*)
- 12.55 -1.20** Development of novel allosteric modulators of the mGlu7 receptor for the treatment of stress-related disorders
G. Duvey (*France*)

POSTER SESSION

Tuesday, October 3rd

Evening session: 8.30 pm.

Alcantara Room - Hotel Capotaormina

COGNITIVE FUNCTION/AUTISM

1. Severe impaired synaptic transmission in the Shank1/Shank3 double knock out mouse
A. Mossa, L. Ponzoni, A. Tozzi, M. Sala, P. Calabresi, T.M. Boeckers, C. Sala and C. Verpelli (Italy and Germany)
2. Phenotypic overlap between mice lacking mGlu7 and models of neurodevelopmental disorders
N.M. Fisher, R.G. Gogliotti, B.J. Stansley, J.J. Adams, A.M. Moore, R.L. Weiner, C.W. Lindsley, Z. Xiang, C.K. Jones, P.J. Conn and C.M. Niswender (USA)
3. Metabotropic Glutamate Receptor 7 as a Potential Therapeutic Target for Neurofibromatosis Type 1
R.G. Gogliotti, N.M. Fisher, B.J. Stansley, R.R. Lavieri, J.K. Shirey-Rice, C.W. Lindsley, P.J. Conn, J.M. Pulley and C.M. Niswender (USA)
4. Targeting mGlu5 receptors in the treatment of intellectual disability associated with phenylketonuria
F. Nardecchia, R. Orlando, L. Iacovelli, M. Colamartino, V. Leuzzi, S. Piccinin, R. Nisticò, S. Puglisi Allegra, T. Pascucci and F. Nicoletti (Italy)
5. Inhibition of mGluR5 but not mGluR1 disrupts memory formation by decreasing expression of FMRP and dysregulation of local protein synthesis in the one-trial passive avoidance task in one-day old chicks
A. Krolík, J. Lenart, E. Bratek, M. Slomka and E. Salinska (Poland)
6. The temporal dynamics of Arc expression regulate cognitive flexibility
M.J. Wall, D.R. Collins, S.L. Chery, Z.D. Allen, E.D. Pastuzyn, V.D. Nikolova, S.S. Moy, B.D. Philpot, J.D. Shepherd, M.D. Ehlers, A.M. Mabb and S.A.L. Correa (UK and USA)

NEURODEGENERATIVE DISORDERS/EPILEPSY

7. Discovery, characterization and anti-parkinsonian effect of a novel mGluR4 PAM chemical series
D. Charvin, V. Pomel, M. Ortiz, M. Frauli, S. Scheffler, E. Steinberg, L. Baron, L. Deshons, R. Rudigier, D. Thiarc, C. Morice, B. Manteau, S. Mayer, D. Graham, B. Giethlen, N. Brugger, G. Hédou, F. Conquet and **S. Schann** (Switzerland and France)
8. Striatal phospholipase C activation is involved in the molecular mechanisms of L-DOPA-induced dyskinesia.
I. Sebastianutto, N. Maslava, L. Di Menna, F. Nicoletti and M. A. Cenci (Sweden and Italy)
9. Genetic inactivation of metabotropic glutamate 5 (mGlu5) receptor ameliorates motor coordination in the Grm1crv4 mouse model of SCAR13 ataxia
S. Bossi, I. Musante, T. Bonfiglio, T. Bonifacino, L. Emionite, M. Cerminara, C. Cervetto, M. Marcoli, G. Bonanno, R. Ravazzolo, **A. Pittaluga** and A. Puliti (Italy)
10. Pharmacological blockade of mGluR5 enhances autophagy via ZBTB16- and mTOR-dependent mechanisms to ameliorate motor and cognitive impairments in zQ175 Huntington mice.
K. S. Abd-Elrahman, A. Hamilton, S. Hutchinson and S.S.G. Ferguson (Canada)
11. Neuroprotective effects of metabotropic glutamate receptors group II (mGluR2/3) agonists in an animal model of birth asphyxia.
E. Bratek, P. Ziembowicz and E. Salinska (Poland)
12. Genetic deletion of type-2 metabotropic glutamate receptors improves the outcome in experimental models of transient focal brain ischemia
F. Mastroiacovo, S. Moyanova, M. Cannella, A. Gaglione, R. Verhaeghe, G. Bozza, M. Madonna, M. Motolese, A. Traficante, B. Rizzo, V. Bruno, G. Battaglia, D. Lodge, F. Nicoletti (Italy and UK)
13. mGlu1 receptors: a new target for the treatment of retinal neurodegeneration?
F. Liberatore, D. Bucci, G. Mascio, M. Madonna, V. Bruno, G. Battaglia, F. Nicoletti and **M.R. Romano** (Italy)

14. Pharmacological activation of mGlu5 receptors up-regulates the GABA transporter, GAT-1: a possible mechanism underlying the anti-absence activity of mGlu5 receptor PAMs
R. Celli, I. Santolini, M. Vergassola, G. Mascio, V. D'amore, R. Gradini, G. van Luitelaar, G. Battaglia, V. Bruno, R. T. Ngomba, A. Pittaluga and F. Nicoletti (Italy and UK)
15. The role of the MK2 cascade regulating inflammation in Alzheimer disease
L. Privitera, E.L. Hogg and S.A.L. Corrêa (UK)

PSYCHIATRIC DISORDERS/ADDICTION

16. Development of mGluR7 allosteric agonists for the potential treatment of cognitive deficits and addictive disorder associated with schizophrenia
M. Teall, L. Dickson, E. Chevalier, T. Cheung, A. Stephenson, K. White, S. Mack, G. Liwicki, T. Patel, S. Almond, J. Sanchez-Prieto, J. Javier Ferrero, M. Carlton and A. Ayscough (UK and Spain)
17. Regulation of Striatal Dopamine Release by Metabotropic Glutamate Receptor Subtype 1 via an Endocannabinoid-Dependent Mechanism: Implications for the Treatment of Schizophrenia
S.E. Yohn, D.P. Covey, D.J. Foster, P.M. Garcia-Barrantes, M.E. Joffe, J.P. Cheer, C.W. Lindsley and P.J. Conn (USA)
18. Expression of GABAergic interneuron-related genes in mice with genetic deletion of mGlu2 or mGlu3 metabotropic glutamate receptors
M. Cannella, T. Imbriglio, R. Verhaeghe, M. Quattromani, D. Bucci, F. Scalabri, A. Simeone, S. Maccari, T. Wieloch, G. Battaglia and F. Nicoletti (Italy, Sweden and France)
19. Emerging Roles of Metabotropic Glutamate Receptor Subtypes 5 and 7 in the Pathophysiology of Chronic Stress-Related Disorders
P. J. Flor, D. Peterlik, C. Stangl, A. Bludau, A. Bauer, J. Keller, F. Zajicek, T. Killian, D. Grabski, D. Schmidt, G. Jaeschke, L. Lindemann, S. O. Reber and N. Uschold-Schmidt (Germany and Switzerland)

20. The mGlu3 receptor scaffold: roles in hippocampal rhythms and implications for neuropsychiatric disorders
M. Thouaye, B. Girard, N. Bouquier, F. Bertaso, J. Perroy and J. Ster (France)
21. Metabotropic glutamate receptor subtype 3 gates acute stress-induced dysregulation of amygdalo-cortical function
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M. Seto, M. Abe, R.G. Gogliotti, C.W. Reed, K.M. McGowan, M.T. Loch, D.H. Remke, K.A. Bollinger, S. Chang, E. Engelberg, J.R. Harp, M. Bubser, D.W. Engers, J.M. Rook, C.K. Jones, A.L. Rodriguez, A.L. Blobaum, P.J. Conn, C.M. Niswender and C.W. Lindsley (USA)
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H. Nakao, Y. Kishimoto, K. Hashimoto, K. Kitamura, M. Yamasaki, K. Nakao, M. Watanabe, M. Kano, Y. Kirino and A. Aiba (Japan)
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M. Mazzitelli and V. Neugebauer (USA)
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