

INRC 2025

International Narcotics
Research Conference



July 8th – 11th, 2025 | Bologna, Italy

POSTER SESSION SCHEDULE

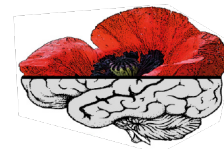
WEDNESDAY, 09 JULY – 16:45 (4.45 PM) - Poster session A		
PANEL ID	PAPER TITLE	AUTHORS
1	The Efficacy of PPL-138 to Reduce AUD-like and PTSD-like Symptoms in Female and Male Rats	Kylie Kealoha, Ali Idriss, Lawrence Toll, Andrea Cippitelli Yong Zhang, Panini Patankar, Kelly Standifer, Benjamin Carper
2	Adolescent social isolation increases stress and alcohol vulnerability via opioid gene expression changes in a sex-dependent manner.	Loredana Maria Losapio, Adana Keshishian, Laura Rullo, Sofia Vellere, Massimo Ubaldi, Laura Soverchia, Sanzio Candeletti, Roberto Ciccocioppo, Patrizia Romualdi, Esi Domi
3	Exploring the opioid system role on sex- and age-dependent effects of social isolation on binge-like alcohol drinking and decision-making in rats.	María Ros-Ramírez, Jesús David Lorente, Miguel Ángel Serrano Rosa, Ana Polache, Lucía Hipólito
4	Antidotal Action of Metal-Organic Frameworks (MOFs) on Opioid and Synthetic Cathinone Toxicity in Zebrafish: Toward Innovative Strategies for Substance Use Disorders	Olga Wronikowska-Denysiuk, Barbara Budzyńska, Anna Boguszezwska-Czubara, Weronika Mrozek, Kornelia Hyjek, Grzegorz Kurowski, Przemysław J. Jodłowski
5	Pre-clinical characterization of heroin and oxycodone virus like particle nanovaccines in Sprague-Dawley rats	Davide Tronconi, Courtney Marecki, Bryan Hannon, Caroline M Kim, Fatima A Hamid, and Marco Pravetoni
6	Dopamine Dynamics And Genomic Correlates Of Addictive-Like Behaviors In An Opto-Intracranial Self-Stimulation Mouse Model	Esther Colantonio, Sarah Kada, Yahia Hadj-Arab, Victor Mathis, Judith Meyer, Mathieu Bruggeman, Emmanuel Darcq, Pierre-Eric Lutz
7	Dissecting Neural Mechanisms of Volitional Drug Seeking in Mice	Hansol Lim
8	Effects of Maternal Pain and Perinatal Opioid Exposure on Intravenous Oxycodone Self-Administration in Male and Female Rats	Hannah Harder, Jose Moron-Concepcion

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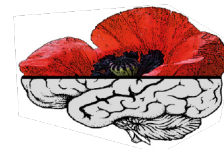
PANEL ID	PAPER TITLE	AUTHORS
9	Cebranopadol: A Novel Nop/Mop Dual Agonist To Treat Opioid Use Disorder	Manthoula Olga Kyratzi, Sofia Christina Gkolfinopoulou, Caitlin Crook, Laura Soverchia Chiara Cappelletti, Esi Domi, Massimo Ubaldi, Roberto Ciccocioppo
10	Exploring the role of AMPAR auxiliary protein CNIH3 in opioid-seeking behavior and contributing risk factors using mouse models	Tania Lintz, Alex Liu, Talal Abdel Aal, Ashley Park, Jose A. Moron
11	Enhanced naloxone-induced conditioned place aversion following high-dose oxycodone in Zhx2 knockout mice	Sophia A. Miracle, Ava Glavine, Sophia Pavlidis, Kaylie R. Kaneshiro, Isabella C. Conti, Morgan L. Hofmeyer, William B. Lynch, Camron D. Bryant
12	Regulation of the Opioid System by Ketamine and its Therapeutic Potential in Opioid Use Disorder	Aya Osman, Adam Dawoud, Achla Gupta, Ivone Gomes, Yasmin L. Hurd and Lakshmi A. Devi
13	Heroin preference over social interaction: the role of GABAergic transmission in the medial amygdala	Maria Chiara Ruano, Ginevra D'Ottavio, Sara Pezza, Soami Filippo Zenoni, Jacopo Modoni, Sofia Taddini, Fabio Fumagalli, Lucia Caffino, Francesca Mottarlini, Daniele Caprioli
14	Biased kappa opioid receptor agonist nalfurafine attenuates oxycodone seeking and craving in rats.	Wojciech Solecki, Barbara Jędrzejewska, Anna Ciejka, Anna Nalepa, Aleksandra Kaczmarek, Jakub Bilnicki, Ryszard Przewłocki
15	Preoperative Opioid Misuse Associations with Pain, Opioid Use, and Negative Affect after Abdominal Surgery	Jennifer M. Hah, Shana C. Levine, Saneel Khairnar, Luke Pirrotta, Gabrielle Hettie, Tina Hernandez-Boussard
16	Nicotine exposure via electronic cigarettes enhances Bdnf/TrkB transcription, dynorphin and OLIG2 levels specifically in the rat VTA	Camilla Morosini, Laura Rullo, Loredana Maria Losapio, Fabio Vivarelli, Moreno Paolini, Lucy C Fairclough, Donatella Canistro, Sanzio Candeletti, Patrizia Romualdi

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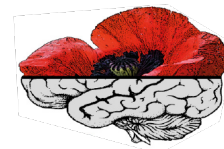
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17	Fentanyl and xylazine interactions result in the altered action potential firing rates in dopamine type 2 receptor-expressing striatal medium spiny neurons.	Viktor Yarotskyy, Pamela E. Knapp, Kurt F. Hauser
18	Xylazine amplifies behavioral and cardio-respiratory impairments induced by fentanyl in mice	Bilel Sabrine, Corli Giorgia, Nicole Cocita, Bassi Marta, Marti Matteo
19	Structural elucidation of a new nitazene-type synthetic opioid	Gyles Cozier, Alexander Simmons, Matthew Gardner, Peter Sunderland, Christopher R Pudney, Stephen M Husbands
20	Reversing poly-drug overdoses in a rat model	Aniah V. Matthews, Adriana Gregory-Flores, Leandro F. Vendruscolo, Nora D. Volkow, George F. Koob, Renata C.N. Marchette
21	Investigating the Respiratory Consequences of Fentanyl and Xylazine Poly-Drug Administration and the Rescue by Antagonists in CD1 Mice Using Whole-Body Plethysmography	Okubadejo R, Hart E, Cavallo D, Kelly E, Henderson G, Abdala Sheikh AP
22	Xylazine exhibits time-dependent conditioned-rewarding effects in a conditioned-place assay in Swiss Webster mice	Brandon Shepherd, Kerim Cakir, Ellen Walker
23	Nitazenes of the past, present, and future: Insights from in vitro μ -opioid receptor assays and in vivo behavioral studies in male C57BL/6J mice	Marthe M. Vandeputte, Grant C. Glatfelter, Donna Walther, Nathan K. Layle, Danielle M. St. Germaine, István Ujváry, Donna M. Iula, Michael H. Baumann, and Christophe P. Stove

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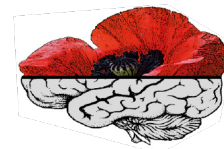
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24	Structure guided efficacy modulation to design opioid sparing analgesics	Barnali Paul, Peng Huang, Nokomis Ramos-Gonzalez, Junzheng Wang, Emily Wells, Haylee R. Hammond, Bo W Sortman, Parthasaradhireddy Tanguturi, Arghya Polley, Balazs R. Varga, Kevin Appourchaux, Soumen Chakraborty, Jakob Parker, Tori Taylor, Matthew Welch, Antonio Alves De Souza, Qianru Jiang, Andras Varadi, Rajendra Uprety, Shainnel O'Eans, Ryosuke Shinouchi, Sabrina Masood, Caleb A Seekins, Chao-Cheng Kuo, Jordan G McCall, Michael D. Cameron, Tao Che, Brandon L Warren, John M Streicher, Brian K Kobilka, Chunlai Chen, Jay P. McLaughlin, Evan O'Brien, Susruta Majumdar
25	Looking for NOP receptor biased agonists: a SAR study on N/OFQ(1-13)-NH ₂	Erika Morrone, Alessandra Rizzo, Erika Marzola, Giulio Meneguzzo, Davide Malfacini, Remo Guerrini, and Girolamo Calo'
26	In vitro pharmacological characterization of novel NOP partial agonists	Michele Maritan, Alessia Frezza, Pietro Pola, Chiara Ruzza, Davide Malfacini, Arpit Doshi, Dennis Yasuda, Nurulain T. Zaveri, Girolamo Calo'
27	In vitro pharmacological characterization of innovative opioid ligands with distinct binding profiles and improved pharmacological activity	Andrea Bedini, Marco Francescato, Luca Gentilucci
28	The Positive Allosteric Modulator BMS-122 Enhances the Anti-Allodynic Action of Opioid and Non-Opioid Analgesics in Rats with Nerve Injury	Ben M. Clements, Katherine E. Kerrigan, Che Hsuing-Lee, Ipek Berberoglu, Stephen W.P. Kemp, John R. Traynor
29	Squaramide Derivatives as μ OR/ κ OR Ligands: Synthesis, Functional Evaluation, and Receptor-Ligand Interaction Analysis	Ryszard Bugno, Magdalena Tertil, Grzegorz Satała, Sabina Podlewska, Krystyna Nędza, Aneta Kozioł, Andrzej Bojarski, Ryszard Przewłocki

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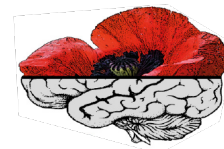
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30	In vitro pharmacological characterization of novel derivatives of the NOP receptor ligand [6ACH ²]N/OFQ(1-13)NH ₂	Riccardo Camilotto, Davide Malfacini, Matteo Gozzi, Antonella Ciancetta, Alessandra Rizzo, Erika Marzola, Remo Guerrini, Girolamo Calo'
31	Replacement of Proline by Triazole in Endomorphin-1: Design and Identification of a Potent K-Opioid Receptor-Selective Agonist	Marco Francescato, Federica Santino, Piotr F.J. Lipinski, Andrea Bedini, Luca Gentilucci.
32	Effects of Biased Analogues of The Kappa Opioid Receptor Agonist, U50,488, Using In Vivo Mouse Models of Pain And Side Effects	Loan Vu, Ross van de Wetering , Lindsay Kornberger, Dan Luo, Brittany Scouller, Sheein Hong, Kelly Paton, Thomas Prisinzano, Bronwyn Kivell
33	Determination of the antinociceptive effect of linalool, the main component of lavender essential oil, against thermal pain and its effect on anxiety-related or obsessive-compulsive disorder-related behaviors.	Wakako Fujita, Kiho Minagawa, Sho Fukubeppu, Hayato Matsunaga, Minoru Hatayama, Jun Aruga
34	A Novel In Vivo Protocol for Evaluating Evoked and Non-Evoked Migraine-Like Signs in Mice	Michela Argentieri, Alessia Frezza, Chiara Sturaro, Pietro Pola, Chiara Ruzza
35	Kappa opioid receptor signaling in the mouse claustrum modulates pain-evoked behavioral states	Eileen Nguyen, Anisha Reimert, Meenakshi Nai, Nicolas Massaly
36	Set-up of a murine model of endometriosis and migraine comorbidity	Alessia Frezza, Chiara Sturaro, Pietro Pola, Michela Argentero, Chiara Ruzza
37	Enhancing Recovery Quality After Lumbar Fusion Surgery Through ERAS Implementation: A Retrospective Study	Yi-Jyun Guo
38	Lack of contralateral morphine analgesia in the acid-induced fibromyalgia model and its reversal by therapeutic mirtazapine, but not pregabalin	Hiroshi Ueda, Hiroyuki Neyama

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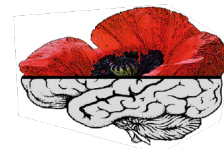
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39	Delta Opioid Receptors Inhibit PACAP-PAC1 signaling following Opioid Induced Hyperalgesia in the vIPAG	Patti, L.C., De Anda Gamboa C.M., Boston, B., Coutens, B., Pradhan, AA., Ingram, S.L.
40	Kappa Opioid Receptor Antagonist Properties of Psychotropic Medications in a Mouse Model of Antinociception	Shaul Schreiber, Lee Keidan, and Chaim G. Pick
41	Fentanyl-Type Antagonist of the μ -Opioid Receptor: Important Role of Axial Chirality in the Active Conformation	Hironobu Arita, Shuntaro Kikukawa, Tsukasa Tomizawa, Masahiko Funada, Kenichi Tomiyama, Hidetsugu Tabata, Kayo Nakamura, Tetsuta Oshitari, Hideaki Natsugari, Hideyo Takahashi
42	GPR63 and GPR153 enhance pathological pain relief through the suppression of microglial activation	Isabella D. Johnson, Adrian Peña, Emma Gevelhoff, Laurent Martin, and John M. Streicher
43	In Vivo Chemogenetic Activation and Retrograde Mapping of Enkephalinergic Pain Circuits in Mice	Callie M. Newson, Oakley M. Statham, Lucy N. Scribner, Luke Collings, Duncan Ferguson, Greydon R. Durrant, Haili Bartholomew, Erin N. Bobeck
44	VGF in the nucleus accumbens: roles in synaptic plasticity and opioid-evoked behaviors	Anisha Adke, Carolina Rocha, Tuba Ali, Lucy Vulchanova, Patrick E. Rothwell
45	Region-specific modulation of brain mu-opioid and oxytocin receptors by gut microbiota during early development in male rats	Alexis Bailey, Manal Razi, Felix Effah, Aya Osman, Vincent Bombail
46	Enkephalin in the Dorsal Raphe Nucleus Modulates Aversive Processing	Kathryn Braden, Andrew Trinagel, Eric Acevedo, Allie Bernstein, Marcela Arguello, Aidan Evans-Strong, Daniel C. Castro
47	Single early injection of a NOP receptor antagonist modulates emotional and social behaviors following traumatic stress in mice	Cathaline Robert, Lou-Anne Chaton, Lionel Moulédous
48	Unraveling Of A Cross-Habenular Neuronal Population Expressing The M-Opioid Receptor In Hedonic Balance	Chiara Ebner, Valentine Gilbert, Gabriele Giua, Judith Meyer, Hugues Jacobs, Olivia Wendling, Gilles Laverny, Emmanuel Darcq

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49	Extended amygdala dynorphin regulates nociception and alcohol-induced analgesia in mice	Jessica A. Cucinello-Ragland, Yolanda Campos-Jurado, Jessica Higginbotham, Léa Becker, Jordan McCall, Jose A. Moron
50	Identification of Proteins Controlling mu Opioid Receptor Trafficking in Cultured Cells Using a Novel Chemical Biology Platform	Aleksandra Dagunts, Hayden Adoff, Brandon Novy, Monica De Maria, Braden T Lobingier
51	PACAP-PAC1 Signaling Enhances GABAergic Transmission in the vIPAG but Does Not Mediate CFA-Induced Hyperalgesia	De Anda Gamboa C.M., Patti, L.C., Boston, B., Coutens, B., Pradhan, AA., Ingram, S.L.
52	B-Caryophyllene Reduces Morphine Reward via the Adenosine A2a Receptor: Evidence from In Vivo CRISPR Knockdown and Conditioned Place Preference in Mice	Emily Camposeo, Abby Schwarz, Hager Shogaaeldein, John M. Streicher
53	The neuropeptide receptor GPR83 regulates anxiety-like behavior.	Scarlett R. Johnson, Patel Prapti, and Amanda K. Fakira
54	In vivo study reveals bidirectional contribution of lateral hypothalamic opioid-responsive neurons to affective states in mice	Giua G, Meyer J, Darcq E
55	Opioidergic activation of the descending pain inhibitory system underlies placebo analgesia in neuropathic pain model rat	Hiroyuki Neyama, Yilong Cui
56	Kappa Opioid Receptor-Induced Cognitive and Emotional Dysfunction is Associated with Dysregulated Autophagic Signaling in the Brain	Christos Karoussiotis, Alexandra Symeonof, Angeliki Nomikou, Chrysanthi Charalampous, Ioannis Serafimidis, Ioannis Sotiropoulos, Zafiroula-Iro Georgoussi
57	Optical tools for probing and controlling nociceptive GPCR and G protein signaling dynamics in living cells	Waruna Thotamune, Dhanushan Wijayarathna, Sithurandi Ubeysinghe, Chathuri Rajarathna, Senuri Piyawardena, Marvin Meyers, Nokomis Ramos-Gonzalez, Susrutha Majumdar, Ajith Karunarathne

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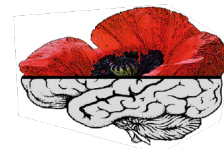
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PANEL ID	PAPER TITLE	AUTHORS
1	From Trauma to Tranquility: How Myrcene Helps the Brain Bounce Back	Bonsale R, Teweldemedhin M, Perrone M, Limongelli R, Piscitelli F, Belardo C, Guida F, Maione S, Luongo L.
2	In Vitro Validation of MOR and CB1R Residues Involved in Heteromerization and Crosstalk at Baseline and After Morphine Treatment	Chiara Cimetti, Elisabetta Cuna, Monica Baiula, Pedro Renault, Jesùs Giraldo, Andrea Bedini
3	Morphine-THC drug combination modulates MOR-mediated intracellular signaling and MOR-CB1 heteromerization in human and rodent neuronal cell models in vitro	Monica Baiula, Elisabetta Cuna, Chiara Cimetti, Pedro Renault, Jesus Giraldo, Andrea Bedini
4	Behavioral and Neuro-Immune Impact of Mμ-Opioid Receptor and CB2 Cannabinoid Receptor	Emmanuel S. Onaivi; Berhanu Kibret, Zhicheng Lin; Venkatanarayanan Sharma
5	Exploring the effects of microglial KOR activation on inflammatory responses within the murine mesocorticolimbic system	Víctor Ferrís-Vilar, Javier Cuitavi, Marina Murillo-Martínez, Ana Polache, Lucía Hipólito
6	Salvinorin A analogues activating the kappa opioid receptor modulate OPC differentiation, myelination and neuroinflammation in preclinical rodent models	Rabia Bibi, Ross van de Wetering, Bria Pengelly, Kelly Paton, Dan Luo, Sam Williamson, Thomas Prisinzano, Anne La Flamme, Bronwyn Kivell.
7	Central κ-Opioid Receptor-Mediated Suppression of Atopic Dermatitis-Associated Pruritus and Its Impact on Immune Modulation	Yu Okamoto, Michiko Narita, Yuta Sekiguchi, Haruaki Yamaguchi, Yukari Suda, Yusuke Hamada, Yasuyuki Nagumo, Tsuyoshi Saito, Hiroshi Nagase, Yozo Ishiuji, Naoko Kuzumaki, Minoru Narita

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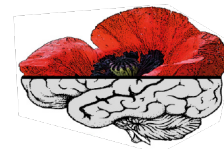
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8	Prokineticin-2 Signaling and Glial Activation as Therapeutic Targets for Fabry Disease neuropathic pain	Giulia Galimberti, Silvia Franchi, Giada Amodeo, Laura Rullo, Loredana Losapio, Patrizia Romualdi, Sanzio Candeletti, Benedetta Riboldi, Stefania Ceruti, Paola Sacerdote
9	A possible mechanism for suppressing tumor progression and alleviating tumor-related symptoms via regulation of the peripheral μ -opioid system	Yusuke Hamada, Minori Tabata, Mutsumi Kamemoto, Natsumi Iwakiri, Yukari Suda, Michiko Narita, Naoko Kuzumaki, Minoru Narita
10	Evaluating the pharmacokinetics of prolonged release injectable buprenorphine in mice	Joseph Nelson, Christopher P. Bailey, Stephen M. Husbands, Sarah J. Bailey
11	Using ultra-large DNA-encoded chemical libraries to discover novel opioid modulators	Evan S. O'Brien, Vipin Ashok Rangari, Shainnel O. Eans, Haylee R. Hammond, Elizabeth White, Haoqing Wang, Yuki Shiimura, Kaavya Krishna Kumar, Kevin Appourchaux, Jay P. McLaughlin, Barry Morgan, Susruta Majumdar, Brian K. Kobilka
12	In vitro and in vivo pharmacological characterization of a new N/OFQ dimeric derivative	Pietro Pola, Alessia Frezza, Chiara Sturaro, Erika Morrone, Alessandra Rizzo, Giulio Meneguzzo, Davide Malfacini, Girolamo Calo', Remo Guerrini, Chiara Ruzza
13	Peripherally Acting Mu Opioid Receptor Antagonists (PAMORAs): Investigating a Novel Strategy for Opioid Overdose Reversal	Brian C. Ruyle, Caroline G. Roth, Jose A. Moron-Concepcion
14	Chronic administration of NC-2800, a novel δ -opioid receptor agonist, exhibited antidepressant-like effects in mice without inducing tolerance.	Akiyoshi Saitoh, Toshinori Yoshioka, Pengfei liu, Daisuke Yamada, Eriko Nakata, Tomio Yamakawa

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15	Novel oxymorphone analogues, as bifunctional mu/delta opioid receptor agonists, produce antinociception without the risks of analgesic tolerance and physical dependence in mice	Mariana Spetea, Veronika Ernst, Maria Guastadisegni, Dominik Pircher, Barbara Brunner, Helmut Schmidhammer
16	Discovery of Phenyltriazole-Based Dual KOR Antagonists and MOR Agonists via Structure-Based Virtual Screening	Magdalena Tertil, Ryszard Bugno, Rafał Kurczab, Sabina Podlewska, Grzegorz Satała, Krystyna Nędza, Andrzej Bojarski, Ryszard Przewłocki
17	Design and Synthesis of Pyrazolomorphinan Derivatives as Novel Delta Opioid Receptor Agonists	Hideaki Fujii, Chiharu Iwamatsu, Saki Ishizaki, Hideki Nakamura, Daisuke Yamada, Shuma Yamada, Junichi Niwa, Toshinori Yoshioka, Pengfei Liu, Shintaro Shirakura, Shigeto Hirayama, Akiyoshi Saitoh
18	Structure-Activity Exploration of Delta Opioid Receptor Positive Allosteric Modulators	Alexander J. Powell, Mengchu Li, Ruiyang Ling, Hannah Stewart, Sherrice Zhang, Andrew D. White, John R. Traynor
19	Novel Hydroxynorketamine Analogs for Chronic Neuropathic Pain Management	Stefania Volpe, Gilles Zribi, Lakshmi Devi, Ivone Gomes, Lloyd Fricker, Irving Wainer, Lawrence Toll
20	TRPing receptors – modulatory effect of TRP channels on MOR	Julie Sanchez, J. Robert Lane, Meritxell Canals
21	Mapping Brain-Wide Neuronal Activation in Chronic Neuropathic Pain and Opioid-Mediated Analgesia	Madeline Martinez, Akihiko Ozawa, Lawrence Toll
22	Potentiation of opioid analgesia and delay of tolerance by ultramicrosized palmitoylethanolamide: involved cells, underlying mechanisms, and proteomics insights	Laura Micheli, Alessandra Toti, Samuele Trisolini, Lorenzo Di Cesare Mannelli, Carla Ghelardini
23	Morphine antinociception restored by methadone in the morphine-resistant inflammatory pain state	Hirokazu Mizoguchi, Chizuko Watanabe, Asami Komiyama, Masaru Yoshizumi, Shinobu Sakurada

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24	Sex-dependent neuronal activation and behavioural dysfunction caused by NTG-induced migraine is reversed by NOP receptor agonist	Akanksha Mudgal, Diana Pietrzak-Mitura, Olga Wronikowska-Denysiuk, Madeline Martinez, Lawrence Toll, Akihiko Ozawa, Katarzyna Targowska-Duda
25	The Effects of Mixed Mu/NOP Agonist on Mechanical Allodynia in NTG-Induced Acute and Chronic Migraine in Mice	Diana Pietrzak-Mitura, Akanksha Mudgal, Lawrence Toll, Akihiko Ozawa, Katarzyna Targowska-Duda
26	Implications of NOP and classical opioid receptor systems in treatment of migraine-like symptoms in mice	Katarzyna Targowska-Duda, Diana Pietrzak-Mitura, Akanksha Mudgal, Olga Wronikowska-Denysiuk, Lawrence Toll, Akihiko Ozawa
27	Decoding pain mediated shifts in social behavior following neuropathic injury in mice	Carlee Toddes, Kevin Bai, Isabel Halperin, David Ottenheimer, Mitra Heshmati, Sam Golden
28	Spinal Lipocalin-2 Contributes to the Development of Central Post-Stroke Pain	Shogo Tokuyama, Kazuo Nakamoto
29	Understanding the Impact of Inflammatory Pain on Alcohol Use: A Study in Rats with a Focus on Sex and Dose	Yolanda Campos-Jurado, Youssef M. Saad, Alexandre Neptune, Bilal Zahoor, Haziq Latif-Jangda, Jose A. Moron
30	Convergent state-control of endogenous opioid analgesia	Blake A. Kimmey, Lindsay Ejoh, Lily Shangloo, Jessica A. Wojick, Samar Nasser Chehimi, Nora M. McCall, Corinna S. Oswald, Malaika Mahmood, Lite Yang, Vijay K. Samineni, Charu Ramakrishnan, Karl Deisseroth, Richard C. Crist, Benjamin C. Reiner, Lin Tian, Gregory Corder
31	The kappa opioid receptor (KOR) in paraventricular nucleus of the thalamus (PVT)	Chongguang Chen, Peng Huang, Kathryn Bland, Kevin Beier, Lee-Yuan Liu-Chen
32	Hypothalamic Vasopressin - Dynorphin Neural Circuit in Endocrine Control of Left-Right Balance	Mengliang Zhang, Hiroyuki Watanabe, Yaromir Kobikov, Guifa Li, Olga Nosova, Emma Lindström, Karen Rich, Yoichi Ueta, Takashi Maruyama, Mathias Hallberg, Georgy Bakalkin

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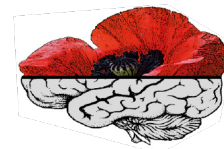
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33	Ventral tegmental area neurons expressing μ -opioid receptor make distal connections	Lucie Oriol, Melody Chao, Sarthak Singal, Thomas S. Hnasko
34	Medullary Raphe Serotonin Neurons are Influenced by Opioids and Improve Breathing	Ryan C. Pauly, Jessica R. Whitaker-Fornek, Keiko Arakawa, Erica S. Levitt
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36	Excitatory synaptic transmission is differentially modulated by opioid receptors along the claustrum-cingulate pathway	Jacob M. Reeves, Erwin Arias-Hervet, Gracianne E. Kmiec, William T. Birdsong
37	Autophagy in Reversing Neuronal Damage from HIV and Morphine	Myosotys Rodriguez, Florida Owens, Candy Carbajal, Dileepkumar Veeragoni, Nazira El-Hage
38	A novel form of spatiotemporal bias – using mathematical models and electrophysiology in C57 mice to compare pre- and post-synaptic MOPrs	Sambrook, M.O., Bridge, L., Kelly, E., Williams, R.J., Bailey, C.P.
39	Immunohistochemical and mRNA detection of opioid receptors and their endogenous ligands in human dorsal root ganglion neurons	Michael Schaefer, Mohammed Shaqura, Özgür Celik, Sascha Treskatsch, Shaaban Mousa
40	Role of central amygdala protein kinase C-delta, corticotropin-releasing factor, and somatostatin neurons in opioid-related mice behavior	Lucas Silva Tortorelli, Henry Zin Oo, Suyun Hahn, Yocasta Alvarez-Bagnarol, Yarimar Carrasquillo, Marisela Morales, Leandro F. Vendruscolo
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45	Isolating the role of endogenous μ -opioid activity in the Ventral Tegmental Area during natural reward	Catalina A. Zamorano, Brianna L. Smith, Ashritha B. Cheeyandira, Michael R. Bruchas
46	Inhibitors of Glycine Transporter 1 Reduce the Development of Morphine Antinociceptive Tolerance in Rats	Sarah Kadhim Abbood, Anna Rita Galambos, Nariman Essmat, Imre Boldizsár, Jr., Tamás Tábi, Pál Riba, Laszlo G. Harsing, Jr., Ferenc Zádor Mahmoud Al-Khrasani
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49	Presynaptic modulation of transmitter release in striatopallidal afferents by the μ Opioid receptor	Medrano, J., Williams, J., Ozburn, A.
50	Investigation of Pregabalin, Tolperisone, and Naloxone in the Context of Morphine-Induced Tolerance and Constipation in Rats	Nariman Essmat, Kornél Király, Zoltán S Zádori, Mahmoud Al-Khrasani
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53	CaMKII β in opioid tolerance, dependence, opioid-induced hyperalgesia, and neuropathic pain	Xuebi Tian, Giokdjen Ilktach, Xiao Guo, Meghna Gill, Michael A. Wang, Yavnika Kashyap, Zaijie Jim Wang
54	Pharmacological characterization and evaluation of health risks of bovine BCM-7	Gerdes, E.K., Biechl, K., Gard, F., Deeg, C.A., Ammer, H.
55	Selective inhibition of hemokinin-1-induced pruritic behavior by non-opioid sendide derivatives	Takafumi Hayashi, Kazuhiro Watanabe, Tsutomu Fujimura, Yasuyuki Agatsuma, Shinobu Sakurada
56	Aticaprant to the rescue: Targeting the κ -opioid receptor system to shield mood and memory from stress impairments	Alexandra Symeonof, Anastasia Vamvaka-Iakovou, Christos Karoussiotis, Alexandra Tsoutsani, Ioannis Sotiropoulos, Zafiroula Georgoussi
57	A cellulose-rich diet disrupts gut homeostasis and leads to anxiety through opioid-mediated gut-brain axis in mice	Chihiro Nozaki, Haruka Hosoki, Kaede Ito, Hiroyuki Sasaki, Shigenobu Shibata