Supplemental Information: The mouse as a model for neuropsychiatric drug development

James R. Howe VI, Mark F. Bear, Peyman Golshani, Eric Klann, Stuart A. Lipton, Lennart Mucke, Mustafa Sahin, and Alcino J. Silva

Supplemental Table Legend

Table S1. Confidence in back-translatability of selected neuropsychiatric drugs from humans back to mice in specific behavioral assays for selected neuropsychiatric indications. Bold denotes the indication for the drugs listed below the indication and italics indicate that the drug was used as an adjunct rather than a primary treatment. SSRI: Selective serotonin reuptake inhibitor; SARI: Serotonin antagonist and reuptake inhibitor; SNRI: Selective serotonin-norepinephrine reuptake inhibitor; NDRI: Norepinephrine-dopamine reuptake inhibitor; FST: forced swim test; TST: tail suspension test; EPM: elevated plus maze; PTZ: pentylenetetrazole test; MES: maximal electroshock seizure test; PPI: prepulse inhibition; ADHD: attention deficit hyperactivity disorder; OCD: obsessive-compulsive disorder; NMDA: *N*-methyl-D-aspartate; GABA: γ-aminobutyric acid; AChE: acetylcholinesterase

Supplemental Methods

Review Details

To generate the initial list of neuropsychiatric drugs for review, we consulted a list of the 200 most-prescribed branded drugs from 2014, the most recent year for which

this data was available (Symphony Health Solutions, unpublished data, 2015). We selected all compounds indicated for neuropsychiatric indications, using this set of compounds as a nonexhaustive, generally representative sample of common neuropsychiatric drugs. We considered drugs to be clinically effective if they could gain and maintain FDA approval for a given indication. A drug was considered indicated for neuropsychiatric disease if its FDA-approved label indicated it for treatment of a neurological or psychiatric disease (as either a primary or adjunct therapy), and the listed indications were the only ones considered for review in the drug's efficacy in mouse behavioral assays. We excluded prodrugs metabolized into active drugs found elsewhere on the list (e.g., codeine and lisdexamfetamine) and combination drugs (e.g., hydrocodone-acetamenophen) to ensure we examined only single compounds with more circumscribed effects.

We considered each indication for each drug independently, using the drug-indication combination as the general unit of analysis in this review. All listed neuropsychiatric indications were investigated for each drug, with the exception of two (promethazine for sedation and methylphenidate for narcolepsy) for which no relevant studies could be identified for review. To determine whether a drug was originally developed for a given indication using mouse behavioral assays, we examined each drug's original patent. If the application mentioned a behavioral assay for a given indication performed in mice, we classified the drug as developed using mice for that indication. If the patent did not contain either proprietary information or a reference to a prior study with that information, we assumed mouse behavioral assays were not used to develop the drug for that indication.

We conducted a systematic review for studies testing the selected drugs using mouse behavioral assays for the FDA-indicated neuropsychiatric disorders by electronic search of the Reuters Web of Science database (July-August 2016) using the search terms "[name of drug] + [indication of interest]," sorting by citation count in descending order. We used the 25 most-cited qualifying studies for each drug-indication combination, and if our search returned fewer than 25 studies for the combination, we used all qualifying studies. If a drug was indicated for multiple neuropsychiatric indications and a study included for one indication contained experiments applicable to other approved indications for that drug, but it was outside the top 25 most-cited for that indication, it was also reviewed for the drug's other indication. As a result, more than 25 studies were reviewed in a subset of drug-indication combinations.

A study qualified for inclusion in this review if it contained one or more experiments utilizing (1) a mouse model of a neuropsychiatric disorder for which the drug of interest was indicated and (2) a widely-accepted behavioral assay relevant to the neuropsychiatric disorder, and if at least one of the treatments was administration of the drug of interest (alone if approved for the indication as a primary therapy or in combination with an FDA-approved primary therapy if approved as an adjunct). We included mouse neuropsychiatric disease models if the investigator claimed it modeled either the indication of interest or a closely related indication with similar symptoms, due to the relative etiological uncertainty of neuropsychiatric disease. No studies were excluded or differentially weighted on the basis of the method used to model the indication of interest, dosage or route of administration of the drug, mouse genetic background, journal of publication, date of publication, authorship or any

features/associations of the authors, rationale for the experiment, or any other aspects of the study unrelated to the methodology of the experiment(s) of interest. No reviews, conference abstracts, books, or meta-analyses were considered for inclusion.

Quantification and Statistical Analysis

For each drug-indication combination, we divided experiments into groups based on the mouse behavioral assay used. If the drug was approved as an adjunct, we further subdivided these groups based on the primary therapy it modified. In all experiments, we classified a successful back-translation as a result where administration of the drug produced a statistically significant result in the expected direction based on its use in humans and a failed back-translation as a result where administration of the drug failed to yield such a result (i.e., either statistically nonsignificant or significant in an unexpected direction). If the FDA approved the compound only as an adjunct to enhance another neuropsychiatric drug, we assessed it based only on its enhancement of the primary compound's behavioral effect. We took statistical significance statements made in reviewed studies at face value. In light of the diversity of treatments, models and statistical methods used and variations in how different groups presented data even for the same behavioral assay, we did not attempt to assign different weights to different experimental designs or independently estimate effect sizes or degrees of efficacy.

To avoid overestimating significance as a result of publication bias, including selection of the most impactful papers, we used conservative estimations of confidence to assess back-translatability. We divided our estimates of confidence in back-translatability into four general tiers: high, moderate, low, and ineffective. To reach a determination of

"high confidence," a drug had to succeed in a behavioral assay in at least 90% of replications, with a minimum of 3 replicates. For the purposes of this study, we defined a replicate as an experiment utilizing a given compound in a given behavioral assay in an independent publication. A "moderate confidence" determination required between a 67-90% replication success rate in a minimum of 3 replicates. All combinations with success rates sufficient to qualify as high or moderate confidence but with fewer than 3 replicates were classified as "low confidence." Any combination with a replication success rate below 67% was classified as "ineffective," regardless of the number of replicates.

Simple determinations of back-translatability were made based on the highest level of confidence that a single behavioral assay could qualify for in a given drug-indication combination. If at least one behavioral assay replicated at high confidence or moderate confidence, general confidence in back-translation of the combination was classified as "high" or "moderate," respectively. Due to the relatively high standard for a drug to pass even the "moderate" threshold for efficacy in a given behavioral assay, we considered this sufficient evidence to support classification as a successful back-translation to mice. If all assays were ineffective, then we classified the drug-indication combination as a "failure" to back-translate. If the drug-indication combination showed efficacy, but only in behavioral assays where less than three studies had been conducted under the given conditions, then general confidence was classified as "inconclusive." We used this classification because these combinations did not meet the standards to support a determination of efficacy or lack thereof. We could not classify the compound as ineffective in the given behavioral assay for the given indication, because its success rate would otherwise be sufficient to give us moderate or high confidence in its efficacy.

However, we cannot classify it as efficacious with any degree of confidence, as it has not been validated to a sufficient degree. Hence, more information is needed; the current literature is “inconclusive.”

References for each drug/indication combination

Alprazolam (anxiety): [S1-S25].

Amitryptyline (depression): [S26-S50].

Amphetamine:
Attention deficit/hyperactivity disorder (ADHD): [S51-S75].
Narcolepsy: [S76-S81].

Aripiprazole:
Depression: [S82-S87].
Bipolar disorder: [S82-S105].
Schizophrenia: [S86-S108].
Tourette’s disease: [S87, S94-S95, S97-S98, S106, S108]

Baclofen (myorelaxation): [S109-S126].

Bupropion:
Depression: [S40, S44, S127-S148].
Smoking cessation: [S127, S149-S164].

Buspirone (anxiety): [S20-S21, S25, S42, S165-S185].

Citalopram (depression): [S85, S129, S145, S186-S207].

Clonazepam:
Anxiety: [S14, S208-S214].
Seizures: [S214-S238].

Clonidine (ADHD): [S239-S250].

Diazepam:
Anxiety: [S12, S169, S181-S182, S251-S280].
Seizures: [S12, S234, S253, S259, S265-S266, S268, S273, S275, S281-S302].
Myorelaxation: [S12, S123, S253, S255, S259-262, S266-S267, S268, S275, S277, S279, S283, S291-S292, S300, S304-S309].

Donepezil (Alzheimer's disease): [S310-S331].

Duloxetine:
Depression: [S332-S347].
Anxiety: [S247, S343, S347-S350].
Pain: [S342, S351-S360].

Escitalopram:
Depression: [S44, S143, S337, S344, S361-S378].
Anxiety: [S362, S374, S377-S386].

Fentanyl (pain): [S387-S411].

Fluoxetine:
Depression: [S129, S193, S195, S197, S200, S412-S441].
Anxiety: [S200, S414-S416, S418-S422, S424, S426, S427, S433-S436, S442-S454].
Obsessive-compulsive disorder (OCD): [S195, S434, S444, S447-S448, S451-S452, S455-S472].

Gabapentin:
Pain: [S342, S352, S473-S498].
Seizures: [S236, S288, S290, S299, S499-S518].

Lamotrigine:
Seizures: [S236, S285, S287-S288, S290, S299, S499-S500, S502, S504, S513, S517, S519-S533].
Bipolar disorder: [S520, S523, S533-S544].

Levetiracetam (seizures): [S232, S290, S299, S501, S512-S513, S521, S527, S533, S545-S558].

Lidocaine (anaesthesia): [S559-S583].

Lorazepam:
Anxiety: [S2, S14, S211-S212, S309, S584-S595].
Seizures: [S590-S592, S596-S601].

Methocarbamol (myorelaxation): [S123, S602].

Methylphenidate (ADHD): [S51, S60-S61, S69-S70, S74, S603-S621].

Mirtazapine (depression): [S622-S624].

Morphine (pain): [S409, S625-S648].

Oxycodone (pain): [S391, S396, S399, S403, S410, S649-S668].

Paroxetine:
Depression: [S36, S45, S129, S131-S132, S145, S188, S192, S199-S200, S429, S669-S688].
Anxiety: [S36, S200, S349, S384 S671-S673, S677, S679-S680, S686-S687, S689-S702].
OCD: [S467, S471, S672, S678-S679, S681, S703-S707].

Pregabalin:
Pain: [S342, S351, S358, S476, S487, S496, S708-S727].
Seizures: [S299, S511, S515, S728-S736].

Promethazine (pain): [S737-S740].

Quetiapine:
Depression: [S86, S741-S744].
Bipolar disorder: [S86, S93, S107, S741-S750].
Schizophrenia: [S86, S93, S107, S741, S743, S745, S747-S751].

Risperidone:
Bipolar disorder: [S91, S93, S97, S748, S752-S774].
Schizophrenia: [S91, S93, S97, S106, S748, S752-S759, S761-S778].

Ropinirole (Parkinson's disease): [S779-S787].

Sertraline:
Depression: [S31, S49, S82, S129, S192-S193, S199-S200, S670, S678, S788-S802].
Anxiety: [S31, S49, S200, S680, S789, S795, S797, S801-S808].
OCD: [S678, S809].

Sumatriptan (pain): [S810-S818].

Temazepam (sedation): [S819].

Topiramate (seizures): [S223, S236, S286, S290, S299, S309, S504, S513, S519, S521, S524-S529, S533, S820-S827].

Tramadol (pain): [S639, S666, S828-S849].

Trazodone (depression): [S47, S850-S857].

Venlafaxine:
Depression: [S44, S82, S134, S137-S138, S143, S334-S337, S790, S796, S852, S858-S869].
Anxiety: [S143, S349, S384, S680, S690, S692, S695, S697, S862, S865-S872].

Zolpidem (sedation): [S258, S265, S591, S684, S873-S895].

Supplemental References

S1. Blanchard, R.J., Griebel, G., Andrew Henrie, J., and Caroline Blanchard, D. (1997). Differentiation of anxiolytic and panicolytic drugs by effects on rat and mouse defense test batteries. Neurosci. Biobehav. Rev. *21*, 783-789.

S2. Bourin, M., Hascoet, M., Mansouri, B., Colombel, M.C., and Bradwejn, J. (1992). Comparison of behavioral effects after single and repeated administrations of four benzodiazepines in three mice behavioral models. J. Psychiatry Neurosci. *17*, 72-77.

S3. Bourin, M., Masse, F., Dailly, E., and Hascoët, M. (2005a). Anxiolytic-like effect of milnacipran in the four-plate test in mice: Mechanism of action. Pharmacol. Biochem. Behav. *81*, 645-656.

S4. Foreman, M.M., Hanania, T., and Eller, M. (2009). Anxiolytic effects of lamotrigine and JZP-4 in the elevated plus maze and in the four plate conflict test. Eur. J. Pharmacol. *602*, 316-320.

S5. Fraser, L.M., Brown, R.E., Hussin, A., Fontana, M., Whittaker, A., O'Leary, T.P., Lederle, L., Holmes, A., and Ramos, A. (2010). Measuring anxiety- and locomotion-related behaviours in mice: a new way of using old tests. Psychopharmacology (Berl.) *211*, 99-112.

S6. García-Gutiérrez, M.S., and Manzanares, J. (2010). Overexpression of CB2 cannabinoid receptors decreased vulnerability to anxiety and impaired anxiolytic action of alprazolam in mice. J. Psychopharmacol. *25*, 111-120.

S7. Goyal, R., and Anil, K. (2007). Protective effect of alprazolam in acute immobilization stress-induced certain behavioral and biochemical alterations in mice. Pharmacol Rep *59*, 284-290.

S8. Griebel, G., Blanchard, D.C., Jung, A., Lee, J.C., Masuda, C.K., and Blanchard, R.J. (1995). Further evidence that the mouse defense test battery is useful for screening anxiolytic and panicolytic drugs: Effects of acute and chronic treatment with alprazolam. Neuropharmacology *34*, 1625-1633.

S9. Griebel, G., Sanger, D.J., and Perrault, G. (1996). Further evidence for differences between non-selective and BZ-1 (ω1) Selective, benzodiazepine receptor ligands in murine models of "state" and "trait" anxiety. Neuropharmacology *35*, 1081-1091.

S10. Hascoët, M., and Bourin, M. (1998). A new approach to the light/dark test procedure in mice. Pharmacol. Biochem. Behav. *60*, 645-653.

S11. Hata, T., Nishikawa, H., Itoh, E., and Funakami, Y. (2001). Anxiety-like behavior in elevated plus-maze tests in repeatedly cold-stressed mice. Jpn. J. Pharmacol. *85*, 189-196.

S12. Jenck, F., Moreau, J.L., Bonetti, E.P., Martin, J.R., and Haefely, W.E. (1992). Ro 19-8022, a nonbenzodiazepine partial agonist at benzodiazepine receptors: neuropharmacological profile of a potential anxiolytic. J. Pharmacol. Exp. Ther. *262*, 1121-1127.

S13. Jones, G.H., Schneider, C., Schneider, H.H., Seidler, J., Cole, B.J., and Stephens, D.N. (1994). Comparison of several benzodiazepine receptor ligands in two models of anxiolytic activity in the mouse: an analysis based on fractional receptor occupancies. Psychopharmacology (Berl.) *114*, 191-199.

S14. Krsiak, M., and Sulcova, A. (1990). Differential effects of six structurally related benzodiazepines on some ethological measures of timidity, aggression and locomotion in mice. Psychopharmacology (Berl.) *101*, 396-402.

S15. Lecci, A., Borsini, F., Volterra, G., and Meli, A. (1990). Pharmacological validation of a novel animal model of anticipatory anxiety in mice. Psychopharmacology (Berl.) *101*, 255-261.

S16. Leonard, S.K., Dwyer, J.M., Sukoff Rizzo, S.J., Platt, B., Logue, S.F., Neal, S.J., Malberg, J.E., Beyer, C.E., Schechter, L.E., Rosenzweig-Lipson, S., and Ring, R.H. (2008). Pharmacology of neuropeptide S in mice: therapeutic relevance to anxiety disorders. Psychopharmacology (Berl.) *197*, 601-611.

S17. Olivier, B., Bouwknecht, J.A., Pattij, T., Leahy, C., van Oorschot, R., and Zethof, T.J.J. (2002). $GABA_A$–benzodiazepine receptor complex ligands and stress-induced hyperthermia in singly housed mice. Pharmacol. Biochem. Behav. *72*, 179-188.

S18. Pattij, T., Groenink, L., Oosting, R.S., van der Gugten, J., Maes, R.A.A., and Olivier, B. (2002). $GABA_A$–benzodiazepine receptor complex sensitivity in 5-HT_{1A} receptor knockout mice on a 129/Sv background. Eur. J. Pharmacol. *447*, 67-74.

S19. Ring, R.H., Malberg, J.E., Potestio, L., Ping, J., Boikess, S., Luo, B., Schechter, L.E., Rizzo, S., Rahman, Z., and Rosenzweig-Lipson, S. (2006). Anxiolytic-like activity of oxytocin in male mice: behavioral and autonomic evidence, therapeutic implications. Psychopharmacology (Berl.) *185*, 218-225.

S20. Rorick-Kehn, L.M., Hart, J.C., and McKinzie, D.L. (2005). Pharmacological characterization of stress-induced hyperthermia in DBA/2 mice using metabotropic and ionotropic glutamate receptor ligands. Psychopharmacology (Berl.) *183*, 226-240.

S21. Shimada, T., Matsumoto, K., Osanai, M., Matsuda, H., Terasawa, K., and Watanabe, H. (1995). The modified light/dark transition test in mice: evaluation of classic and putative anxiolytic and anxiogenic drugs. Gen. Pharmacol. *26*, 205-210.

S22. Smith, D.G., Davis, R.J., Rorick-Kehn, L., Morin, M., Witkin, J.M., McKinzie, D.L., Nomikos, G.G., and Gehlert, D.R. (2005). Melanin-concentrating hormone-1 receptor modulates neuroendocrine, behavioral, and corticolimbic neurochemical stress responses in mice. Neuropsychopharmacology *31*, 1135-1145.

S23. Smith, K.S., Meloni, E.G., Myers, K.M., Van't Veer, A., Carlezon, W.A., and Rudolph, U. (2011). Reduction of fear-potentiated startle by benzodiazepines in C57BL/6J mice. Psychopharmacology (Berl.) *213*, 697-706.

S24. Votava, M., Krsiak, M., Podhorna, J., and Miczek, K.A. (2001). Alprazolam withdrawal and tolerance measured in the social conflict test in mice. Psychopharmacology (Berl.) *157*, 123-130.

S25. Zethof, T.J.J., Van Der Heyden, J.A.M., Tolboom, J.T.B.M., and Olivier, B. (1995). Stress-induced hyperthermia as a putative anxiety model. Eur. J. Pharmacol. *294*, 125-135.

S26. Abdel-Salam, O.M.E. (2006). Antinociceptive and behavioral effects of ribavirin in mice. Pharmacol. Biochem. Behav. *83*, 230-238.

S27. Bilkei-Gorzo, A., Michel, K., Noble, F., Roques, B.P., and Zimmer, A. (2007). Preproenkephalin knockout mice show no depression-related phenotype. Neuropsychopharmacology *32*, 2330-2337.

S28. Caldarone, B.J., Karthigeyan, K., Harrist, A., Hunsberger, J.G., Wittmack, E., King, S.L., Jatlow, P., and Picciotto, M.R. (2003). Sex differences in response to oral amitriptyline in three animal models of depression in C57BL/6J mice. Psychopharmacology (Berl.) *170*, 94-101.

S29. Caldarone, B.J., Harrist, A., Cleary, M.A., Beech, R.D., King, S.L., and Picciotto, M.R. (2004). High-affinity nicotinic acetylcholine receptors are required for antidepressant effects of amitriptyline on behavior and hippocampal cell proliferation. Biol. Psychiatry *56*, 657-664.

S30. Chen, Y., Kong, L.-D., Xia, X., Kung, H.-F., and Zhang, L. (2005). Behavioral and biochemical studies of total furocoumarins from seeds of *Psoralea corylifolia* in the forced swimming test in mice. J. Ethnopharmacol. *96*, 451-459.

S31. Chevallier, N., Keller, E., and Maurice, T. (2011). Behavioural phenotyping of knockout mice for the sigma-1 (σ_1) chaperone protein revealed gender-related anxiety, depressive-like and memory alterations. J. Psychopharmacol. *25*, 960-975.

S32. Galeotti, N., Bartolini, A., and Ghelardini, C. (2006). Blockade of intracellular calcium release induces an antidepressant-like effect in the mouse forced swimming test. Neuropharmacology *50*, 309-316.

S33. Galeotti, N., Vivoli, E., Bartolini, A., and Ghelardini, C. (2008). A gene-specific cerebral types 1, 2, and 3 RyR protein knockdown induces an antidepressant-like effect in mice. J. Neurochem. *106*, 2385-2394.

S34. Galeotti, N., Ghelardini, C., Caldari, B., and Bartolini, A. (1999). Effect of potassium channel modulators in mouse forced swimming test. Br. J. Pharmacol. *126*, 1653-1659.

S35. Galeotti, N., Bartolini, A., and Ghelardini, C. (2002). Role of Gi proteins in the antidepressant-like effect of amitriptyline and clomipramine. Neuropsychopharmacology *27*, 554-564.

S36. Gassen, N.C., Hartmann, J., Zschocke, J., Stepan, J., Hafner, K., Zellner, A., Kirmeier, T., Kollmannsberger, L., Wagner, K.V., Dedic, N., *et al.* (2014). Association of FKBP51 with priming of autophagy pathways and mediation of antidepressant treatment response: Evidence in cells, mice, and humans. PLoS Med. *11*, e1001755.

S37. Guo, W.Y., Todd, K.G., Bourin, M., and Hascoet, M. (1995). The additive effects of quinine on antidepressant drugs in the forced swimming test in mice. Psychopharmacology (Berl.) *121*, 173-179.

S38. Hayase, T. (2008). Nicotine (NC)-induced "depressive" behavioral symptoms and effects of antidepressants including cannabinoids (CBs). J Toxicol Sci *33*, 555-564.

S39. Farah Idayu, N., Taufik Hidayat, M., Moklas, M.A.M., Sharida, F., Nurul Raudzah, A.R., Shamima, A.R., and Apryani, E. (2011). Antidepressant-like effect of mitragynine isolated from *Mitragyna speciosa* Korth in mice model of depression. Phytomedicine *18*, 402-407.

S40. Jesse, C.R., Wilhelm, E.A., and Nogueira, C.W. (2010). Depression-like behavior and mechanical allodynia are reduced by bis selenide treatment in mice with chronic constriction injury: a comparison with fluoxetine, amitriptyline, and bupropion. Psychopharmacology (Berl.) *212*, 513-522.

S41. Lamberti, C., Ipponi, A., Bartolini, A., Schunack, W., and Malmberg-Aiello, P. (1998). Antidepressant-like effects of endogenous histamine and of two histamine H_1 receptor agonists in the mouse forced swim test. Br. J. Pharmacol. *123*, 1331-1336.

S42. Liu, G.-X., Cai, G.-Q., Cai, Y.-Q., Sheng, Z.-J., Jiang, J., Mei, Z., Wang, Z.-G., Guo, L., and Fei, J. (2006). Reduced anxiety and depression-like behaviors in mice lacking GABA transporter subtype 1. Neuropsychopharmacology *32*, 1531-1539.

S43. Pandey, D.K., Mahesh, R., Kumar, A.A., Rao, V.S., Arjun, M., and Rajkumar, R. (2010). A novel 5-HT_{2A} receptor antagonist exhibits antidepressant-like effects in a battery of rodent behavioural assays: Approaching early-onset antidepressants. Pharmacol. Biochem. Behav. *94*, 363-373.

S44. Rajkumar, R., Pandey, D.K., Mahesh, R., and Radha, R. (2009). 1-(*m*-Chlorophenyl)piperazine induces depressogenic-like behaviour in rodents by stimulating the neuronal 5-HT_{2A} receptors: Proposal of a modified rodent antidepressant assay. Eur. J. Pharmacol. *608*, 32-41.

S45. Redrobe, J.P., Pinot, P., and Bourin, M. (1996). The effect of the potassium channel activator, cromakalim, on antidepressant drugs in the forced swimming test in mice. Fundam Clin Pharmacol *10*, 524-528.

S46. Socała, K., Nieoczym, D., Wyska, E., Poleszak, E., and Wlaź, P. (2012). Sildenafil, a phosphodiesterase type 5 inhibitor, enhances the antidepressant activity of amitriptyline but not desipramine, in the forced swim test in mice. J Neural Transm (Vienna) *119*, 645-652.

S47. Takeuchi, H., Yatsugi, S.-i., Hatanaka, K.-i., Nakato, K., Hattori, H., Sonoda, R., Koshiya, K., Fujii, M., and Yamaguchi, T. (1997). Pharmacological studies on YM992, a novel antidepressant with selective serotonin re-uptake inhibitory and 5-HT_{2A} receptor antagonistic activity. Eur. J. Pharmacol. *329*, 27-35.

S48. Ushijima, K., Sakaguchi, H., Sato, Y., To, H., Koyanagi, S., Higuchi, S., and Ohdo, S. (2005). Chronopharmacological study of antidepressants in forced swimming test of mice. J. Pharmacol. Exp. Ther. *315*, 764-770.

S49. Villard, V., Meunier, J., Chevallier, N., and Maurice, T. (2011). Pharmacological interaction with the sigma$_1$ (σ_1)-receptor in the acute behavioral effects of antidepressants. J. Pharmacol. Sci. 1*15*, 279-292.

S50. Xia, X., Cheng, G., Pan, Y., Xia, Z.H., and Kong, L.D. (2007). Behavioral, neurochemical and neuroendocrine effects of the ethanolic extract from *Curcuma longa* L. in the mouse forced swimming test. J Ethnopharmacol *110*, 356-363.

S51. Avale, M.E., Falzone, T.L., Gelman, D.M., Low, M.J., Grandy, D.K., and Rubinstein, M. (2004). The dopamine D4 receptor is essential for hyperactivity and impaired behavioral inhibition in a mouse model of attention deficit/hyperactivity disorder. Mol. Psychiatry *9*, 718-726.

S52. Bensadoun, J.-C., Brooks, S.P., and Dunnett, S.B. (2004). Free operant and discrete trial performance of mice in the nine-hole box apparatus: validation using amphetamine and scopolamine. Psychopharmacology (Berl.) *174*, 396-405.

S53. Chang, T., Meyer, U., Feldon, J., and Yee, B.K. (2007). Disruption of the US pre-exposure effect and latent inhibition in two-way active avoidance by systemic amphetamine in C57BL/6 mice. Psychopharmacology (Berl.) *191*, 211-221.

S54. Conceição, I.M., and Frussa-Filho, R. (1996). Effects of microgram doses of haloperidol on open-field behavior in mice. Pharmacol. Biochem. Behav. *53*, 833-838.

S55. Fan, X., and Hess, E.J. (2007). D2-like dopamine receptors mediate the response to amphetamine in a mouse model of ADHD. Neurobiol. Dis. *26*, 201-211.

S56. Fan, X., Xu, M., and Hess, E.J. (2010). D2 dopamine receptor subtype-mediated hyperactivity and amphetamine responses in a model of ADHD. Neurobiol. Dis. *37*, 228-236.

S57. Fredriksson, A., and Archer, T. (2003). Hyperactivity following postnatal NMDA antagonist treatment: reversal by D-amphetamine. Neurotox Res *5*, 549-564.

S58. Fredriksson, A., and Archer, T. (2004). Neurobehavioural deficits associated with apoptotic neurodegeneration and vulnerability for ADHD. Neurotox Res *6*, 435-456.

S59. Gainetdinov, R.R., Wetsel, W.C., Jones, S.R., Levin, E.D., Jaber, M., and Caron, M.G. (1999). Role of serotonin in the paradoxical calming effect of psychostimulants on hyperactivity. Science 283, 397-401.

S60. Hess, E.J., Collins, K.A., and Wilson, M.C. (1996). Mouse model of hyperkinesis implicates SNAP-25 in behavioral regulation. J. Neurosci. *16*, 3104-3111.

S61. Issy, A.C., Salum, C., and Del Bel, E.A. (2009). Nitric oxide modulation of methylphenidate-induced disruption of prepulse inhibition in Swiss mice. Behav. Brain Res. *205*, 475-481.

S62. Lahdesmaki, J., Sallinen, J., MacDonald, E., and Scheinin, M. (2004). Alpha2A-adrenoceptors are important modulators of the effects of D-amphetamine on startle reactivity and brain monoamines. Neuropsychopharmacology *29*, 1282-1293.

S63. Loos, M., Staal, J., Schoffelmeer, A.N.M., Smit, A.B., Spijker, S., and Pattij, T. (2010). Inhibitory control and response latency differences between C57BL/6J and DBA/2J mice in a Go/No-Go and 5-choice serial reaction time task and strain-specific responsivity to amphetamine. Behav. Brain Res. *214*, 216-224.

S64. Moy, S.S., Riddick, N.V., Nikolova, V.D., Teng, B.L., Agster, K.L., Nonneman, R.J., Young, N.B., Baker, L.K., Nadler, J.J., and Bodfish, J.W. (2014). Repetitive behavior profile and supersensitivity to amphetamine in the C58/J mouse model of autism. Behav. Brain Res. *259*, 200-214.

S65. Napolitano, F., Bonito-Oliva, A., Federici, M., Carta, M., Errico, F., Magara, S., Martella, G., Nisticò, R., Centonze, D., Pisani, A., *et al.* (2010). Role of aberrant striatal dopamine D_1 receptor/cAMP/protein kinase A/DARPP32 signaling in the paradoxical calming effect of amphetamine. J. Neurosci. *30*, 11043-11056.

S66. Sandau, U.S., Alderman, Z., Corfas, G., Ojeda, S.R., and Raber, J. (2012). Astrocyte-specific disruption of SynCAM1 signaling results in ADHD-like behavioral manifestations. PLoS One *7*, e36424.

S67. Smith, D.G., Qi, H., Svenningsson, P., Wade, M., Davis, R.J., Gehlert, D.R., and Nomikos, G.G. (2008). Behavioral and biochemical responses to d-amphetamine in MCH1 receptor knockout mice. Synapse *62*, 128-136.

S68. Tanaka, K., Shintani, N., Hashimoto, H., Kawagishi, N., Ago, Y., Matsuda, T., Hashimoto, R., Kunugi, H., Yamamoto, A., Kawaguchi, C., *et al.* (2006). Psychostimulant-induced attenuation of hyperactivity and prepulse inhibition deficits in *Adcyap1*-deficient mice. J. Neurosci. 26, 5091.

S69. Thanos, P.K., Bermeo, C., Rubinstein, M., Suchland, K.L., Wang, G.J., Grandy, D.K., and Volkow, N.D. (2010). Conditioned place preference and locomotor activity in response to methylphenidate, amphetamine and cocaine in mice lacking dopamine D4 receptors. J. Psychopharmacol. (Oxford) *24*, 897-904.

S70. Won, H., Mah, W., Kim, E., Kim, J.-W., Hahm, E.-K., Kim, M.-H., Cho, S., Kim, J., Jang, H., Cho, S.-C., *et al.* (2011). GIT1 is associated with ADHD in humans and ADHD-like behaviors in mice. Nat. Med. *17*, 566-572.

S71. Wood, S.C., and Anagnostaras, S.G. (2009). Memory and psychostimulants: modulation of Pavlovian fear conditioning by amphetamine in C57BL/6 mice. Psychopharmacology (Berl.) *202*, 197-206.

S72. Yan, T.C., McQuillin, A., Thapar, A., Asherson, P., Hunt, S.P., Stanford, S.C., and Gurling, H. (2009). NK_1 ($TACR_1$) receptor gene 'knockout' mouse phenotype predicts genetic association with ADHD. J. Psychopharmacol. (Oxford) *24*, 27-38.

S73. Yan, T.C., Dudley, J.A., Weir, R.K., Grabowska, E.M., Peña-Oliver, Y., Ripley, T.L., Hunt, S.P., Stephens, D.N., and Stanford, S.C. (2011). Performance deficits of NK1 receptor knockout mice in the 5-choice serial reaction-time task: Effects of d-amphetamine, stress and time of day. PLoS One *6*, e17586.

S74. Zhou, M., Rebholz, H., Brocia, C., Warner-Schmidt, J.L., Fienberg, A.A., Nairn, A.C., Greengard, P., and Flajolet, M. (2010). Forebrain overexpression of CK1δ leads to down-regulation of dopamine receptors and altered locomotor activity reminiscent of ADHD. Proc. Natl. Acad. Sci. U.S.A. *107*, 4401-4406.

S75. Zhuang, X., Oosting, R.S., Jones, S.R., Gainetdinov, R.R., Miller, G.W., Caron, M.G., and Hen, R. (2001). Hyperactivity and impaired response habituation in hyperdopaminergic mice. Proc. Natl. Acad. Sci. U.S.A. *98*, 1982-1987.

S76. Barnes, C.D., and Meyers, F.H. (1964). Eserine and amphetamine: Interactive effects on sleeping time in mice. Science *144*, 1221-1222.

S77. Burgess, C.R., Tse, G., Gillis, L., and Peever, J.H. (2010). Dopaminergic regulation of sleep and cataplexy in a murine model of narcolepsy. Sleep *33*, 1295-1304.

S78. Fujiki, N., Cheng, T., Yoshino, F., and Nishino, S. (2009). Specificity of direct transition from wake to REM sleep in orexin/ataxin-3 transgenic narcoleptic mice. Exp. Neurol. *217*, 46-54.

S79. Hasan, S., Pradervand, S., Ahnaou, A., Drinkenburg, W., Tafti, M., and Franken, P. (2009). How to keep the brain awake? The complex molecular pharmacogenetics of wake promotion. Neuropsychopharmacology *34*, 1625-1640.

S80. Hunsley, M.S., and Palmiter, R.D. (2003). Norepinephrine-deficient mice exhibit normal sleep-wake states but have shorter sleep latency after mild stress and low doses of amphetamine. Sleep *26*, 521-526.

S81. Parmentier, R., Anaclet, C., Guhennec, C., Brousseau, E., Bricout, D., Giboulot, T., Bozyczko-Coyne, D., Spiegel, K., Ohtsu, H., Williams, M., and Lin, J.S. (2007). The brain H_3-receptor as a novel therapeutic target for vigilance and sleep–wake disorders. Biochem. Pharmacol. *73*, 1157-1171.

S82. Bourin, M., Chenu, F., Prica, C., and Hascoët, M. (2009). Augmentation effect of combination therapy of aripiprazole and antidepressants on forced swimming test in mice. Psychopharmacology (Berl.) *206*, 97-107.

S83. Kamei, J., Miyata, S., Sunohara, T., Kamei, A., Shimada, M., and Ohsawa, M. (2008). Potentiation of the antidepressant-like effect of fluoxetine by aripiprazole in the mouse tail suspension test. J. Pharmacol. Sci. *108*, 381-384.

S84. Kim, Y.R., Kim, H.N., Pak, M.E., Ahn, S.M., Hong, K.H., Shin, H.K., and Choi, B.T. (2015). Studies on the animal model of post-stroke depression and application of antipsychotic aripiprazole. Behav. Brain Res. *287*, 294-303.

S85. Sarkisyan, G., Roberts, A.J., and Hedlund, P.B. (2010). The 5-HT_7 receptor as a mediator and modulator of antidepressant-like behavior. Behav. Brain Res. *209*, 99-108.

S86. Wesolowska, A., Partyka, A., Jastrzebska-Wiesek, M., Kolarz, A., Mierzejewski, P., Bienkowski, P., and Kolaczkowski, M. (2011). Tail suspension test does not detect antidepressant-like properties of atypical antipsychotics. Behav Pharmacol *22*, 7-13.

S87. Zajdel, P., Marciniec, K., Maślankiewicz, A., Grychowska, K., Satała, G., Duszyńska, B., Lenda, T., Siwek, A., Nowak, G., Partyka, A., *et al.* (2013). Antidepressant and antipsychotic activity of new quinoline- and isoquinoline-sulfonamide analogs of aripiprazole targeting serotonin 5-HT_{1A}/5-HT_{2A}/5-HT_7 and dopamine D_2/D_3 receptors. Eur. J. Med. Chem. *60*, 42-50.

S88. Allen, J.A., Yost, J.M., Setola, V., Chen, X., Sassano, M.F., Chen, M., Peterson, S., Yadav, P.N., Huang, X.P., Feng, B., *et al.* (2011). Discovery of β-arrestin-biased dopamine D_2 ligands for probing signal transduction pathways essential for antipsychotic efficacy. Proc. Natl. Acad. Sci. U.S.A. *108*, 18488-18493.

S89. Almeida-Santos, A.F., Gobira, P.H., Souza, D.P., Ferreira, R.C.M., Romero, T.R., Duarte, I.D., Aguiar, D.C., and Moreira, F.A. (2014). The antipsychotic aripiprazole selectively prevents the stimulant and rewarding effects of morphine in mice. Eur. J. Pharmacol. *742*, 139-144.

S90. Batista, L.A., Viana, T.G., Silveira, V.T., Aguiar, D.C., and Moreira, F.A. (2016). Effects of aripiprazole on caffeine-induced hyperlocomotion and neural activation in the striatum. Naunyn Schmiedebergs Arch. Pharmacol. *389*, 11-16.

S91. Bespalov, A., Jongen-Relo, A.L., van Gaalen, M., Harich, S., Schoemaker, H., and Gross, G. (2007). Habituation deficits induced by metabotropic glutamate receptors 2/3 receptor blockade in mice: reversal by antipsychotic drugs. J. Pharmacol. Exp. Ther. *320*, 944-950.

S92. Boulay, D., Bergis, O., Avenet, P., and Griebel, G. (2009). The glycine transporter-1 inhibitor SSR103800 displays a selective and specific antipsychotic-like profile in normal and transgenic mice. Neuropsychopharmacology *35*, 416-427.

S93. Bradford, A.M., Savage, K.M., Jones, D.N., and Kalinichev, M. (2010). Validation and pharmacological characterisation of MK-801-induced locomotor hyperactivity in BALB/C mice as an assay for detection of novel antipsychotics. Psychopharmacology (Berl.) *212*, 155-170.

S94. Fejgin, K., Safonov, S., Pålsson, E., Wass, C., Engel, J.A., Svensson, L., and Klamer, D. (2007). The atypical antipsychotic, aripiprazole, blocks phencyclidine-induced disruption of prepulse inhibition in mice. Psychopharmacology (Berl.) *191*, 377-385.

S95. Flood, D.G., Gasior, M., and Marino, M.J. (2007). Variables affecting prepulse inhibition of the startle reflex and the response to antipsychotics in DBA/2NCrl mice. Psychopharmacology (Berl.) *195*, 203-211.

S96. Futamura, T., Akiyama, S., Sugino, H., Forbes, A., McQuade, R.D., and Kikuchi, T. (2010). Aripiprazole attenuates established behavioral sensitization induced by methamphetamine. Prog. Neuropsychopharmacol. Biol. Psychiatry *34*, 1115-1119.

S97. Gyertyán, I., Kiss, B., Sághy, K., Laszy, J., Szabó, G., Szabados, T., Gémesi, L.I., Pásztor, G., Zájer-Balázs, M., Kapás, M., *et al.* (2011). Cariprazine (RGH-188), a potent D_3/D_2 dopamine receptor partial agonist, binds to dopamine D_3 receptors in vivo and shows antipsychotic-like and procognitive effects in rodents. Neurochem. Int. *59*, 925-935.

S98. Ishii, D., Matsuzawa, D., Kanahara, N., Matsuda, S., Sutoh, C., Ohtsuka, H., Nakazawa, K., Kohno, M., Hashimoto, K., Iyo, M., and Shimizu, E. (2010). Effects of aripiprazole on MK-801-induced prepulse inhibition deficits and mitogen-activated protein kinase signal transduction pathway. Neuroscience Lett. *471*, 53-57.

S99. Jerlhag, E. (2008). The antipsychotic aripiprazole antagonizes the ethanol- and amphetamine-induced locomotor stimulation in mice. Alcohol *42*, 123-127.

S100. Kim, T.W., Kang, H.S., Park, J.K., Lee, S.J., Baek, S.B., and Kim, C.J. (2014). Voluntary wheel running ameliorates symptoms of MK-801-induced schizophrenia in mice. Mol. Med. Rep. *10*, 2924-2930.

S101. Leite, J.V., Guimarães, F.S., and Moreira, F.A. (2008). Aripiprazole, an atypical antipsychotic, prevents the motor hyperactivity induced by psychotomimetics and psychostimulants in mice. Eur. J. Pharmacol. *578*, 222-227.

S102. Marinho, E.A., Oliveira-Lima, A.J., Wuo-Silva, R., Santos, R., Baldaia, M.A., Hollais, A.W., Longo, B.M., Berro, L.F., and Frussa-Filho, R. (2014). Selective action of an atypical neuroleptic on the mechanisms related to the development of cocaine addiction: a pre-clinical behavioural study. Int. J. Neuropsychopharmacol. *17*, 613-623.

S103. Nagai, T., Murai, R., Matsui, K., Kamei, H., Noda, Y., Furukawa, H., and Nabeshima, T. (2009). Aripiprazole ameliorates phencyclidine-induced impairment of recognition memory through dopamine D_1 and serotonin 5-HT_{1A} receptors. Psychopharmacology (Berl.) *202*, 315-328.

S104. Narita, M., Takei, D., Shiokawa, M., Tsurukawa, Y., Matsushima, Y., Nakamura, A., Takagi, S., Asato, M., Ikegami, D., Narita, M., *et al.* (2008). Suppression of dopamine-related side effects of morphine by aripiprazole, a dopamine system stabilizer. Eur. J. Pharmacol. *600*, 105-109.

S105. Viana, T.G., Almeida-Santos, A.F., Aguiar, D.C., and Moreira, F.A. (2013). Effects of aripiprazole, an atypical antipsychotic, on the motor alterations induced by acute ethanol administration in mice. Basic Clin. Pharmacol. Toxicol. *112*, 319-324.

S106. Bardin, L., Kleven, M.S., Barret-Grevoz, C., Depoortere, R., and Newman-Tancredi, A. (2006). Antipsychotic-like vs cataleptogenic actions in mice of novel antipsychotics having D_2 antagonist and 5-HT_{1A} agonist properties. Neuropsychopharmacology *31*, 1869-1879.

S107. Dawe, G.S., Nagarajah, R., Albert, R., Casey, D.E., Gross, K.W., and Ratty, A.K. (2010). Antipsychotic drugs dose-dependently suppress the spontaneous hyperactivity of the chakragati mouse. Neuroscience *171*, 162-172.

S108. Oshiro, Y., Sato, S., Kurahashi, N., Tanaka, T., Kikuchi, T., Tottori, K., Uwahodo, Y., and Nishi, T. (1998). Novel antipsychotic agents with dopamine autoreceptor agonist properties: synthesis and pharmacology of 7-[4-(4-Phenyl-1-

piperazinyl)butoxy]-3,4-dihydro-2(1H)-quinolinone derivatives. J. Med. Chem. 41, 658-667.

S109. Balerio, G.N., and Rubio, M.C. (2002). Baclofen analgesia: involvement of the GABAergic system. Pharmacol. Res. *46*, 281-286.

S110. Capasso, A., Di Giannuario, A., Loizzo, A., Pieretti, S., and Sorrentino, L. (1995). Dexamethasone reduces the behavioural effects induced by baclofen in mice. J. Pharm. Pharmacol. *47*, 425-430.

S111. Carter, L.P., Wu, H., Chen, W., Matthews, M.M., Mehta, A.K., Hernandez, R.J., Thomson, J.A., Ticku, M.K., Coop, A., Koek, W., and France, C.P. (2005). Novel γ-hydroxybutyric Acid (GHB) analogs share some, but not all, of the behavioral effects of GHB and $GABA_B$ receptor agonists. J. Pharmacol. Exp. Ther. *313*, 1314-1323.

S112. Cryan, J.F., Kelly, P.H., Chaperon, F., Gentsch, C., Mombereau, C., Lingenhoehl, K., Froestl, W., Bettler, B., Kaupmann, K., and Spooren, W.P.J.M. (2004a). Behavioral characterization of the novel $GABA_B$ receptor-positive modulator GS39783 (*N*,*N*'-Dicyclopentyl-2-methylsulfanyl-5-nitro-pyrimidine-4,6-diamine): Anxiolytic-like activity without side effects associated with baclofen or benzodiazepines. J. Pharmacol. Exp. Ther. *310*, 952-963.

S113. Czuczwar, M., Kis, J., Potasinski, A., Turski, W.A., and Przesmycki, K. (2001). Isobolographic analysis of interaction between vigabatrin and baclofen in the formalin test in mice. Pol J Pharmacol *53*, 527-530.

S114. Dar, M.S. (1996). Mouse cerebellar $GABA_B$ participation in the expression of acute ethanol-induced ataxia and in its modulation by the cerebellar adenosinergic A_1 system. Brain Res. Bull. *41*, 53-59.

S115. Holstein, S.E., Dobbs, L., and Phillips, T.J. (2009). Attenuation of the stimulant response to ethanol is associated with enhanced ataxia for a $GABA_A$, but not a $GABA_B$, receptor agonist. Alcohol Clin. Exp. Res. *33*, 108-120.

S116. Jacobson, L.H., Bettler, B., Kaupmann, K., and Cryan, J.F. (2006). $GABA_{B(1)}$ receptor subunit isoforms exert a differential influence on baseline but not $GABA_B$ receptor agonist-induced changes in mice. J. Pharmacol. Exp. Ther. *319*, 1317-1326.

S117. Jacobson, L.H., and Cryan, J.F. (2005). Differential sensitivity to the motor and hypothermic effects of the $GABA_B$ receptor agonist baclofen in various mouse strains. Psychopharmacology (Berl.) *179*, 688-699.

S118. Jacobson, L.H., and Cryan, J.F. (2008). Evaluation of the anxiolytic-like profile of the $GABA_B$ receptor positive modulator CGP7930 in rodents. Neuropharmacology *54*, 854-862.

S119. Kehne, J.H., Kane, J.M., Miller, F.P., Ketteler, H.J., Braun, D.L., Senyah, Y., Chaney, S.F., Abdallah, A., Dudley, M.W., Ogden, A.M., and Palfreyman, M.G.

(1992). MDL 27,531 selectively reverses strychnine-induced seizures in mice. Br. J. Pharmacol. *106*, 910-916.

S120. Maity, B., Stewart, A., Yang, J., Loo, L., Sheff, D., Shepherd, A.J., Mohapatra, D.P., and Fisher, R.A. (2012). Regulator of G protein signaling 6 (RGS6) protein ensures coordination of motor movement by modulating $GABA_B$ receptor signaling. J. Biol. Chem. *287*, 4972-4981.

S121. Malcangio, M., Ghelardini, C., Giotti, A., Malmberg-Aiello, P., and Bartolini, A. (1991). CGP 35348, a new $GABA_B$ antagonist, prevents antinociception and muscle-relaxant effect induced by baclofen. Br. J. Pharmacol. *103*, 1303-1308.

S122. Millan, M.J., Seguin, L., Honore, P., Girardon, S., and Bervoets, K. (1996). Pro- and antinociceptive actions of serotonin $(5\text{-HT})_{1A}$ agonists and antagonists in rodents: relationship to algesiometric paradigm. Behav. Brain Res. *73*, 69-77.

S123. Nevins, M.E., Nash, S.A., and Beardsley, P.M. (1993). Quantitative grip strength assessment as a means of evaluating muscle relaxation in mice. Psychopharmacology (Berl.) *110*, 92-96.

S124. Pravetoni, M., and Wickman, K. (2008). Behavioral characterization of mice lacking GIRK/Kir3 channel subunits. Genes Brain Behav. *7*, 523-531.

S125. Zaleski, M.J., Nunes Filho, J.R., Lemos, T., and Morato, G.S. (2001). $GABA_B$ receptors play a role in the development of tolerance to ethanol in mice. Psychopharmacology (Berl.) *153*, 415-424.

S126. Zupan, B., and Toth, M. (2008). Inactivation of the maternal fragile X gene results in sensitization of $GABA_B$ receptor function in the offspring. J. Pharmacol. Exp. Ther. 327, 820-826.

S127. Biala, G., Kruk-Slomka, M., and Jozwiak, K. (2013). Influence of acute or chronic calcium channel antagonists on the acquisition and consolidation of memory and nicotine-induced cognitive effects in mice. Naunyn Schmiedebergs Arch. Pharmacol. *386*, 651-664.

S128. Clapcote, S.J., Lipina, T.V., Millar, J.K., Mackie, S., Christie, S., Ogawa, F., Lerch, J.P., Trimble, K., Uchiyama, M., Sakuraba, Y., *et al.* (2007). Behavioral phenotypes of *Disc1* missense mutations in mice. Neuron *54*, 387-402.

S129. Cryan, J.F., O'Leary, O.F., Jin, S.H., Friedland, J.C., Ouyang, M., Hirsch, B.R., Page, M.E., Dalvi, A., Thomas, S.A., and Lucki, I. (2004). Norepinephrine-deficient mice lack responses to antidepressant drugs, including selective serotonin reuptake inhibitors. Proc. Natl. Acad. Sci. U.S.A. *101*, 8186-8191.

S130. Cryan, J.F., Dalvi, A., Jin, S.-H., Hirsch, B.R., Lucki, I., and Thomas, S.A. (2001). Use of dopamine-β-hydroxylase-deficient mice to determine the role of

norepinephrine in the mechanism of action of antidepressant drugs. J. Pharmacol. Exp. Ther. *298*, 651-657.

S131. Cunha, M.P., Machado, D.G., Bettio, L.E.B., Capra, J.C., and Rodrigues, A.L.S. (2008). Interaction of zinc with antidepressants in the tail suspension test. Prog. Neuropsychopharmacol. Biol. Psychiatry *32*, 1913-1920.

S132. David, D.J.P., Renard, C.E., Jolliet, P., Hascoët, M., and Bourin, M. (2003). Antidepressant-like effects in various mice strains in the forced swimming test. Psychopharmacology (Berl.) *166*, 373-382.

S133. Devadoss, T., Pandey, D.K., Mahesh, R., and Yadav, S.K. (2010). Effect of acute and chronic treatment with QCF-3 (4-benzylpiperazin-1-yl) (quinoxalin-2-yl) methanone, a novel 5-HT_3 receptor antagonist, in animal models of depression. Pharmacol. Rep. *62*, 245-257.

S134. Dhir, A., and Kulkarni, S.K. (2007). Involvement of nitric oxide (NO) signaling pathway in the antidepressant action of bupropion, a dopamine reuptake inhibitor. Eur. J. Pharmacol. *568*, 177-185.

S135. Dhir, A., and Kulkarni, S.K. (2008). Possible involvement of sigma-1 receptors in the anti-immobility action of bupropion, a dopamine reuptake inhibitor. Fundam Clin Pharmacol *22*, 387-394.

S136. Fukui, M., Rodriguiz, R.M., Zhou, J., Jiang, S.X., Phillips, L.E., Caron, M.G., and Wetsel, W.C. (2007). *Vmat2* heterozygous mutant mice display a depressive-like phenotype. J. Neurosci. *27*, 10520-10529.

S137. Krass, M., Wegener, G., Vasar, E., and Volke, V. (2011). The antidepressant action of imipramine and venlafaxine involves suppression of nitric oxide synthesis. Behav. Brain Res. *218*, 57-63.

S138. Kulkarni, S.K., Bhutani, M.K., and Bishnoi, M. (2008). Antidepressant activity of curcumin: involvement of serotonin and dopamine system. Psychopharmacology (Berl.) *201*, 435-442.

S139. Kwon, S., Lee, B., Kim, M., Lee, H., Park, H.-J., and Hahm, D.-H. (2010). Antidepressant-like effect of the methanolic extract from *Bupleurum falcatum* in the tail suspension test. Prog. Neuropsychopharmacol. Biol. Psychiatry *34*, 265-270.

S140. Machado, D.G., Neis, V.B., Balen, G.O., Colla, A., Cunha, M.P., Dalmarco, J.B., Pizzolatti, M.G., Prediger, R.D., and Rodrigues, A.L.S. (2012). Antidepressant-like effect of ursolic acid isolated from *Rosmarinus officinalis* L. in mice: Evidence for the involvement of the dopaminergic system. Pharmacol. Biochem. Behav. *103*, 204-211.

S141. Maciel, I.S., Silva, R.B.M., Morrone, F.B., Calixto, J.B., and Campos, M.M. (2013). Synergistic effects of celecoxib and bupropion in a model of chronic inflammation-related depression in mice. PLoS One *8*, e77227.

S142. Martin, P., Massol, J., Colin, J.N., Lacomblez, L., and Puech, A.J. (1990). Antidepressant profile of bupropion and three metabolites in mice. Pharmacopsychiatry *23*, 187-194.

S143. Pandey, D.K., Rajkumar, R., Mahesh, R., and Radha, R. (2008). Depressant-like effects of parthenolide in a rodent behavioural antidepressant test battery. J. Pharm. Pharmacol. *60*, 1643-1650.

S144. Prica, C., Hascoet, M., and Bourin, M. (2008). Is co-administration of bupropion with SSRIs and SNRIs in forced swimming test in mice, predictive of efficacy in resistant depression? Behav. Brain Res. *194*, 92-99.

S145. Ripoll, N., David, D.J.P., Dailly, E., Hascoët, M., and Bourin, M. (2003). Antidepressant-like effects in various mice strains in the tail suspension test. Behav. Brain Res. *143*, 193-200.

S146. Renard, C.E., Dailly, E., Nic Dhonnchadha, B.Á., Hascoet, M., and Bourin, M. (2004). Is dopamine a limiting factor of the antidepressant-like effect in the mouse forced swimming test? Prog. Neuropsychopharmacol. Biol. Psychiatry *28*, 1255-1259.

S147. Yamada, J., Sugimoto, Y., and Yamada, S. (2004). Involvement of dopamine receptors in the anti-immobility effects of dopamine re-uptake inhibitors in the forced swimming test. Eur. J. Pharmacol. *504*, 207-211.

S148. Zocchi, A., Varnier, G., Arban, R., Griffante, C., Zanetti, L., Bettelini, L., Marchi, M., Gerrard, P.A., and Corsi, M. (2003). Effects of antidepressant drugs and GR 205171, an neurokinin-1 (NK_1) receptor antagonist, on the response in the forced swim test and on monoamine extracellular levels in the frontal cortex of the mouse. Neurosci. Lett. *345*, 73-76.

S149. Biala, G., and Kruk, M. (2009a). Effects of co-administration of bupropion and nicotine or D-amphetamine on the elevated plus maze test in mice. J. Pharm. Pharmacol. *61*, 493-502.

S150. Biala, G., and Kruk, M. (2009b). Influence of bupropion and calcium channel antagonists on the nicotine-induced memory-related response of mice in the elevated plus maze. Pharmacol Rep *61*, 236-244.

S151. Carrasco, M.C., Vicens, P., Vidal, J., and Redolat, R. (2006). Effects of co-administration of bupropion and nicotinic agonists on the elevated plus-maze test in mice. Prog. Neuropsychopharmacol. Biol. Psychiatry *30*, 455-462.

S152. Carroll, F.I., Blough, B.E., Mascarella, S.W., Navarro, H.A., Eaton, J.B., Lukas, R.J., and Damaj, M.I. (2010). Synthesis and biological evaluation of bupropion analogues as potential pharmacotherapies for smoking cessation. J. Med. Chem. *53*, 2204-2214.

S153. Damaj, M.I., Carroll, F.I., Eaton, J.B., Navarro, H.A., Blough, B.E., Mirza, S., Lukas, R.J., and Martin, B.R. (2004). Enantioselective effects of hydroxy metabolites of bupropion on behavior and on function of monoamine transporters and nicotinic receptors. Mol. Pharmacol. *66*, 675-682.

S154. Damaj, M.I., Grabus, S.D., Navarro, H.A., Vann, R.E., Warner, J.A., King, L.S., Wiley, J.L., Blough, B.E., Lukas, R.J., and Carroll, F.I. (2010). Effects of hydroxymetabolites of bupropion on nicotine dependence behavior in mice. J. Pharmacol. Exp. Ther. *334*, 1087-1095.

S155. Damaj, M.I., Slemmer, J.E., Carroll, F.I., and Martin, B.R. (1999). Pharmacological characterization of nicotine's interaction with cocaine and cocaine analogs. J. Pharmacol. Exp. Ther. *289*, 1229-1236.

S156. Fukushima, A., Chazono, K., Hashimoto, Y., Iwajima, Y., Yamamoto, S., Maeda, Y., Ohsawa, M., and Ono, H. (2015). Oseltamivir produces hypothermic and neuromuscular effects by inhibition of nicotinic acetylcholine receptor functions: Comparison to procaine and bupropion. Eur. J. Pharmacol. *762*, 275-282.

S157. Gómez, C., Carrasco, C., and Redolat, R. (2008). Effects of bupropion, alone or coadministered with nicotine, on social behavior in mice. Addict Biol *13*, 301-309.

S158. Grabus, S.D., Carroll, F.I., and Damaj, M.I. (2012). Bupropion and its main metabolite reverse nicotine chronic tolerance in the mouse. Nicotine Tob. Res. *14*, 1356-1361.

S159. Kruk-Słomka, M., Michalak, A., Budzyńska, B., and Biała, G. (2014). A comparison of mecamylamine and bupropion effects on memory-related responses induced by nicotine and scopolamine in the novel object recognition test in mice. Pharmacol. Rep. *66*, 638-646.

S160. Kruk, M., Tendera, K., and Biala, G. (2011). Memory-related effects of cholinergic receptor ligands in mice as measured by the elevated plus maze test. Pharmacol. Rep. *63*, 1372-1382.

S161. Portugal, G.S., and Gould, T.J. (2007). Bupropion dose-dependently reverses nicotine withdrawal deficits in contextual fear conditioning. Pharmacol. Biochem. Behav. *88*, 179-187.

S162. Rauhut, A.S., Hawrylak, M., and Mardekian, S.K. (2008). Bupropion differentially alters the aversive, locomotor and rewarding properties of nicotine in CD-1 mice. Pharmacol. Biochem. Behav. *90*, 598-607.

S163. Siegel, S.J., Maxwell, C.R., Majumdar, S., Trief, D.F., Lerman, C., Gur, R.E., Kanes, S.J., and Liang, Y. (2005). Monoamine reuptake inhibition and nicotine receptor antagonism reduce amplitude and gating of auditory evoked potentials. Neuroscience *133*, 729-738.

S164. Slemmer, J.E., Martin, B.R., and Damaj, M.I. (2000). Bupropion is a nicotinic antagonist. J. Pharmacol. Exp. Ther. *295*, 321-327.

S165. Belzung, C., Le Guisquet, A.M., Barreau, S., and Calatayud, F. (2001). An investigation of the mechanisms responsible for acute fluoxetine-induced anxiogenic-like effects in mice. Behav. Pharmacol. *12*, 151-162.

S166. Carvalho-Netto, E.F., and Nunes-de-Souza, R.L. (2004). Use of the elevated T-maze to study anxiety in mice. Behav. Brain Res. *148*, 119-132.

S167. Cole, J.C., and Rodgers, R.J. (1994). Ethological evaluation of the effects of acute and chronic buspirone treatment in the murine elevated plus-maze test: comparison with haloperidol. Psychopharmacology (Berl.) *114*, 288-296.

S168. Costall, B., Kelly, M.E., Naylor, R.J., and Onaivi, E.S. (1988). Actions of buspirone in a putative model of anxiety in the mouse. J. Pharm. Pharmacol. *40*, 494-500.

S169. Griebel, G., Perrault, G., and Sanger, D.J. (1998). Characterization of the behavioral profile of the non-peptide CRF receptor antagonist CP-154,526 in anxiety models in rodents. Comparison with diazepam and buspirone. Psychopharmacology (Berl.) *138*, 55-66.

S170. Grundmann, O., Nakajima, J.-I., Seo, S., and Butterweck, V. (2007). Anti-anxiety effects of *Apocynum venetum* L. in the elevated plus maze test. J. Ethnopharmacol. *110*, 406-411.

S171. Harada, K., Aota, M., Inoue, T., Matsuda, R., Mihara, T., Yamaji, T., Ishibashi, K., and Matsuoka, N. (2006). Anxiolytic activity of a novel potent serotonin 5-HT_{2C} receptor antagonist FR260010: A comparison with diazepam and buspirone. Eur. J. Pharmacol. *553*, 171-184.

S172. Komiya, M., Takeuchi, T., and Harada, E. (2006). Lemon oil vapor causes an anti-stress effect via modulating the 5-HT and DA activities in mice. Behav. Brain Res. *172*, 240-249.

S173. Magnani, P., Conforti, A., Zanolin, E., Marzotto, M., and Bellavite, P. (2010). Dose-effect study of *Gelsemium sempervirens* in high dilutions on anxiety-related responses in mice. Psychopharmacology (Berl.) *210*, 533-545.

S174. Merali, Z., Levac, C., and Anisman, H. (2003). Validation of a simple, ethologically relevant paradigm for assessing anxiety in mice. Biol. Psychiatry *54*, 552-565.

S175. Okuyama, S., Chaki, S., Yoshikawa, R., Ogawa, S.-i., Suzuki, Y., Okubo, T., Nakazato, A., Nagamine, M., and Tomisawa, K. (1999). Neuropharmacological profile of peripheral benzodiazepine receptor agonists, DAA1097 and DAA1106. Life Sci. *64*, 1455-1464.

S176. Peng, W.-H., Wu, C.-R., Chen, C.-S., Chen, C.-F., Leu, Z.-C., and Hsieh, M.-T. (2004). Anxiolytic effect of berberine on exploratory activity of the mouse in two experimental anxiety models: Interaction with drugs acting at 5-HT receptors. Life Sci. *75*, 2451-2462.

S177. Risbrough, V.B., Brodkin, J.D., and Geyer, M.A. (2003). GABA-A and 5-HT1A receptor agonists block expression of fear-potentiated startle in mice. Neuropsychopharmacology *28*, 654-663.

S178. Sánchez, C. (1995). Serotonergic mechanisms involved in the exploratory behaviour of mice in a fully automated two-compartment black and white test box. Pharmacol. Toxicol. *77*, 71-78.

S179. Simon, P., Dupuis, R., and Costentin, J. (1994). Thigmotaxis as an index of anxiety in mice. Influence of dopaminergic transmissions. Behav. Brain Res. *61*, 59-64.

S180. Sonavane, G.S., Sarveiya, V.P., Kasture, V.S., and Kasture, S.B. (2002). Anxiogenic activity of *Myristica fragrans* seeds. Pharmacol. Biochem. Behav. *71*, 239-244.

S181. Spooren, W.P.J.M., Schoeffter, P., Gasparini, F., Kuhn, R., and Gentsch, C. (2002). Pharmacological and endocrinological characterisation of stress-induced hyperthermia in singly housed mice using classical and candidate anxiolytics (LY314582, MPEP and NKP608). Eur. J. Pharmacol. *435*, 161-170.

S182. Stork, O., Welzl, H., Wotjak, C.T., Hoyer, D., Delling, M., Cremer, H., and Schachner, M. (1999). Anxiety and increased 5-HT_{1A} receptor response in NCAM null mutant mice. J. Neurobiol. *40*, 343-355.

S183. Tsuji, M., Takeda, H., and Matsumiya, T. (2000). Different effects of 5-HT_{1A} receptor agonists and benzodiazepine anxiolytics on the emotional state of naive and stressed mice: a study using the hole-board test. Psychopharmacology (Berl.) *152*, 157-166.

S184. Umezu, T. (2000). Behavioral effects of plant-derived essential oils in the geller type conflict test in mice. Jpn. J. Pharmacol. *83*, 150-153.

S185. Urigüen, L., Pérez-Rial, S., Ledent, C., Palomo, T., and Manzanares, J. (2004). Impaired action of anxiolytic drugs in mice deficient in cannabinoid CB_1 receptors. Neuropharmacology *46*, 966-973.

S186. Adachi, M., Barrot, M., Autry, A.E., Theobald, D., and Monteggia, L.M. (2008). Selective loss of brain-derived neurotrophic factor in the dentate gyrus attenuates antidepressant efficacy. Biol. Psychiatry *63,* 642-649.

S187. Andreasen, J.T., Olsen, G.M., Wiborg, O., and Redrobe, J.P. (2008). Antidepressant-like effects of nicotinic acetylcholine receptor antagonists, but not agonists, in the mouse forced swim and mouse tail suspension tests. J. Psychopharmacol. *23,* 797-804.

S188. Bourin, M., Colombel, M.C., Redrobe, J.P., Nizard, J., Hascoët, M., and Baker, G.B. (1998). Evaluation of efficacies of different classes of antidepressants in the forced swimming test in mice at different ages. Prog. Neuropsychopharmacol. Biol. Psychiatry *22,* 343-351.

S189. Cervo, L., Canetta, A., Calcagno, E., Burbassi, S., Sacchetti, G., Caccia, S., Fracasso, C., Albani, D., Forloni, G., and Invernizzi, R.W. (2005). Genotype-dependent activity of tryptophan hydroxylase-2 determines the response to citalopram in a mouse model of depression. J. Neurosci. *25,* 8165-8172.

S190. Crowley, J.J., Blendy, J.A., and Lucki, I. (2005). Strain-dependent antidepressant-like effects of citalopram in the mouse tail suspension test. Psychopharmacology (Berl.) *183,* 257-264.

S191. Crowley, J.J., Brodkin, E.S., Blendy, J.A., Berrettini, W.H., and Lucki, I. (2006). Pharmacogenomic evaluation of the antidepressant citalopram in the mouse tail suspension test. Neuropsychopharmacology *31,* 2433-2442.

S192. Da-Rocha, M.A., Puech, A.J., and Thiébot, M.-H. (1997). Influence of anxiolytic drugs on the effects of specific serotonin reuptake inhibitors in the forced swimming test in mice. J. Psychopharmacol. *11,* 211-218.

S193. Harkin, A., Connor, T.J., Burns, M.P., and Kelly, J.P. (2004). Nitric oxide synthase inhibitors augment the effects of serotonin re-uptake inhibitors in the forced swimming test. Eur Neuropsychopharmacol *14,* 274-281.

S194. Hedlund, P.B., Huitron-Resendiz, S., Henriksen, S.J., and Sutcliffe, J.G. (2005). 5-HT7 receptor inhibition and inactivation induce antidepressantlike behavior and sleep pattern. Biol. Psychiatry *58,* 831-837.

S195. Kobayashi, T., Hayashi, E., Shimamura, M., Kinoshita, M., and Murphy, N.P. (2008). Neurochemical responses to antidepressants in the prefrontal cortex of mice and their efficacy in preclinical models of anxiety-like and depression-like behavior: a comparative and correlational study. Psychopharmacology (Berl.) *197,* 567-580.

S196. Li, X., Witkin, J.M., Need, A.B., and Skolnick, P. (2003). Enhancement of antidepressant potency by a potentiator of AMPA receptors. Cell. Mol. Neurobiol. *23,* 419-430.

S197. O'Leary, O.F., Bechtholt, A.J., Crowley, J.J., Hill, T.E., Page, M.E., and Lucki, I. (2007). Depletion of serotonin and catecholamines block the acute behavioral response to different classes of antidepressant drugs in the mouse tail suspension test. Psychopharmacology (Berl.) *192*, 357-371.

S198. Popik, P., Kozela, E., and Krawczyk, M. (2003). Nicotine and nicotinic receptor antagonists potentiate the antidepressant-like effects of imipramine and citalopram. Br. J. Pharmacol. *139*, 1196-1202.

S199. Renard, C.E., Fiocco, A.J., Clenet, F., Hascoet, M., and Bourin, M. (2001). Is dopamine implicated in the antidepressant-like effects of selective serotonin reuptake inhibitors in the mouse forced swimming test? Psychopharmacology (Berl.) *159*, 42-50.

S200. Sanchez, C., and Meier, E. (1997). Behavioral profiles of SSRIs in animal models of depression, anxiety and aggression. Are they all alike? Psychopharmacology (Berl.) *129*, 197-205.

S201. Steru, L., Chermat, R., Thierry, B., Mico, J.A., Lenegre, A., Steru, M., Simon, P., and Porsolt, R.D. (1987). The automated Tail Suspension Test: a computerized device which differentiates psychotropic drugs. Progr. Neuropsychopharmacol. Biol. Psychiatry *11*, 659-671.

S202. Strekalova, T., Gorenkova, N., Schunk, E., Dolgov, O., and Bartsch, D. (2006). Selective effects of citalopram in a mouse model of stress-induced anhedonia with a control for chronic stress. Behav. Pharmacol. *17*, 271-287.

S203. Szewczyk, B., Branski, P., Wieronska, J.M., Palucha, A., Pilc, A., and Nowak, G. (2002). Interaction of zinc with antidepressants in the forced swimming test in mice. Pol. J. Pharmacol. *54*, 681-685.

S204. Szewczyk, B., Poleszak, E., Wlaź, P., Wróbel, A., Blicharska, E., Cichy, A., Dybała, M., Siwek, A., Pomierny-Chamioło, L., Piotrowska, A., *et al.* (2009). The involvement of serotonergic system in the antidepressant effect of zinc in the forced swim test. Prog. Neuropsychopharmacol. Biol. Psychiatry *33*, 323-329.

S205. Thakker, D.R., Natt, F., Husken, D., van der Putten, H., Maier, R., Hoyer, D., and Cryan, J.F. (2005). siRNA-mediated knockdown of the serotonin transporter in the adult mouse brain. Mol. Psychiatry *10*, 782-789.

S206. Warner-Schmidt, J.L., Vanover, K.E., Chen, E.Y., Marshall, J.J., and Greengard, P. (2011). Antidepressant effects of selective serotonin reuptake inhibitors (SSRIs) are attenuated by antiinflammatory drugs in mice and humans. Proc. Natl. Acad. Sci. U.S.A. *108*, 9262-9267.

S207. Wesołowska, A., Tatarczyńska, E., Nikiforuk, A., and Chojnacka-Wójcik, E. (2007). Enhancement of the anti-immobility action of antidepressants by a selective

5-HT_7 receptor antagonist in the forced swimming test in mice. Eur. J. Pharmacol. *555*, 43-47.

S208. Broekkamp, C.L., Rijk, H.W., Joly-Gelouin, D., and Lloyd, K.L. (1986). Major tranquillizers can be distinguished from minor tranquillizers on the basis of effects on marble burying and swim-induced grooming in mice. Eur. J. Pharmacol. *126*, 223-229.

S209. Griebel, G., Sanger, D.J., and Perrault, G. (1996). The mouse defense test battery: evaluation of the effects of non-selective and BZ-1 (ω1) selective, benzodiazepine receptor ligands. Behav. Pharmacol. *7*, 560-572.

S210. Han, S., Tai, C., Westenbroek, R.E., Yu, F.H., Cheah, C.S., Potter, G.B., Rubenstein, J.L., Scheuer, T., de la Iglesia, H.O., and Catterall, W.A. (2012). Autistic-like behaviour in *Scn1a*$^{+/-}$ mice and rescue by enhanced GABA-mediated neurotransmission. Nature *489*, 385-390.

S211. Ramirez, K., Niraula, A., and Sheridan, J.F. (2016). GABAergic modulation with classical benzodiazepines prevent stress-induced neuro-immune dysregulation and behavioral alterations. Brain Behav. Immun. *51*, 154-168.

S212. Sulcova, A., and Krsiak, M. (1989). Differences among nine 1,4-benzodiazepines: an ethopharmacological evaluation in mice. Psychopharmacology (Berl.) *97*, 157-159.

S213. Cardoso Vilela, F., Soncini, R., and Giusti-Paiva, A. (2009). Anxiolytic-like effect of *Sonchus oleraceus* L. in mice. J. Ethnopharmacol. *124*, 325-327.

S214. Weizman, R., Paz, L., Peter, Y., Toren, P., and Pick, C.G. (2001). Behavioral effects of agents active at the γ-aminobutyric acid receptor complex in the staircase paradigm. Brain Res. *901*, 137-142.

S215. Beekman, M., Ungard, J.T., Gasior, M., Carter, R.B., Dijkstra, D., Goldberg, S.R., and Witkin, J.M. (1998). Reversal of behavioral effects of pentylenetetrazol by the neuroactive steroid ganaxolone. J. Pharmacol. Exp. Ther. *284*, 868-877.

S216. Borowicz, K.K., Luszczki, J., and Czuczwar, S.J. (2002). 2-Chloroadenosine, a preferential agonist of adenosine A_1 receptors, enhances the anticonvulsant activity of carbamazepine and clonazepam in mice. Eur. Neuropsychopharmacol. *12*, 173-179.

S217. Borowicz, K.K., Luszczki, J., Szadkowski, M., Kleinrok, Z., and Czuczwar, S.J. (1999). Influence of LY 300164, an antagonist of AMPA/kainate receptors, on the anticonvulsant activity of clonazepam. Eur. J. Pharmacol. *380*, 67-72.

S218. Borowicz, K.K., Łuszczki, J., Kleinrok, Z., and Czuczwar, S.J. (2000). 7-Nitroindazole, a nitric oxide synthase inhibitor, enhances the anticonvulsive action of ethosuximide and clonazepam against pentylenetetrazol-induced convulsions. J Neural Transm (Vienna) *107*, 1117-1126.

S219. De Sarro, G., Ascioti, C., di Paola, E.D., Vidal, M.J., and De Sarro, A. (1992). Effects of antiepileptic drugs, calcium channel blockers and other compounds on seizures induced by activation of voltage-dependent L calcium channel in DBA/2 mice. Gen. Pharmacol. *23*, 1205-1216.

S220. Dhir, A., and Rogawski, M.A. (2012). Role of neurosteroids in the anticonvulsant activity of midazolam. Br. J. Pharmacol. *165*, 2684-2691.

S221. Gasior, M., Kamiński, R., Brudniak, T., Kleinrok, Z., and Czuczwar, S.J. (1996). Influence of nicardipine, nimodipine and flunarizine on the anticonvulsant efficacy of antiepileptics against pentylenetetrazol in mice. J Neural Transm (Vienna) *103*, 819-831.

S222. Holland, K.D., McKeon, A.C., Canney, D.J., Covey, D.F., and Ferrendelli, J.A. (1992). Relative anticonvulsant effects of GABAmimetic and GABA modulatory Agents. Epilepsia *33*, 981-986.

S223. Kaminski, R.M., Livingood, M.R., and Rogawski, M.A. (2004). Allopregnanolone analogs that positively modulate $GABA_A$ receptors protect against partial seizures induced by 6-Hz electrical stimulation in mice. Epilepsia *45*, 864-867.

S224. Kecskeméti, V., Rusznák, Z., Riba, P., Pál, B., Wagner, R., Harasztosi, C., Nánási, P.P., and Szûcs, G. (2005). Norfluoxetine and fluoxetine have similar anticonvulsant and Ca^{2+} channel blocking potencies. Brain Res. Bull. *67*, 126-132.

S225. Kokate, T.G., Juhng, K.N., Kirkby, R.D., Llamas, J., Yamaguchi, S.-i., and Rogawski, M.A. (1999). Convulsant actions of the neurosteroid pregnenolone sulfate in mice. Brain Res. *831*, 119-124.

S226. Kokate, T.G., Svensson, B.E., and Rogawski, M.A. (1994). Anticonvulsant activity of neurosteroids: correlation with gamma-aminobutyric acid-evoked chloride current potentiation. Journal of Pharmacology and Experimental Therapeutics *270*, 1223.

S227. Löscher, W., Rundfeldt, C., Hönack, D., and Ebert, U. (1996). Long-term studies on anticonvulsant tolerance and withdrawal characteristics of benzodiazepine receptor ligands in different seizure models in mice. I. Comparison of diazepam, clonazepam, clobazam and abecarnil. J. Pharmacol. Exp. Ther. 279, 561-572.

S228. Luszczki, J.J., and Czuczwar, S.J. (2003). Isobolographic and subthreshold methods in the detection of interactions between oxcarbazepine and conventional antiepileptics—a comparative study. Epilepsy Res. *56*, 27-42.

S229. Luszczki, Jarogniew J., Borowicz, Kinga K., Swiader, M., and Czuczwar, Stanislaw J. (2003). Interactions between oxcarbazepine and conventional antiepileptic drugs in the maximal electroshock test in mice: An isobolographic analysis. Epilepsia *44*, 489-499.

S230. Luszczki, J.J., Wojcik-Cwikla, J., Andres, M.M., and Czuczwar, S.J. (2004). Pharmacological and behavioral characteristics of interactions between vigabatrin and conventional antiepileptic drugs in pentylenetetrazole-induced seizures in mice: An isobolographic analysis. Neuropsychopharmacology *30*, 958-973.

S231. Reddy, D.S., and Rogawski, M.A. (2010). Ganaxolone suppression of behavioral and electrographic seizures in the mouse amygdala kindling model. Epilepsy Res. *89*, 254-260.

S232. Rigo, J.M., Hans, G., Nguyen, L., Rocher, V., Belachew, S., Malgrange, B., Leprince, P., Moonen, G., Selak, I., Matagne, A., and Klitgaard, H. (2002). The anti-epileptic drug levetiracetam reverses the inhibition by negative allosteric modulators of neuronal GABA- and glycine-gated currents. Br. J. Pharmacol. *136*, 659-672.

S233. Swinyard, E.A., White, H.S., Wolf, H.H., and Bondinell, W.E. (1991). Anticonvulsant profiles of the potent and orally active GABA uptake inhibitors SK&F 89976-A and SK&F 100330-A and four prototype antiepileptic drugs in mice and rats. Epilepsia *32*, 569-577.

S234. Turski, L., Niemann, W., and Stephens, D.N. (1990). Differential effects of antiepileptic drugs and β-carbolines on seizures induced by excitatory amino acids. Neuroscience *39*, 799-807.

S235. Tutka, P., Łuszczki, J., Kleinrok, Z., Arent, K., and Wielosz, M. (2002). Molsidomine enhances the protective activity of valproate against pentylenetetrazole-induced seizures in mice. J Neural Transm (Vienna) *109*, 455-466.

S236. Tutka, P., Mróz, T., Klucha, K., Piekarczyk, M., and Wielosz, M. (2005). Bupropion-induced convulsions: Preclinical evaluation of antiepileptic drugs. Epilepsy Res. *64*, 13-22.

S237. Witkin, J.M., Gasior, M., Heifets, B., and Tortella, F.C. (1999). Anticonvulsant efficacy of *N*-methyl-D-aspartate antagonists against convulsions induced by cocaine. J. Pharmacol. Exp. Ther. *289*, 703-711.

S238. Zapater, P., Javaloy, J., Román, J.F., Vidal, M.a.T., and Horga, J.F. (1998). Anticonvulsant effects of nimodipine and two novel dihydropyridines (PCA 50922 and PCA 50941) against seizures elicited by pentylenetetrazole and electroconvulsive shock in mice. Brain Res. *796*, 311-314.

S239. Bruno, K.J., and Hess, E.J. (2006). The α_{2C}-adrenergic receptor mediates hyperactivity of coloboma mice, a model of attention deficit hyperactivity disorder. Neurobiol. Dis. *23*, 679-688.

S240. Calvino-Núñez, C., and Domínguez-del-Toro, E. (2014). Clonidine treatment delays postnatal motor development and blocks short-term memory in young mice. PLoS One *9*, e114869.

S241. Cutler, M.G. (1993). Comparison of the effects of yohimbine and clonidine on the behaviour of female mice during social encounters in an "approach-avoidance" situation. Neuropharmacology *32*, 411-417.

S242. Galeotti, N., Bartolini, A., and Ghelardini, C. (2004). Alpha-2 agonist-induced memory impairment is mediated by the alpha-2A-adrenoceptor subtype. Behav. Brain Res. *153*, 409-417.

S243. Ghelardini, C., Galeotti, N., Giuliani, F., Barlocco, D., and Bartolini, A. (1998b). Antiamnesic activity of the nicotinic agonist DBO-83 in mice. Drug Dev. Res. *45*, 45-51.

S244. Ghelardini, C., Galeotti, N., Gualtieri, F., Manetti, D., Bucherelli, C., Baldi, E., and Bartolini, A. (2002). The novel nootropic compound DM232 (UNIFIRAM) ameliorates memory impairment in mice and rats. Drug Dev. Res. *56*, 23-32.

S245. Ghelardini, C., Galeotti, N., Gualtieri, F., Romanelli, M., Bucherelli, C., Baldi, E., and Bartolini, A. (2002). DM235 (sunifiram): a novel nootropic with potential as a cognitive enhancer. Naunyn Schmiedebergs Arch. Pharmacol. *365*, 419-426.

S246. Harkin, A., Morris, K., Kelly, J.P., O'Donnell, J.M., and Leonard, B.E. (2001). Modulation of MK-801-induced behaviour by noradrenergic agents in mice. Psychopharmacology (Berl). *154*, 177-188.

S247. Hasebe, S., Ago, Y., Nishiyama, S., Oka, S., Hashimoto, H., Takuma, K., and Matsuda, T. (2015). Pharmacological profile of encounter-induced hyperactivity in isolation-reared mice. Behav Pharmacol *26*, 681-690.

S248. Nasehi, M., Zamanparvar, M., Ebrahimi-Ghiri, M., and Zarrindast, M.-R. (2016). Modulation of cannabinoid signaling by amygdala α2-adrenergic system in fear conditioning. Behav. Brain Res. *300*, 114-122.

S249. Subarnas, A., Tadano, T., Kisara, K., and Ohizumi, Y. (1993). An α-adrenoceptor-mediated mechanism of hypoactivity induced by β-amyrin palmitate. J. Pharm. Pharmacol. *45*, 1006-1008.

S250. Wrenn, C.C., Heitzer, A.M., Roth, A.K., Nawrocki, L., and Valdovinos, M.G. (2015). Effects of clonidine and methylphenidate on motor activity in *Fmr1* knockout mice. Neurosci. Lett. *585*, 109-113.

S251. Cole, J.C., and Rodgers, R.J. (1995). Ethological comparison of the effects of diazepam and acute/chronic imipramine on the behaviour of mice in the elevated plus-maze. Pharmacol. Biochem. Behav. *52*, 473-478.

S252. Crawley, J.N., and Davis, L.G. (1982). Baseline exploratory activity predicts anxiolytic responsiveness to diazepam in five mouse strains. Brain Res. Bull. *8*, 609-612.

S253. Crestani, F., Keist, R., Fritschy, J.M., Benke, D., Vogt, K., Prut, L., Bluthmann, H., Mohler, H., and Rudolph, U. (2002). Trace fear conditioning involves hippocampal alpha$_5$ GABA$_A$ receptors. Proc. Natl. Acad. Sci. U.S.A. *99*, 8980-8985.

S254. Dalvi, A., and Rodgers, R.J. (1996). GABAergic influences on plus-maze behaviour in mice. Psychopharmacology (Berl.) *128*, 380-397.

S255. Dias, R., Sheppard, W.F.A., Fradley, R.L., Garrett, E.M., Stanley, J.L., Tye, S.J., Goodacre, S., Lincoln, R.J., Cook, S.M., Conley, R., *et al.* (2005). Evidence for a Significant Role of α3-Containing GABA$_A$ Receptors in Mediating the Anxiolytic Effects of Benzodiazepines. J. Neurosci. *25*, 10682-10688.

S256. Fernandez, S.P., Mewett, K.N., Hanrahan, J.R., Chebib, M., and Johnston, G.A.R. (2008). Flavan-3-ol derivatives are positive modulators of GABA$_A$ receptors with higher efficacy for the α_2 subtype and anxiolytic action in mice. Neuropharmacology *55*, 900-907.

S257. Griebel, G., Belzung, C., Perrault, G., and Sanger, D.J. (2000). Differences in anxiety-related behaviours and in sensitivity to diazepam in inbred and outbred strains of mice. Psychopharmacology (Berl.) *148*, 164-170.

S258. Griebel, G., Perrault, G., Letang, V., Granger, P., Avenet, P., Schoemaker, H., and Sanger, D.J. (1999). New evidence that the pharmacological effects of benzodiazepine receptor ligands can be associated with activities at different BZ (ω) receptor subtypes. Psychopharmacology (Berl.) 146, 205-213.

S259. Griebel, G., Perrault, G., Simiand, J., Cohen, C., Granger, P., Decobert, M., Françon, D., Avenet, P., Depoortere, H., Tan, S., *et al.* (2001). SL651498: An anxioselective compound with functional selectivity for α_2- and α_3-containing γ-aminobutyric acid$_A$ (GABA$_A$) receptors. J. Pharmacol. Exp. Ther. 298, 753-768.

S260. Griebel, G., Simiand, J., Serradeil-Le Gal, C., Wagnon, J., Pascal, M., Scatton, B., Maffrand, J.P., and Soubrie, P. (2002). Anxiolytic- and antidepressant-like effects of the non-peptide vasopressin V$_{1b}$ receptor antagonist, SSR149415, suggest an innovative approach for the treatment of stress-related disorders. Proc. Natl. Acad. Sci. U.S.A. *99*, 6370-6375.

S261. Han, H., Ma, Y., Eun, J.S., Li, R., Hong, J.-T., Lee, M.-K., and Oh, K.-W. (2009). Anxiolytic-like effects of sanjoinine A isolated from *Zizyphi Spinosi Semen*: Possible involvement of GABAergic transmission. Pharmacol. Biochem. Behav. *92*, 206-213.

S262. Hosseinzadeh, H., and Noraei, N.B. (2009). Anxiolytic and hypnotic effect of *Crocus sativus* aqueous extract and its constituents, crocin and safranal, in mice. Phytotherapy Res. *23*, 768-774.

S263. Hui, K.M., Huen, M.S.Y., Wang, H.Y., Zheng, H., Sigel, E., Baur, R., Ren, H., Li, Z.W., Wong, J.T.-F., and Xue, H. (2002). Anxiolytic effect of wogonin, a

benzodiazepine receptor ligand isolated from *Scutellaria baicalensis* Georgi. Biochem. Pharmacol. *64*, 1415-1424.

S264. Kash, S.F., Tecott, L.H., Hodge, C., and Baekkeskov, S. (1999). Increased anxiety and altered responses to anxiolytics in mice deficient in the 65-kDa isoform of glutamic acid decarboxylase. Proc. Natl. Acad. Sci. U.S.A. *96*, 1698-1703.

S265. Kralic, J.E., O'Buckley, T.K., Khisti, R.T., Hodge, C.W., Homanics, G.E., and Morrow, A.L. (2002). $GABA_A$ receptor alpha-1 subunit deletion alters receptor subtype assembly, pharmacological and behavioral responses to benzodiazepines and zolpidem. Neuropharmacology *43*, 685-694.

S266. Löw, K., Crestani, F., Keist, R., Benke, D., Brünig, I., Benson, J.A., Fritschy, J.-M., Rülicke, T., Bluethmann, H., Möhler, H., and Rudolph, U. (2000). Molecular and neuronal substrate for the selective attenuation of anxiety. Science *290*, 131-134.

S267. McKernan, R.M., Rosahl, T.W., Reynolds, D.S., Sur, C., Wafford, K.A., Atack, J.R., Farrar, S., Myers, J., Cook, G., Ferris, P., *et al.* (2000). Sedative but not anxiolytic properties of benzodiazepines are mediated by the $GABA_A$ receptor α_1-subtype. Nat. Neurosci. *3*, 587-592.

S268. Ren, L., Wang, F., Xu, Z., Chan, W.M., Zhao, C., and Xue, H. (2010). $GABA_A$ receptor subtype selectivity underlying anxiolytic effect of 6-hydroxyflavone. Biochem. Pharmacol. *79*, 1337-1344.

S269. Rizzi, A., Vergura, R., Marzola, G., Ruzza, C., Guerrini, R., Salvadori, S., Regoli, D., and Calo, G. (2008). Neuropeptide S is a stimulatory anxiolytic agent: a behavioural study in mice. Br. J. Pharmacol. *154*, 471-479.

S270. Rodgers, R.J., and Johnson, N.J.T. (1998). Behaviorally selective effects of neuroactive steroids on plus-maze anxiety in mice. Pharmacol. Biochem. Behav. *59*, 221-232.

S271. Rodgers, R.J., Lee, C., and Shepherd, J.K. (1992). Effects of diazepam on behavioural and antinociceptive responses to the elevated plus-maze in male mice depend upon treatment regimen and prior maze experience. Psychopharmacology (Berl.) *106*, 102-110.

S272. Rodgers, R.J., and Shepherd, J.K. (1993). Influence of prior maze experience on behaviour and response to diazepam in the elevated plus-maze and light/dark tests of anxiety in mice. Psychopharmacology (Berl.) *113*, 237-242.

S273. Rudolph, U., Crestani, F., Benke, D., Brunig, I., Benson, J.A., Fritschy, J.-M., Martin, J.R., Bluethmann, H., and Mohler, H. (1999). Benzodiazepine actions mediated by specific γ-aminobutyric $acid_A$ receptor subtypes. Nature *401*, 796-800.

S274. Takeda, H., Tsuji, M., and Matsumiya, T. (1998). Changes in head-dipping behavior in the hole-board test reflect the anxiogenic and/or anxiolytic state in mice. Eur. J. Pharmacol. *350*, 21-29.

S275. Tsuda, M., Suzuki, T., Misawa, M., and Nagase, H. (1996). Involvement of the opioid system in the anxiolytic effect of diazepam in mice. Eur. J. Pharmacol. *307*, 7-14.

S276. Van Der Heyden, J.A.M., Zethof, T.J.J., and Olivier, B. (1997). Stress-induced hyperthermia in singly housed mice. Physiol. Behav. *62*, 463-470.

S277. Varty, G.B., Hyde, L.A., Hodgson, R.A., Lu, S.X., McCool, M.F., Kazdoba, T.M., Del Vecchio, R.A., Guthrie, D.H., Pond, A.J., Grzelak, M.E., *et al.* (2005). Characterization of the nociceptin receptor (ORL-1) agonist, Ro64-6198, in tests of anxiety across multiple species. Psychopharmacology (Berl.) *182*, 132-143.

S278. Wesołowska, A., Nikiforuk, A., Stachowicz, K., and Tatarczyńska, E. (2006). Effect of the selective 5-HT_7 receptor antagonist SB 269970 in animal models of anxiety and depression. Neuropharmacology *51*, 578-586.

S279. Wolfman, C., Viola, H., Paladini, A., Dajas, F., and Medina, J.H. (1994). Possible anxiolytic effects of chrysin, a central benzodiazepine receptor ligand isolated from *Passiflora Coerulea*. Pharmacol. Biochem. Behav. *47*, 1-4.

S280. Young, R., and Johnson, D.N. (1991). A fully automated light/dark apparatus useful for comparing anxiolytic agents. Pharmacol. Biochem. Behav. *40*, 739-743.

S281. Bac, P., Maurois, P., Dupont, C., Pages, N., Stables, J.P., Gressens, P., Evrard, P., and Vamecq, J. (1998). Magnesium deficiency-dependent audiogenic seizures (MDDASs) in adult mice: A nutritional model for discriminatory screening of anticonvulsant drugs and original assessment of neuroprotection properties. J. Neurosci. 18, 4363-4373.

S282. Członkowska, A.I., Krząścik, P., Sienkiewicz-Jarosz, H., Siemiątkowski, M., Szyndler, J., Bidziński, A., and Płaźnik, A. (2000). The effects of neurosteroids on picrotoxin-, bicuculline- and NMDA-induced seizures, and a hypnotic effect of ethanol. Pharmacol. Biochem. Behav. *67*, 345-353.

S283. Dawson, G.R., Wafford, K.A., Smith, A., Marshall, G.R., Bayley, P.J., Schaeffer, J.M., Meinke, P.T., and McKernan, R.M. (2000). Anticonvulsant and adverse effects of avermectin analogs in mice are mediated through the γ-aminobutyric acid receptor. J. Pharmacol. Exp. Ther. 295, 1051-1060.

S284. De Sarro, G., Di Paola, E.D., Conte, G., Pasculli, M.P., and De Sarro, A. (2001). Influence of retigabine on the anticonvulsant activity of some antiepileptic drugs against audiogenic seizures in DBA/2 mice. Naunyn Schmiedebergs Arch. Pharmacol. *363*, 330-336.

S285. De Sarro, G., Gareri, P., Falconi, U., and De Sarro, A. (2000). 7-Nitroindazole potentiates the antiseizure activity of some anticonvulsants in DBA/2 mice. Eur. J. Pharmacol. *394*, 275-288.

S286. De Sarro, G., Gratteri, S., Bonacci, F., Musumeci, S.A., Elia, M., and De Sarro, A. (2000). Topiramate potentiates the antiseizure activity of some anticonvulsants in DBA/2 mice. Eur. J. Pharmacol. *388*, 163-170.

S287. De Sarro, G., Nava, F., Aguglia, U., and De Sarro, A. (1996). Lamotrigine potentiates the antiseizure activity of some anticonvulsants in DBA/2 mice. Neuropharmacology *35*, 153-158.

S288. De Sarro, G., Spagnolo, C., Gareri, P., Gallelli, L., and De Sarro, A. (1998). Gabapentin potentiates the antiseizure activity of certain anticonvulsants in DBA/2 mice. Eur. J. Pharmacol. *349*, 179-185.

S289. Dhir, A., Naidu, P.S., and Kulkarni, S.K. (2006). Effect of cyclooxygenase inhibitors on pentylenetetrazol (PTZ)-induced convulsions: Possible mechanism of action. Prog. Neuropsychopharmacol. Biol. Psychiatry *30*, 1478-1485.

S290. Donato Di Paola, E., Gareri, P., Davoli, A., Gratteri, S., Scicchitano, F., Naccari, C., and De Sarro, G. (2007). Influence of levetiracetam on the anticonvulsant efficacy of conventional antiepileptic drugs against audiogenic seizures in DBA/2 mice. Epilepsy Res. *75*, 112-121.

S291. Facklam, M., Schoch, P., Bonetti, E.P., Jenck, F., Martin, J.R., Moreau, J.L., and Haefely, W.E. (1992). Relationship between benzodiazepine receptor occupancy and functional effects in vivo of four ligands of differing intrinsic efficacies. J. Pharmacol. Exp. Ther. *261*, 1113-1121.

S292. Gasior, M., Carter, R.B., Goldberg, S.R., and Witkin, J.M. (1997). Anticonvulsant and behavioral effects of neuroactive steroids alone and in conjunction with diazepam. J. Pharmacol. Exp. Ther. 282, 543-553.

S293. Gasior, M., Ungard, J.T., Beekman, M., Carter, R.B., and Witkin, J.M. (2000). Acute and chronic effects of the synthetic neuroactive steroid, ganaxolone, against the convulsive and lethal effects of pentylenetetrazol in seizure-kindled mice: comparison with diazepam and valproate. Neuropharmacology *39*, 1184-1196.

S294. Gordon, R., Gels, M., Diamantis, W., and Sofia, R.D. (1991). Interaction of felbamate and diazepam against maximal electroshock seizures and chemoconvulsants in mice. Pharmacol. Biochem. Behav. *40*, 109-113.

S295. Klodzinska, A., Bijak, M., Chojnacka-Wojcik, E., Kroczka, B., Swiader, M., Czuczwar, S.J., and Pilc, A. (2000). Roles of group II metabotropic glutamate receptors in modulation of seizure activity. Naunyn Schmiedebergs Arch. Pharmacol. *361*, 283-288.

S296. Löscher, W., Fassbender, C.P., and Nolting, B. (1991). The role of technical, biological and pharmacological factors in the laboratory evaluation of anticonvulsant drugs. II. Maximal electroshock seizure models. Epilepsy Res. 8, 79-94.

S297. Löscher, W., and Hönack, D. (1994). Effects of the non-NMDA antagonists NBQX and the 2,3-benzodiazepine GYKI 52466 on different seizure types in mice: comparison with diazepam and interactions with flumazenil. Br. J. Pharmacol. *113*, 1349-1357.

S298. Loscher, W., Honack, D., Fassbender, C.P., and Nolting, B. (1991). The role of technical, biological and pharmacological factors in the laboratory evaluation of anticonvulsant drugs. III. Pentylenetetrazole seizure models. Epilepsy Res. *8*, 171-189.

S299. Mandhane, S.N., Aavula, K., and Rajamannar, T. (2007). Timed pentylenetetrazol infusion test: A comparative analysis with s.c.PTZ and MES models of anticonvulsant screening in mice. Seizure *16*, 636-644.

S300. Martin, J.R., Schoch, P., Jenck, F., Moreau, J.L., and Haefely, W.E. (1993). Pharmacological characterization of benzodiazepine receptor ligands with intrinsic efficacies ranging from high to zero. Psychopharmacology (Berl.) *111*, 415-422.

S301. Riban, V., Bouilleret, V., Pham-Lê, B.T., Fritschy, J.M., Marescaux, C., and Depaulis, A. (2002). Evolution of hippocampal epileptic activity during the development of hippocampal sclerosis in a mouse model of temporal lobe epilepsy. Neuroscience *112*, 101-111.

S302. Wamil, A.W., Schmutz, M., Portet, C., Feldmann, K.F., and McLean, M.J. (1994). Effects of oxcarbazepine and 10-hydroxycarbamazepine on action potential firing and generalized seizures. Eur. J. Pharmacol. *271*, 301-308.

S303. Yamaguchi, S., and Rogawski, M.A. (1992). Effects of anticonvulsant drugs on 4-aminopyridine-induced seizures in mice. Epilepsy Res. *11*, 9-16.

S304. Crestani, F., Löw, K., Keist, R., Mandelli, M.-J., Möhler, H., and Rudolph, U. (2001). Molecular targets for the myorelaxant action of diazepam. Mol. Pharmacol. *59*, 442-445.

S305. Ginski, M.J., and Witkin, J.M. (1994). Sensitive and rapid behavioral differentiation of N-methyl-D-aspartate receptor antagonists. Psychopharmacology (Berl.) *114*, 573-582.

S306. Korpi, E.R., Koikkalainen, P., Vekovischeva, O.Y., Mäkelä, R., Kleinz, R., Uusi-Oukari, M., and Wisden, W. (1999). Cerebellar granule-cell-specific $GABA_A$ receptors attenuate benzodiazepine-induced ataxia: evidence from α6-subunit-deficient mice. Eur. J. Neurosci. *11*, 233-240.

S307. Stanley, J.L., Lincoln, R.J., Brown, T.A., McDonald, L.M., Dawson, G.R., and Reynolds, D.S. (2005). The mouse beam walking assay offers improved sensitivity over the mouse rotarod in determining motor coordination deficits induced by benzodiazepines. J. Psychopharmacol. (Oxford) *19*, 221-227.

S308. Vanover, K.E., Suruki, M., Robledo, S., Huber, M., Wieland, S., Lan, N.C., Gee, K.W., Wood, P.L., and Carter, R.B. (1999). Positive allosteric modulators of the GABAA receptor: differential interaction of benzodiazepines and neuroactive steroids with ethanol. Psychopharmacology (Berl.) *141*, 77-82.

S309. White, S.M., Kucharik, R.F., and Moyer, J.A. (1991). Effects of serotonergic agents on isolation-induced aggression. Pharmacol. Biochem. Behav. *39*, 729-736.

S310. Bontempi, B., Whelan, K.T., Risbrough, V.B., Lloyd, G.K., and Menzaghi, F. (2003). Cognitive enhancing properties and tolerability of cholinergic agents in mice: a comparative study of nicotine, donepezil, and SIB-1553A, a subtype-selective ligand for nicotinic acetylcholine receptors. Neuropsychopharmacology *28*, 1235-1246.

S311. Cachard-Chastel, M., Devers, S., Sicsic, S., Langlois, M., Lezoualc'h, F., Gardier, A.M., and Belzung, C. (2008). Prucalopride and donepezil act synergistically to reverse scopolamine-induced memory deficit in C57Bl/6j mice. Behav. Brain Res. *187*, 455-461.

S312. de Bruin, N.M.W.J., Prickaerts, J., Lange, J.H.M., Akkerman, S., Andriambeloson, E., de Haan, M., Wijnen, J., van Drimmelen, M., Hissink, E., Heijink, L., and Kruse, C.G. (2010). SLV330, a cannabinoid CB_1 receptor antagonist, ameliorates deficits in the T-maze, object recognition and Social Recognition Tasks in rodents. Neurobiol. Learn. Mem. *93*, 522-531.

S313. Dong, H., Csernansky, C.A., Martin, M.V., Bertchume, A., Vallera, D., and Csernansky, J.G. (2005). Acetylcholinesterase inhibitors ameliorate behavioral deficits in the Tg2576 mouse model of Alzheimer's disease. Psychopharmacology (Berl.) *181*, 145-152.

S314. Furukawa-Hibi, Y., Alkam, T., Nitta, A., Matsuyama, A., Mizoguchi, H., Suzuki, K., Moussaoui, S., Yu, Q.-S., Greig, N.H., Nagai, T., and Yamada, K. (2011). Butyrylcholinesterase inhibitors ameliorate cognitive dysfunction induced by amyloid-β peptide in mice. Behav. Brain Res. *225*, 222-229.

S315. Jeon, S., Bose, S., Hur, J., Jun, K., Kim, Y.-K., Cho, K.S., and Koo, B.-S. (2011). A modified formulation of Chinese traditional medicine improves memory impairment and reduces Aβ level in the Tg-APPswe/PS1dE9 mouse model of Alzheimer's disease. J Ethnopharmacol *137*, 783-789.

S316. Jeong, E.J., Lee, K.Y., Kim, S.H., Sung, S.H., and Kim, Y.C. (2008). Cognitive-enhancing and antioxidant activities of iridoid glycosides from *Scrophularia buergeriana* in scopolamine-treated mice. Eur. J. Pharmacol. *588*, 78-84.

S317. Jung, I.-H., Jang, S.-E., Joh, E.-H., Chung, J., Han, M.J., and Kim, D.-H. (2012). Lancemaside A isolated from *Codonopsis lanceolata* and its metabolite echinocystic acid ameliorate scopolamine-induced memory and learning deficits in mice. Phytomedicine *20*, 84-88.

S318. Kim, E.-J., Jung, I.-H., Van Le, T.K., Jeong, J.-J., Kim, N.-J., and Kim, D.-H. (2013). Ginsenosides Rg5 and Rh3 protect scopolamine-induced memory deficits in mice. J Ethnopharmacol *146*, 294-299.

S319. Marighetto, A., Valerio, S., Desmedt, A., Philippin, J.N., Trocmé-Thibierge, C., and Morain, P. (2008). Comparative effects of the α7 nicotinic partial agonist, S 24795, and the cholinesterase inhibitor, donepezil, against aging-related deficits in declarative and working memory in mice. Psychopharmacology (Berl.) *197*, 499-508.

S320. Meunier, J., Ieni, J., and Maurice, T. (2006). The anti-amnesic and neuroprotective effects of donepezil against amyloid β_{25-35} peptide-induced toxicity in mice involve an interaction with the σ_1 receptor. Br. J. Pharmacol. *149*, 998-1012.

S321. Nagakura, A., Shitaka, Y., Yarimizu, J., and Matsuoka, N. (2013). Characterization of cognitive deficits in a transgenic mouse model of Alzheimer's disease and effects of donepezil and memantine. Eur. J. Pharmacol. *703*, 53-61.

S322. Prior, M., Dargusch, R., Ehren, J.L., Chiruta, C., and Schubert, D. (2013). The neurotrophic compound J147 reverses cognitive impairment in aged Alzheimer's disease mice. Alzheimers Res Ther *5*, 25.

S323. Romberg, C., Mattson, M.P., Mughal, M.R., Bussey, T.J., and Saksida, L.M. (2011). Impaired attention in the 3xTgAD mouse model of Alzheimer's disease: Rescue by donepezil (Aricept). J. Neurosci. *31*, 3500-3507.

S324. Saxena, G., Singh, S.P., Agrawal, R., and Nath, C. (2008). Effect of donepezil and tacrine on oxidative stress in intracerebral streptozotocin-induced model of dementia in mice. Eur. J. Pharmacol. *581*, 283-289.

S325. Sharma, B., Singh, N., and Singh, M. (2008). Modulation of celecoxib- and streptozotocin-induced experimental dementia of Alzheimer's disease by pitavastatin and donepezil. J. Psychopharmacol. (Oxford) *22*, 162-171.

S326. Singh, B., Sharma, B., Jaggi, A.S., and Singh, N. (2013). Attenuating effect of lisinopril and telmisartan in intracerebroventricular streptozotocin induced experimental dementia of Alzheimer's disease type: possible involvement of PPAR-γ agonistic property. J Renin Angiotensin Aldosterone Syst *14*, 124-136.

S327. Spowart-Manning, L., and van der Staay, F.J. (2004). The T-maze continuous alternation task for assessing the effects of putative cognition enhancers in the mouse. Behav. Brain Res. *151*, 37-46.

S328. Tohda, C., Tamura, T., and Komatsu, K. (2003). Repair of amyloid β(25–35)-induced memory impairment and synaptic loss by a Kampo formula, Zokumei-to. Brain Res. *990*, 141-147.

S329. Van Dam, D., Abramowski, D., Staufenbiel, M., and De Deyn, P.P. (2005). Symptomatic effect of donepezil, rivastigmine, galantamine and memantine on cognitive deficits in the APP23 model. Psychopharmacology (Berl.) *180*, 177-190.

S330. Yamada, M., Hayashida, M., Zhao, Q., Shibahara, N., Tanaka, K., Miyata, T., and Matsumoto, K. (2011). Ameliorative effects of yokukansan on learning and memory deficits in olfactory bulbectomized mice. J Ethnopharmacol *135*, 737-746.

S331. Zhang, R., Xue, G., Wang, S., Zhang, L., Shi, C., and Xie, X. (2012). Novel object recognition as a facile behavior test for evaluating drug effects in AβPP/PS1 Alzheimer's disease mouse model. J. Alzheimers Dis. *31*, 801-812.

S332. An, L., Li, J., Yu, S.-T., Xue, R., Yu, N.-J., Chen, H.-X., Zhang, L.-M., Zhao, N., Li, Y.-F., and Zhang, Y.-Z. (2015). Effects of the total flavonoid extract of Xiaobuxin-Tang on depression-like behavior induced by lipopolysaccharide and proinflammatory cytokine levels in mice. J. Ethnopharmacol. *163*, 83-87.

S333. Andreasen, J.T., Nielsen, E.Ø., and Redrobe, J.P. (2009). Chronic oral nicotine increases brain [^{3}H]epibatidine binding and responsiveness to antidepressant drugs, but not nicotine, in the mouse forced swim test. Psychopharmacology (Berl.) *205*, 517-528.

S334. Auclair, A.L., Martel, J.C., Assié, M.B., Bardin, L., Heusler, P., Cussac, D., Marien, M., Newman-Tancredi, A., O'Connor, J.A., and Depoortère, R. (2013). Levomilnacipran (F2695), a norepinephrine-preferring SNRI: Profile in vitro and in models of depression and anxiety. Neuropharmacology *70*, 338-347.

S335. Berrocoso, E., Ikeda, K., Sora, I., Uhl, G.R., Sanchez-Blazquez, P., and Mico, J.A. (2013). Active behaviours produced by antidepressants and opioids in the mouse tail suspension test. Int. J. Neuropsychopharmacol. *16*, 151-162.

S336. Berrocoso, E., and Mico, J.A. (2009). Cooperative opioid and serotonergic mechanisms generate superior antidepressant-like effects in a mice model of depression. Int. J. Neuropsychopharmacol. *12*, 1033-1044.

S337. Castagné, V., Porsolt, R.D., and Moser, P. (2009). Use of latency to immobility improves detection of antidepressant-like activity in the behavioral despair test in the mouse. Eur. J. Pharmacol. *616*, 128-133.

S338. Engel, D., Zomkowski, A.D., Lieberknecht, V., Rodrigues, A.L., and Gabilan, N.H. (2013). Chronic administration of duloxetine and mirtazapine downregulates proapoptotic proteins and upregulates neurotrophin gene expression in the hippocampus and cerebral cortex of mice. J. Psychiatr. Res. *47*, 802-808.

S339. Jin, Z.-l., Gao, N., Zhang, J.-r., Li, X.-r., Chen, H.-x., Xiong, J., Li, Y.-f., and Tang, Y. (2014). The discovery of Yuanzhi-1, a triterpenoid saponin derived from the traditional Chinese medicine, has antidepressant-like activity. Prog. Neuropsychopharmacol. Biol. Psychiatry *53*, 9-14.

S340. Kale, P.P., and Addepalli, V. (2014). Augmentation of antidepressant effects of duloxetine and bupropion by caffeine in mice. Pharmacol. Biochem. Behav. *124*, 238-244.

S341. Katoh, A., Eigyo, M., Ishibashi, C., Naitoh, Y., Takeuchi, M., Ibii, N., Ikeda, M., and Matsushita, A. (1995). Behavioral and electroencephalographic properties of duloxetine (LY248686), a reuptake inhibitor of norepinephrine and serotonin, in mice and rats. J. Pharmacol. Exp. Ther. *272*, 1067-1075.

S342. Kiso, T., Watabiki, T., Tsukamoto, M., Okabe, M., Kagami, M., Nishimura, K., Aoki, T., and Matsuoka, N. (2008). Pharmacological characterization and gene expression profiling of an L5/L6 spinal nerve ligation model for neuropathic pain in mice. Neuroscience *153*, 492-500.

S343. Sakata, K., Mastin, J.R., Duke, S.M., Vail, M.G., Overacre, A.E., Dong, B.E., and Jha, S. (2013). Effects of antidepressant treatment on mice lacking brain-derived neurotrophic factor expression through promoter IV. Eur. J. Neurosci. *37*, 1863-1874.

S344. Vijaya Kumar, K., Rudra, A., Sreedhara, M.V., Siva Subramani, T., Prasad, D.S., Das, M.L., Murugesan, S., Yadav, R., Trivedi, R.K., Louis, J.V., *et al.* (2014). *Bacillus Calmette–Guérin* vaccine induces a selective serotonin reuptake inhibitor (SSRI)-resistant depression like phenotype in mice. Brain Behav. Immun. *42*, 204-211.

S345. Xue, R., Jin, Z.-L., Chen, H.-X., Yuan, L., He, X.-H., Zhang, Y.-P., Meng, Y.-G., Xu, J.-P., Zheng, J.-Q., Zhong, B.-H., *et al.* (2013). Antidepressant-like effects of 071031B, a novel serotonin and norepinephrine reuptake inhibitor. Eur. Neuropsychopharmacol. *23*, 728-741.

S346. Xue, R., Zhang, Y.-P., Jin, Z.-L., Yuan, L., He, X.-H., Zhao, N., Chen, H.-X., Zhang, L.-M., Fan, S.-Y., Zhong, B.-H., *et al.* (2013). The discovery of 071031B, a novel serotonin and noradrenaline reuptake inhibitor. Neurosci. Lett. *544*, 68-73.

S347. Zomkowski, A.D.E., Engel, D., Cunha, M.P., Gabilan, N.H., and Rodrigues, A.L.S. (2012). The role of the NMDA receptors and L-arginine–nitric oxide–cyclic guanosine monophosphate pathway in the antidepressant-like effect of duloxetine in the forced swimming test. Pharmacol. Biochem. Behav. *103*, 408-417.

S348. Marlatt, M.W., Lucassen, P.J., and van Praag, H. (2010). Comparison of neurogenic effects of fluoxetine, duloxetine and running in mice. Brain Res. *1341*, 93-99.

S349. Mirza, N.R., Nielsen, E.Ø., and Troelsen, K.B. (2007). Serotonin transporter density and anxiolytic-like effects of antidepressants in mice. Prog. Neuropsychopharmacol. Biol. Psychiatry *31*, 858-866.

S350. Troelsen, K.B., Nielsen, E.Ø., and Mirza, N.R. (2005). Chronic treatment with duloxetine is necessary for an anxiolytic-like response in the mouse zero maze: the role of the serotonin transporter. Psychopharmacology (Berl.) *181*, 741-750.

S351. Ito, S., Tajima, K., Nogawa, M., Inoue, N., Kyoi, T., Takahashi, Y., Sasagawa, T., Nakamura, A., Kotera, T., Ueda, M., *et al.* (2012). Etodolac, a cyclooxygenase-2 inchibitor, attenuates paclitaxel-Induced peripheral neuropathy in a mouse model of mechanical allodynia. J. Pharmacol. Exp. Ther. *342*, 53-60.

S352. Jones, C.K., Peters, S.C., and Shannon, H.E. (2005). Efficacy of duloxetine, a potent and balanced serotonergic and noradrenergic reuptake inhibitor, in inflammatory and acute pain models in rodents. J. Pharmacol. Exp. Ther. *312*, 726.

S353. Jones, C.K., Peters, S.C., and Shannon, H.E. (2007). Synergistic interactions between the dual serotonergic, noradrenergic reuptake inhibitor duloxetine and the non-steroidal anti-inflammatory drug ibuprofen in inflammatory pain in rodents. Eur. J. Pain *11*, 208-215.

S354. Katsuyama, S., Aso, H., Otowa, A., Yagi, T., Kishikawa, Y., Komatsu, T., Sakurada, T., and Nakamura, H. (2014). Antinociceptive Effects of the Serotonin and Noradrenaline Reuptake Inhibitors Milnacipran and Duloxetine on Vincristine-Induced Neuropathic Pain Model in Mice. ISRN Pain *2014*, 915464.

S355. Mitsi, V., Terzi, D., Purushothaman, I., Manouras, L., Gaspari, S., Neve, R.L., Stratinaki, M., Feng, J., Shen, L., and Zachariou, V. (2015). RGS9-2-controlled adaptations in the striatum determine the onset of action and efficacy of antidepressants in neuropathic pain states. Proc. Natl. Acad. Sci. U.S.A. 112, E5088-5097.

S356. Murai, N., Tsukamoto, M., Tamura, S., Aoki, T., and Matsuoka, N. (2014). Antinociceptive effects of AS1069562, the (+)-isomer of indeloxazine, on spinal hypersensitivity induced by intrathecal injection of prostaglandin in mice: Comparison with duloxetine and amitriptyline. Eur. J. Pharmacol. *733*, 54-61.

S357. Sun, Y.-H., Dong, Y.-L., Wang, Y.-T., Zhao, G.-L., Lu, G.-J., Yang, J., Wu, S.-X., Gu, Z.-X., and Wang, W. (2013). Synergistic analgesia of duloxetine and celecoxib in the mouse formalin test: A combination analysis. PLoS One *8*, e76603.

S358. Tsukamoto, M., Kiso, T., Shimoshige, Y., Aoki, T., and Matsuoka, N. (2010). Spinal mechanism of standard analgesics: Evaluation using mouse models of allodynia. Eur. J. Pharmacol. *634*, 40-45.

S359. Wantuch, C., Piesla, M., and Leventhal, L. (2007). Pharmacological validation of a model of cystitis pain in the mouse. Neurosci. Lett. *421*, 250-252.

S360. Zhao, Z.-Q., Chiechio, S., Sun, Y.-G., Zhang, K.-H., Zhao, C.-S., Scott, M., Johnson, R.L., Deneris, E.S., Renner, K.J., Gereau, R.W., and Chen, Z.-F. (2007b). Mice lacking central serotonergic neurons show enhanced inflammatory pain and an impaired analgesic response to antidepressant drugs. J. Neurosci. *27*, 6045-6053.

S361. Andreasen, J.T., Gynther, M., Rygaard, A., Bøgelund, T., Nielsen, S.D., Clausen, R.P., Mogensen, J., and Pickering, D.S. (2013). Does increasing the ratio of AMPA-to-NMDA receptor mediated neurotransmission engender antidepressant action? Studies in the mouse forced swim and tail suspension tests. Neurosci. Lett. *546*, 6-10.

S362. Binder, E., Malki, K., Paya-Cano, J.L., Fernandes, C., Aitchison, K.J., Mathe, A.A., Sluyter, F., and Schalkwyk, L.C. (2011). Antidepressants and the resilience to early-life stress in inbred mouse strains. Pharmacogenet. Genomics *21*, 779-789.

S363. Dong, C., Zhang, J.-c., Yao, W., Ren, Q., Yang, C., Ma, M., Han, M., Saito, R., and Hashimoto, K. (2016). Effects of escitalopram, R-citalopram, and reboxetine on serum levels of tumor necrosis factor-α, interleukin-10, and depression-like behavior in mice after lipopolysaccharide administration. Pharmacol. Biochem. Behav. *144*, 7-12.

S364. Gupta, D., Kurhe, Y., and Radhakrishnan, M. (2014). Antidepressant effects of insulin in streptozotocin induced diabetic mice: Modulation of brain serotonin system. Physiol. Behav. *129*, 73-78.

S365. Mitchell, N.C., Gould, G.G., Smolik, C.M., Koek, W., and Daws, L.C. (2013). Antidepressant-like drug effects in juvenile and adolescent mice in the tail suspension test: Relationship with hippocampal serotonin and norepinephrine transporter expression and function. Front. Pharmacol. *4*, 131.

S366. Mlyniec, K., and Nowak, G. (2012). Zinc deficiency induces behavioral alterations in the tail suspension test in mice. Effect of antidepressants. Pharmacol. Rep. *64*, 249-255.

S367. Młyniec, K., Gaweł, M., and Nowak, G. (2015). Study of antidepressant drugs in GPR39 (zinc receptor$^{-/-}$) knockout mice, showing no effect of conventional antidepressants, but effectiveness of NMDA antagonists. Behav. Brain Res. *287*, 135-138.

S368. O'Brien, F.E., O'Connor, R.M., Clarke, G., Dinan, T.G., Griffin, B.T., and Cryan, J.F. (2013). P-glycoprotein inhibition increases the brain distribution and antidepressant-like activity of escitalopram in rodents. Neuropsychopharmacology *38*, 2209-2219.

S369. O'Brien, F.E., O'Connor, R.M., Clarke, G., Donovan, M.D., Dinan, T.G., Griffin, B.T., and Cryan, J.F. (2014). The P-glycoprotein inhibitor cyclosporin A differentially influences behavioural and neurochemical responses to the antidepressant escitalopram. Behav. Brain Res. *261*, 17-25.

S370. Procaccini, C., Aitta-aho, T., Jaako-Movits, K., Zharkovsky, A., Panhelainen, A., Sprengel, R., Linden, A.-M., and Korpi, E.R. (2011). Excessive novelty-induced c-Fos expression and altered neurogenesis in the hippocampus of GluA1 knockout mice. Eur. J. Neurosci. *33*, 161-174.

S371. Pytka, K., Partyka, A., Jastrzębska-Więsek, M., Siwek, A., Głuch-Lutwin, M., Mordyl, B., Kazek, G., Rapacz, A., Olczyk, A., Gałuszka, A., *et al.* (2015). Antidepressant- and Anxiolytic-Like Effects of New Dual 5-HT_{1A} and 5-HT_7 Antagonists in Animal Models. PLoS One 10, e0142499.

S372. Quesseveur, G., Repérant, C., David, D.J., Gardier, A.M., Sanchez, C., and Guiard, B.P. (2013). 5-HT_{2A} receptor inactivation potentiates the acute antidepressant-like activity of escitalopram: involvement of the noradrenergic system. Exp Brain Res *226*, 285-295.

S373. Reimets, R., Raud, S., Loomets, M., Visnapuu, T., Volke, V., Reimets, A., Plaas, M., and Vasar, E. (2016). Variability in the effect of antidepressants upon Wfs1-deficient mice is dependent on the drugs' mechanism of actions. Behav. Brain Res. *308*, 53-63.

S374. Sánchez, C., Bergqvist, P.B.F., Brennum, L.T., Gupta, S., Hogg, S., Larsen, A., and Wiborg, O. (2003). Escitalopram, the *S*-(+)-enantiomer of citalopram, is a selective serotonin reuptake inhibitor with potent effects in animal models predictive of antidepressant and anxiolytic activities. Psychopharmacology (Berl.) *167*, 353-362.

S375. Savignac, H.M., Kiely, B., Dinan, T.G., and Cryan, J.F. (2014). Bifidobacteria exert strain-specific effects on stress-related behavior and physiology in BALB/c mice. Neurogastroenterol. Motil. *26*, 1615-1627.

S376. Wolak, M., Siwek, A., Szewczyk, B., Poleszak, E., Pilc, A., Popik, P., and Nowak, G. (2013). Involvement of NMDA and AMPA receptors in the antidepressant-like activity of antidepressant drugs in the forced swim test. Pharmacol. Rep. *65*, 991-997.

S377. Zhou, D., Jin, H., Lin, H.-B., Yang, X.-M., Cheng, Y.-F., Deng, F.-J., and Xu, J.-P. (2010). Antidepressant effect of the extracts from Fructus Akebiae. Pharmacol. Biochem. Behav. *94*, 488-495.

S378. Zomkowski, A.D.E., Engel, D., Gabilan, N.H., and Rodrigues, A.L.S. (2010). Involvement of NMDA receptors and L-arginine-nitric oxide-cyclic guanosine monophosphate pathway in the antidepressant-like effects of escitalopram in the forced swimming test. Eur. Neuropsychopharmacol. *20*, 793-801.

S379. Anwar, M.J., Pillai, K.K., Samad, A., and Vohora, D. (2013). Effect of escitalopram on cardiomyopathy-induced anxiety in mice. Hum. Exp. Toxicol. *32*, 632-639.

S380. Berger, S.M., Weber, T., Perreau-Lenz, S., Vogt, M.A., Gartside, S.E., Maser-Gluth, C., Lanfumey, L., Gass, P., Spanagel, R., and Bartsch, D. (2012). A functional *Tph2* C1473G polymorphism causes an anxiety phenotype via compensatory changes in the serotonergic system. Neuropsychopharmacology *37*, 1986-1998.

S381. Doron, R., Lotan, D., Einat, N., Yaffe, R., Winer, A., Marom, I., Meron, G., Kately, N., and Rehavi, M. (2014). A novel herbal treatment reduces depressive-like behaviors and increases BDNF levels in the brain of stressed mice. Life Sci. *94*, 151-157.

S382. Doron, R., Lotan, D., Rak-Rabl, A., Raskin-Ramot, A., Lavi, K., and Rehavi, M. (2012). Anxiolytic effects of a novel herbal treatment in mice models of anxiety. Life Sci. *90*, 995-1000.

S383. Doron, R., Lotan, D., Versano, Z., Benatav, L., Franko, M., Armoza, S., Kately, N., and Rehavi, M. (2014). Escitalopram or novel herbal mixture treatments during or following exposure to stress reduce anxiety-like behavior through corticosterone and BDNF modifications. PLoS One *9*, e91455.

S384. Fish, E.W., Faccidomo, S., Gupta, S., and Miczek, K.A. (2004). Anxiolytic-like effects of escitalopram, citalopram, and *R*-citalopram in maternally separated mouse pups. J. Pharmacol. Exp. Ther. 308, 474-480.

S385. Fuertig, R., Azzinnari, D., Bergamini, G., Cathomas, F., Sigrist, H., Seifritz, E., Vavassori, S., Luippold, A., Hengerer, B., Ceci, A., and Pryce, C.R. (2016). Mouse chronic social stress increases blood and brain kynurenine pathway activity and fear behaviour: Both effects are reversed by inhibition of indoleamine 2,3-dioxygenase. Brain Behav. Immun. *54*, 59-72.

S386. Kayir, H., Alici, T., Göktalay, G., Yildirim, M., Ulusoy, G.K., Ceyhan, M., Celik, T., and Uzbay, T.I. (2008). Stimulus properties of venlafaxine in a conditioned taste aversion procedure. Eur. J. Pharmacol. *596*, 102-106.

S387. Baker, A.K., Hoffmann, V.L.H., and Meert, T.F. (2002). Dextromethorphan and ketamine potentiate the antinociceptive effects of μ- but not δ- or κ-opioid agonists in a mouse model of acute pain. Pharmacol. Biochem. Behav. *74*, 73-86.

S388. Bilsky, E.J., Inturrisi, C.E., Sadee, W., Hruby, V.J., and Porreca, F. (1996). Competitive and non-competitive NMDA antagonists block the development of antinociceptive tolerance to morphine, but not to selective mu or delta opioid agonists in mice. Pain *68*, 229-237.

S389. Celerier, E., Gonzalez, J.R., Maldonado, R., Cabanero, D., and Puig, M.M. (2006). Opioid-induced hyperalgesia in a murine model of postoperative pain: role of nitric oxide generated from the inducible nitric oxide synthase. Anesthesiology *104*, 546-555.

S390. Comer, S.D., Burke, T.F., Lewis, J.W., and Woods, J.H. (1992). Clocinnamox: a novel, systemically-active, irreversible opioid antagonist. J. Pharmacol. Exp. Ther. *262*, 1051-1056.

S391. Duttaroy, A., and Yoburn, B.C. (1995). The effect of intrinsic efficacy on opioid tolerance. Anesthesiology *82*, 1226-1236.

S392. Garner, H.R., Burke, T.F., Lawhorn, C.D., Stoner, J.M., and Wessinger, W.D. (1997). Butorphanol-Mediated Antinociception in Mice: Partial Agonist Effects and *Mu* Receptor Involvement. J. Pharmacol. Exp. Ther. *282*, 1253-1261.

S393. Hamabe, W., Maeda, T., Fukazawa, Y., Kumamoto, K., Shang, L.Q., Yamamoto, A., Yamamoto, C., Tokuyama, S., and Kishioka, S. (2006). P-glycoprotein ATPase activating effect of opioid analgesics and their P-glycoprotein-dependent antinociception in mice. Pharmacol. Biochem. Behav. *85*, 629-636.

S394. Han, M.H., Renthal, W., Ring, R.H., Rahman, Z., Psifogeorgou, K., Howland, D., Birnbaum, S., Young, K., Neve, R., Nestler, E.J., and Zachariou, V. (2010). Brain region specific actions of regulator of G protein signaling 4 oppose morphine reward and dependence but promote analgesia. Biol. Psychiatry *67*, 761-769.

S395. Hull, L.C., Llorente, J., Gabra, B.H., Smith, F.L., Kelly, E., Bailey, C., Henderson, G., and Dewey, W.L. (2010). The effect of protein kinase C and G protein-coupled receptor kinase inhibition on tolerance induced by μ-opioid agonists of different efficacy. J. Pharmacol. Exp. Ther. *332*, 1127-1135.

S396. Kögel, B., Christoph, T., Straβburger, W., and Friderichs, E. (2005). Interaction of μ-opioid receptor agonists and antagonists with the analgesic effect of buprenorphine in mice. Eur. J. Pain *9*, 599-599.

S397. Lichtman, A.H. (1998). The up-and-down method substantially reduces the number of animals required to determine antinociceptive ED_{50} values. J Pharmacol Toxicol Methods *40*, 81-85.

S398. Martucci, C., Panerai, A.E., and Sacerdote, P. (2004). Chronic fentanyl or buprenorphine infusion in the mouse: similar analgesic profile but different effects on immune responses. Pain *110*, 385-392.

S399. Minami, K., Hasegawa, M., Ito, H., Nakamura, A., Tomii, T., Matsumoto, M., Orita, S., Matsushima, S., Miyoshi, T., Masuno, K., *et al.* (2009). Morphine, oxycodone, and fentanyl exhibit different analgesic profiles in mouse pain models. J. Pharmacol. Sci. 111, 60-72.

S400. O'Neill, S.J., Collins, M.A., Pettit, H.O., McNutt, R.W., and Chang, K.-J. (1997). Antagonistic modulation between the *Delta* opioid agonist BW373U86 and the *Mu* opioid agonist fentanyl in mice. J. Pharmacol. Exp. Ther. *282*, 271-277.

S401. Pietrovski, E.F., Rosa, K.A., Facundo, V.A., Rios, K., Marques, M.C.A., and Santos, A.R.S. (2006). Antinociceptive properties of the ethanolic extract and of the triterpene 3β,6β,16β-trihidroxilup-20(29)-ene obtained from the flowers of *Combretum leprosum* in mice. Pharmacol. Biochem. Behav. *83*, 90-99.

S402. Popik, P., Kozela, E., and Pilc, A. (2000). Selective agonist of group II glutamate metabotropic receptors, LY354740, inhibits tolerance to analgesic effects of morphine in mice. Br. J. Pharmacol. *130*, 1425-1431.

S403. Raehal, K.M., and Bohn, L.M. (2011). The role of beta-arrestin2 in the severity of antinociceptive tolerance and physical dependence induced by different opioid pain therapeutics. Neuropharmacology *60*, 58-65.

S404. Raffa, R.B., and Martinez, R.P. (1995). The 'glibenclamide-shift' of centrally-acting antinociceptive agents in mice. Brain Res. *677*, 277-282.

S405. Roerig, S.C., Hoffman, R.G., Takemori, A.E., Wilcox, G.L., and Fujimoto, J.M. (1991). Isobolographic analysis of analgesic interactions between intrathecally and intracerebroventricularly administered fentanyl, morphine and D-Ala2-D-Leu5-enkephalin in morphine-tolerant and nontolerant mice. J. Pharmacol. Exp. Ther. *257*, 1091-1099.

S406. Rossi, G.C., Brown, G.P., Leventhal, L., Yang, K., and Pasternak, G.W. (1996). Novel receptor mechanisms for heroin and morphine-6 beta-glucuronide analgesia. Neurosci. Lett. *216*, 1-4.

S407. Seguin, L., Le Marouille-Girardon, S., and Millan, M.J. (1995). Antinociceptive profiles of non-peptidergic neurokinin1 and neurokinin2 receptor antagonists: a comparison to other classes of antinociceptive agent. Pain *61*, 325-343.

S408. Shah, S., Duttaroy, A., Davis, T., and Yoburn, B.C. (1994). Spinal and supraspinal effects of pertussis toxin on opioid analgesia. Pharmacol. Biochem. Behav. *49*, 773-776.

S409. Thompson, S.J., Koszdin, K., and Bernards, C.M. (2000). Opiate-induced analgesia is increased and prolonged in mice lacking P-glycoprotein. Anesthesiology *92*, 1392-1399.

S410. Yoburn, B.C., Shah, S., Chan, K., Duttaroy, A., and Davis, T. (1995). Supersensitivity to opioid analgesics following chronic opioid antagonist treatment: Relationship to receptor selectivity. Pharmacol. Biochem. Behav. *51*, 535-539.

S411. Zernig, G., Issaevitch, T., Broadbear, J.H., Burke, T.F., Lewis, J.W., Brine, G.A., and Woods, J.H. (1995). Receptor reserve and affinity of mu opioid agonists in mouse antinociception: correlation with receptor binding. Life Sci. *57*, 2113-2125.

S412. Alonso, R., Griebel, G., Pavone, G., Stemmelin, J., Le Fur, G., and Soubrie, P. (2003). Blockade of CRF(1) or V(1b) receptors reverses stress-induced suppression of neurogenesis in a mouse model of depression. Mol. Psychiatry *9*, 278-286.

S413. Conti, A.C., Cryan, J.F., Dalvi, A., Lucki, I., and Blendy, J.A. (2002). cAMP response element-binding protein is essential for the upregulation of brain-derived neurotrophic factor transcription, but not the behavioral or endocrine responses to antidepressant drugs. J. Neurosci. *22*, 3262-3268.

S414. David, D.J., Samuels, B.A., Rainer, Q., Wang, J.-W., Marsteller, D., Mendez, I., Drew, M., Craig, D.A., Guiard, B.P., Guilloux, J.-P., *et al.* (2009). Neurogenesis-dependent and -independent effects of fluoxetine in an animal model of anxiety/depression. Neuron *62*, 479-493.

S415. Ducottet, C., Griebel, G., and Belzung, C. (2003). Effects of the selective nonpeptide corticotropin-releasing factor receptor 1 antagonist antalarmin in the chronic mild stress model of depression in mice. Prog. Neuropsychopharmacol. Biol. Psychiatry *27*, 625-631.

S416. Dulawa, S.C., Holick, K.A., Gundersen, B., and Hen, R. (2004). Effects of chronic fluoxetine in animal models of anxiety and depression. Neuropsychopharmacology *29*, 1321-1330.

S417. El Yacoubi, M., Bouali, S., Popa, D., Naudon, L., Leroux-Nicollet, I., Hamon, M., Costentin, J., Adrien, J., and Vaugeois, J.M. (2003). Behavioral, neurochemical, and electrophysiological characterization of a genetic mouse model of depression. Proc. Natl. Acad. Sci. U.S.A. *100*, 6227-6232.

S418. Heurteaux, C., Lucas, G., Guy, N., El Yacoubi, M., Thummler, S., Peng, X.-D., Noble, F., Blondeau, N., Widmann, C., Borsotto, M., *et al.* (2006). Deletion of the background potassium channel TREK-1 results in a depression-resistant phenotype. Nat. Neurosci. *9*, 1134-1141.

S419. Holick, K.A., Lee, D.C., Hen, R., and Dulawa, S.C. (2007). Behavioral effects of chronic fluoxetine in BALB/cJ Mice do not require adult hippocampal neurogenesis or the serotonin 1A receptor. Neuropsychopharmacology *33*, 406-417.

S420. Holmes, A., Yang, R.J., Murphy, D.L., and Crawley, J.N. (2002). Evaluation of antidepressant-related behavioral responses in mice lacking the serotonin transporter. Neuropsychopharmacology *27*, 914-923.

S421. Karlsson, R.-M., Choe, J.S., Cameron, H.A., Thorsell, A., Crawley, J.N., Holmes, A., and Heilig, M. (2008). The neuropeptide Y Y1 receptor subtype is necessary for the anxiolytic-like effects of neuropeptide Y, but not the antidepressant-like effects of fluoxetine, in mice. Psychopharmacology (Berl.) *195*, 547-557.

S422. Karpova, N.N., Lindholm, J., Pruunsild, P., Timmusk, T., and Castrén, E. (2009). Long-lasting behavioural and molecular alterations induced by early postnatal

fluoxetine exposure are restored by chronic fluoxetine treatment in adult mice. Eur. Neuropsychopharmacol. *19*, 97-108.

S423. Khisti, R.T., Chopde, C.T., and Jain, S.P. (2000). Antidepressant-like effect of the neurosteroid 3α-hydroxy-5α-pregnan-20-one in mice forced swim test. Pharmacol. Biochem. Behav. *67*, 137-143.

S424. Koike, H., Ibi, D., Mizoguchi, H., Nagai, T., Nitta, A., Takuma, K., Nabeshima, T., Yoneda, Y., and Yamada, K. (2009). Behavioral abnormality and pharmacologic response in social isolation-reared mice. Behav. Brain Res. *202*, 114-121.

S425. Li, S., Wang, C., Wang, M., Li, W., Matsumoto, K., and Tang, Y. (2007). Antidepressant like effects of piperine in chronic mild stress treated mice and its possible mechanisms. Life Sci. *80*, 1373-1381.

S426. Li, Y., Luikart, B.W., Birnbaum, S., Chen, J., Kwon, C.-H., Kernie, S.G., Bassel-Duby, R., and Parada, L.F. (2008). TrkB regulates hippocampal neurogenesis and governs sensitivity to antidepressive treatment. Neuron *59*, 399-412.

S427. Liu, J., Garza, J.C., Bronner, J., Kim, C.S., Zhang, W., and Lu, X.-Y. (2010). Acute administration of leptin produces anxiolytic-like effects: a comparison with fluoxetine. Psychopharmacology (Berl.) *207*, 535-545.

S428. Lucki, I., Dalvi, A., and Mayorga, A.J. (2001). Sensitivity to the effects of pharmacologically selective antidepressants in different strains of mice. Psychopharmacology (Berl.) *155*, 315-322.

S429. Mayorga, A.J., Dalvi, A., Page, M.E., Zimov-Levinson, S., Hen, R., and Lucki, I. (2001). Antidepressant-like behavioral effects in 5-hydroxytryptamine$_{1A}$ and 5-hydroxytryptamine$_{1B}$ receptor mutant mice. J. Pharmacol. Exp. Ther. *298*, 1101-1107.

S430. Mineur, Y.S., Obayemi, A., Wigestrand, M.B., Fote, G.M., Calarco, C.A., Li, A.M., and Picciotto, M.R. (2013). Cholinergic signaling in the hippocampus regulates social stress resilience and anxiety- and depression-like behavior. Proc. Natl. Acad. Sci. U.S.A. *110*, 3573-3578.

S431. Rosa, A.O., Lin, J., Calixto, J.B., Santos, A.R.S., and Rodrigues, A.L.S. (2003). Involvement of NMDA receptors and L-arginine-nitric oxide pathway in the antidepressant-like effects of zinc in mice. Behav. Brain Res. *144*, 87-93.

S432. Rupniak, N.M., Carlson, E.J., Webb, J.K., Harrison, T., Porsolt, R.D., Roux, S., de Felipe, C., Hunt, S.P., Oates, B., and Wheeldon, A. (2001). Comparison of the phenotype of NK1R-/- mice with pharmacological blockade of the substance P (NK1) receptor in assays for antidepressant and anxiolytic drugs. Behav. Pharmacol. *12*, 497-508.

S433. Santarelli, L., Saxe, M., Gross, C., Surget, A., Battaglia, F., Dulawa, S., Weisstaub, N., Lee, J., Duman, R., Arancio, O., *et al.* (2003). Requirement of

hippocampal neurogenesis for the behavioral effects of antidepressants. Science *301*, 805-809.

S434. Shanahan, N.A., Velez, L.P., Masten, V.L., and Dulawa, S.C. (2011). Essential role for orbitofrontal serotonin 1B receptors in obsessive-compulsive disorder-like behavior and serotonin reuptake inhibitor response in mice. Biol. Psychiatry *70*, 1039-1048.

S435. Surget, A., Saxe, M., Leman, S., Ibarguen-Vargas, Y., Chalon, S., Griebel, G., Hen, R., and Belzung, C. (2008a). Drug-dependent requirement of hippocampal neurogenesis in a model of depression and of antidepressant reversal. Biol. Psychiatry *64*, 293-301.

S436. Surget, A., Wang, Y., Leman, S., Ibarguen-Vargas, Y., Edgar, N., Griebel, G., Belzung, C., and Sibille, E. (2008b). Corticolimbic transcriptome changes are state-dependent and region-specific in a rodent model of depression and of antidepressant reversal. Neuropsychopharmacology *34*, 1363-1380.

S437. Svenningsson, P., Tzavara, E.T., Qi, H., Carruthers, R., Witkin, J.M., Nomikos, G.G., and Greengard, P. (2007). Biochemical and behavioral evidence for antidepressant-like effects of 5-HT_6 receptor stimulation. J. Neurosci. *27*, 4201-4209.

S438. Svenningsson, P., Tzavara, E.T., Witkin, J.M., Fienberg, A.A., Nomikos, G.G., and Greengard, P. (2002). Involvement of striatal and extrastriatal DARPP-32 in biochemical and behavioral effects of fluoxetine (Prozac). Proc. Natl. Acad. Sci. U.S.A. *99*, 3182-3187.

S439. Urani, A., Roman, F.J., Phan, V.-L., Su, T.-P., and Maurice, T. (2001). The antidepressant-like effect induced by ς_1-receptor agonists and neuroactive steroids in mice submitted to the forced swimming test. J. Pharmacol. Exp. Ther. *298*, 1269-1279.

S440. Vialou, V., Robison, A.J., LaPlant, Q.C., Covington, H.E., Dietz, D.M., Ohnishi, Y.N., Mouzon, E., Rush, A.J., Watts, E.L., Wallace, D.L., *et al.* (2010). ΔFosB in brain reward circuits mediates resilience to stress and antidepressant responses. Nat. Neurosci. *13*, 745-752.

S441. Zhang, H.-T., Huang, Y., Jin, S.L.C., Frith, S.A., Suvarna, N., Conti, M., and O'Donnell, J.M. (2002). Antidepressant-like profile and reduced sensitivity to rolipram in mice deficient in the PDE4D phosphodiesterase enzyme. Neuropsychopharmacology *27*, 587-595.

S442. Belzung, C., El Hage, W., Moindrot, N., and Griebel, G. (2001). Behavioral and neurochemical changes following predatory stress in mice. Neuropharmacology *41*, 400-408.

S443. Chen, Z.-Y., Jing, D., Bath, K.G., Ieraci, A., Khan, T., Siao, C.-J., Herrera, D.G., Toth, M., Yang, C., McEwen, B.S., *et al.* (2006). Genetic variant BDNF (Val66Met) polymorphism alters anxiety-related behavior. Science *314*, 140-143.

S444. Greene-Schloesser, D.M., Van der Zee, E.A., Sheppard, D.K., Castillo, M.R., Gregg, K.A., Burrow, T., Foltz, H., Slater, M., and Bult-Ito, A. (2011). Predictive validity of a non-induced mouse model of compulsive-like behavior. Behav. Brain Res. *221*, 55-62.

S445. Griebel, G., Blanchard, D.C., Agnes, R.S., and Blanchard, R.J. (1995). Differential modulation of antipredator defensive behavior in Swiss-Webster mice following acute or chronic administration of imipramine and fluoxetine. Psychopharmacology (Berl.) *120*, 57-66.

S446. Hascoët, M., Bourin, M., Colombel, M.C., Fiocco, A.J., and Baker, G.B. (2000). Anxiolytic-like effects of antidepressants after acute administration in a four-plate test in mice. Pharmacol. Biochem. Behav. *65*, 339-344.

S447. Huang, G.J., Bannerman, D., and Flint, J. (2008). Chronic fluoxetine treatment alters behavior, but not adult hippocampal neurogenesis, in BALB/cJ mice. Mol. Psychiatry *13*, 119-121.

S448. Kantak, P.A., Bobrow, D.N., and Nyby, J.G. (2014). Obsessive-compulsive-like behaviors in house mice are attenuated by a probiotic (*Lactobacillus rhamnosus* GG). Behav. Pharmacol. *25*, 71-79.

S449. Karpova, N.N., Pickenhagen, A., Lindholm, J., Tiraboschi, E., Kulesskaya, N., Ágústsdóttir, A., Antila, H., Popova, D., Akamine, Y., Sullivan, R., *et al.* (2011). Fear erasure in mice requires synergy between antidepressant drugs and extinction training. Science *334*, 1731.

S450. Kopp, C., Vogel, E., Rettori, M.C., Delagrange, P., and Misslin, R. (1999). The effects of melatonin on the behavioural disturbances induced by chronic mild stress in C3H/He mice. Behav. Pharmacol. *10*, 73-83.

S451. Nardo, M., Casarotto, P.C., Gomes, F.V., and Guimarães, F.S. (2014). Cannabidiol reverses the mCPP-induced increase in marble-burying behavior. Fundam Clin Pharmacol *28*, 544-550.

S452. Shanahan, N.A., Holick Pierz, K.A., Masten, V.L., Waeber, C., Ansorge, M., Gingrich, J.A., Geyer, M.A., Hen, R., and Dulawa, S.C. (2009). Chronic reductions in serotonin transporter function prevent 5-HT1B-induced behavioral effects in mice. Biol. Psychiatry *65*, 401-408.

S453. Siegmund, A., and Wotjak, C.T. (2007). A mouse model of posttraumatic stress disorder that distinguishes between conditioned and sensitised fear. J. Psychiatr. Res. *41*, 848-860.

S454. Zhang, J., Huang, X.-Y., Ye, M.-L., Luo, C.-X., Wu, H.-Y., Hu, Y., Zhou, Q.-G., Wu, D.-L., Zhu, L.-J., and Zhu, D.-Y. (2010). Neuronal nitric oxide synthase alteration accounts for the role of 5-HT_{1A} receptor in modulating anxiety-related behaviors. J. Neurosci. *30*, 2433-2441.

S455. Abe, M., Nakai, H., Tabata, R., Saito, K., and Egawa, M. (1998). Effect of 5-[3-[((2*S*)-1,4-benzodioxan-2-ylmethyl)amino]propoxy]-1,3-benzodioxole HCl (MKC-242), a novel 5-HT_{1A}-receptor agonist, on aggressive behavior and marble burying behavior in mice. Jpn. J. Pharmacol. *76*, 297-304.

S456. Ahmari, S.E., Spellman, T., Douglass, N.L., Kheirbek, M.A., Simpson, H.B., Deisseroth, K., Gordon, J.A., and Hen, R. (2013). Repeated cortico-striatal stimulation generates persistent OCD-like behavior. Science *340*, 1234-1239.

S457. Arora, T., Bhowmik, M., Khanam, R., and Vohora, D. (2013). Oxcarbazepine and fluoxetine protect against mouse models of obsessive compulsive disorder through modulation of cortical serotonin and CREB pathway. Behav. Brain Res. *247*, 146-152.

S458. Kaurav, B.P.S., Wanjari, M.M., Chandekar, A., Chauhan, N.S., and Upmanyu, N. (2012). Influence of *Withania somnifera* on obsessive compulsive disorder in mice. Asian Pac J Trop Med *5*, 380-384.

S459. Li, X., Morrow, D., and Witkin, J.M. (2006). Decreases in nestlet shredding of mice by serotonin uptake inhibitors: Comparison with marble burying. Life Sci. *78*, 1933-1939.

S460. Nicolas, L.B., Kolb, Y., and Prinssen, E.P.M. (2006). A combined marble burying–locomotor activity test in mice: A practical screening test with sensitivity to different classes of anxiolytics and antidepressants. Eur. J. Pharmacol. *547*, 106-115.

S461. Rhodes, J., Hosack, G., Girard, I., Kelley, A., Mitchell, G., and Garland, T. (2001). Differential sensitivity to acute administration of cocaine, GBR 12909, and fluoxetine in mice selectively bred for hyperactive wheel-running behavior. Psychopharmacology (Berl.) *158*, 120-131.

S462. Shmelkov, S.V., Hormigo, A., Jing, D., Proenca, C.C., Bath, K.G., Milde, T., Shmelkov, E., Kushner, J.S., Baljevic, M., Dincheva, I., *et al.* (2010). Slitrk5 deficiency impairs corticostriatal circuitry and leads to obsessive-compulsive-like behaviors in mice. Nat. Med. *16*, 598-602.

S463. Bruins Slot, L.A., Bardin, L., Auclair, A.L., Depoortere, R., and Newman-Tancredi, A. (2008). Effects of antipsychotics and reference monoaminergic ligands on marble burying behavior in mice. Behav. Pharmacol. *19*, 145-152.

S464. Takeuchi, H., Yatsugi, S., and Yamaguchi, T. (2002). Effect of YM992, a novel antidepressant with selective serotonin re-uptake inhibitory and 5-HT_{2A} receptor

antagonistic activity, on a marble-burying behavior test as an obsessive-compulsive disorder model. Jpn. J. Pharmacol. *90*, 197-200.

S465. Uday, G., Pravinkumar, B., Manish, W., and Sudhir, U. (2007). LHRH antagonist attenuates the effect of fluoxetine on marble-burying behavior in mice. Eur. J. Pharmacol. *563*, 155-159.

S466. Umathe, S., Bhutada, P., Dixit, P., and Shende, V. (2008). Increased marble-burying behavior in ethanol-withdrawal state: modulation by gonadotropin-releasing hormone agonist. Eur. J. Pharmacol. *587*, 175-180.

S467. Umathe, S.N., Bhutada, P.S., Jain, N.S., Mundhada, Y.R., Borkar, S.S., and Dhumal, B. (2009). Role of nitric oxide in obsessive-compulsive behavior and its involvement in the anti-compulsive effect of paroxetine in mice. Nitric Oxide *21*, 140-147.

S468. Umathe, S.N., Manna, S.S.S., and Jain, N.S. (2011). Involvement of endocannabinoids in antidepressant and anti-compulsive effect of fluoxetine in mice. Behav. Brain Res. *223*, 125-134.

S469. Umathe, S.N., Manna, S.S.S., and Jain, N.S. (2012). Endocannabinoid analogues exacerbate marble-burying behavior in mice via TRPV1 receptor. Neuropharmacology *62*, 2024-2033.

S470. Wald, R., Dodman, N., and Shuster, L. (2009). The combined effects of memantine and fluoxetine on an animal model of obsessive compulsive disorder. Exp Clin Psychopharmacol *17*, 191-197.

S471. Weber, M., Talmon, S., Schulze, I., Boeddinghaus, C., Gross, G., Schoemaker, H., and Wicke, K.M. (2009). Running wheel activity is sensitive to acute treatment with selective inhibitors for either serotonin or norepinephrine reuptake. Psychopharmacology (Berl.) *203*, 753-762.

S472. Woehrle, N.S., Klenotich, S.J., Jamnia, N., Ho, E.V., and Dulawa, S.C. (2013). Effects of chronic fluoxetine treatment on serotonin 1B receptor-induced deficits in delayed alternation. Psychopharmacology (Berl.) *227*, 545-551.

S473. Capasso, K.E., Manners, M.T., Quershi, R.A., Tian, Y., Gao, R., Hu, H., Barrett, J.E., Sacan, A., and Ajit, S.K. (2015). Effect of histone deacetylase inhibitor JNJ-26481585 in pain. J. Mol. Neurosci. *55*, 570-578.

S474. Chen, Z., Janes, K., Chen, C., Doyle, T., Bryant, L., Tosh, D.K., Jacobson, K.A., and Salvemini, D. (2012). Controlling murine and rat chronic pain through A_3 adenosine receptor activation. FASEB J. *26*, 1855-1865.

S475. Di Lio, A., Benke, D., Besson, M., Desmeules, J., Daali, Y., Wang, Z.J., Edwankar, R., Cook, J.M., and Zeilhofer, H.U. (2011). HZ166, a novel $GABA_A$

receptor subtype-selective benzodiazepine site ligand, is antihyperalgesic in mouse models of inflammatory and neuropathic pain. Neuropharmacology *60*, 626-632.

S476. Field, M.J., Cox, P.J., Stott, E., Melrose, H., Offord, J., Su, T.Z., Bramwell, S., Corradini, L., England, S., Winks, J., *et al.* (2006). Identification of the α_2-δ-1 subunit of voltage-dependent calcium channels as a molecular target for pain mediating the analgesic actions of pregabalin. Proc. Nat. Acad. Sci. U.S.A. *103*, 17537-17542.

S477. Gustafsson, H., Flood, K., Berge, O.G., Brodin, E., Olgart, L., and Stiller, C.O. (2003). Gabapentin reverses mechanical allodynia induced by sciatic nerve ischemia and formalin-induced nociception in mice. Exp. Neurol. *182*, 427-434.

S478. Jiang, Y.Q., Andrade, A., and Lipscombe, D. (2013). Spinal morphine but not ziconotide or gabapentin analgesia is affected by alternative splicing of voltage-gated calcium channel $Ca_V2.2$ pre-mRNA. Mol Pain *9*, 67.

S479. Khan, N., Woodruff, T.M., and Smith, M.T. (2014). Establishment and characterization of an optimized mouse model of multiple sclerosis-induced neuropathic pain using behavioral, pharmacologic, histologic and immunohistochemical methods. Pharmacol. Biochem. Behav. *126*, 13-27.

S480. Kinsey, S.G., Long, J.Z., Cravatt, B.F., and Lichtman, A.H. (2010). Fatty acid amide hydrolase and monoacylglycerol lipase inhibitors produce anti-allodynic effects in mice through distinct cannabinoid receptor mechanisms. J. Pain *11*, 1420-1428.

S481. Krzyzanowska, A., Pittolo, S., Cabrerizo, M., Sanchez-Lopez, J., Krishnasamy, S., Venero, C., and Avendano, C. (2011). Assessing nociceptive sensitivity in mouse models of inflammatory and neuropathic trigeminal pain. J. Neurosci. Methods *201*, 46-54.

S482. Kusunose, N., Koyanagi, S., Hamamura, K., Matsunaga, N., Yoshida, M., Uchida, T., Tsuda, M., Inoue, K., and Ohdo, S. (2010). Molecular basis for the dosing time-dependency of anti-allodynic effects of gabapentin in a mouse model of neuropathic pain. Mol Pain *6*, 83.

S483. Manjavachi, M.N., Costa, R., Quintao, N.L., and Calixto, J.B. (2014). The role of keratinocyte-derived chemokine (KC) on hyperalgesia caused by peripheral nerve injury in mice. Neuropharmacology *79*, 17-27.

S484. Matsumoto, K., Narita, M., Muramatsu, N., Nakayama, T., Misawa, K., Kitajima, M., Tashima, K., Devi, L.A., Suzuki, T., Takayama, H., and Horie, S. (2014). Orally active opioid μ/δ dual agonist MGM-16, a derivative of the indole alkaloid mitragynine, exhibits potent antiallodynic effect on neuropathic pain in mice. J. Pharmacol. Exp. Ther. *348*, 383-392.

S485. Miranda, H.F., Noriega, V., Zepeda, R., Zanetta, P., Prieto-Rayo, J., Prieto, J.C., and Sierralta, F. (2015). Antinociceptive synergism of gabapentin and nortriptyline in mice with partial sciatic nerve ligation. Pharmacology *95*, 59-64.

S486. Morioka, N., Zhang, F.F., Nakamura, Y., Kitamura, T., Hisaoka-Nakashima, K., and Nakata, Y. (2015). Tumor necrosis factor-mediated downregulation of spinal astrocytic connexin43 leads to increased glutamatergic neurotransmission and neuropathic pain in mice. Brain Behav. Immun. *49*, 293-310.

S487. Ogawa, K., Takasu, K., Shinohara, S., Yoneda, Y., and Kato, A. (2012). Pharmacological characterization of lysophosphatidic acid-induced pain with clinically relevant neuropathic pain drugs. Eur J Pain *16*, 994-1004.

S488. Quintao, N.L., da Silva, G.F., Antonialli, C.S., Rocha, L.W., Cechinel Filho, V., and Ciccio, J.F. (2010). Chemical composition and evaluation of the anti-hypernociceptive effect of the essential oil extracted from the leaves of *Ugni myricoides* on inflammatory and neuropathic models of pain in mice. Planta Med. *76*, 1411-1418.

S489. Rehni, A.K., Singh, I., and Kumar, M. (2008). Tramadol-induced seizurogenic effect: A possible role of opioid-dependent γ-aminobutyric acid inhibitory pathway. Basic Clin. Pharmacol. Toxicol. *103*, 262-266.

S490. Sasaki, A., Serizawa, K., Andoh, T., Shiraki, K., Takahata, H., and Kuraishi, Y. (2008). Pharmacological differences between static and dynamic allodynia in mice with herpetic or postherpetic pain. J. Pharmacol. Sci. *108*, 266-273.

S491. Takasaki, I., Andoh, T., Nitta, M., Takahata, H., Nemoto, H., Shiraki, K., Nojima, H., and Kuraishi, Y. (2000). Pharmacological and immunohistochemical characterization of a mouse model of acute herpetic pain. Jpn. J. Pharmacol. *83*, 319-326.

S492. Takasaki, I., Andoh, T., Nojima, H., Shiraki, K., and Kuraishi, Y. (2001). Gabapentin antinociception in mice with acute herpetic pain induced by herpes simplex virus infection. J. Pharmacol. Exp. Ther. *296*, 270-275.

S493. Takasaki, I., Sasaki, A., Andoh, T., Nojima, H., Shiraki, K., and Kuraishi, Y. (2002). Effects of analgesics on delayed postherpetic pain in mice. Anesthesiology *96*, 1168-1174.

S494. Wagner, K., Yang, J., Inceoglu, B., and Hammock, B.D. (2014). Soluble epoxide hydrolase inhibition is antinociceptive in a mouse model of diabetic neuropathy. J. Pain *15*, 907-914.

S495. Walczak, J.-S., Pichette, V., Leblond, F., Desbiens, K., and Beaulieu, P. (2006). Characterization of chronic constriction of the saphenous nerve, a model of neuropathic pain in mice showing rapid molecular and electrophysiological changes. J. Neurosci. Res. *83*, 1310-1322.

S496. Wang, T.X., Yin, D., Guo, W., Liu, Y.Y., Li, Y.D., Qu, W.M., Han, W.J., Hong, Z.Y., and Huang, Z.L. (2015). Antinociceptive and hypnotic activities of pregabalin in a neuropathic pain-like model in mice. Pharmacol. Biochem. Behav. *135*, 31-39.

S497. Ye, G.L., Savelieva, K.V., Vogel, P., Baker, K.B., Mason, S., Lanthorn, T.H., and Rajan, I. (2015). Ligation of mouse L4 and L5 spinal nerves produces robust allodynia without major motor function deficit. Behav. Brain Res. *276*, 99-110.

S498. Young, G.T., Emery, E.C., Mooney, E.R., Tsantoulas, C., and McNaughton, P.A. (2014). Inflammatory and neuropathic pain are rapidly suppressed by peripheral block of hyperpolarisation-activated cyclic nucleotide-gated ion channels. Pain *155*, 1708-1719.

S499. Borowicz, Kinga K., Swiader, M., Luszczki, J., and Czuczwar, Stanislaw J. (2002b). Effect of gabapentin on the anticonvulsant activity of antiepileptic drugs against electroconvulsions in mice: an isobolographic analysis. Epilepsia *43*, 956-963.

S500. Dalby, N.O., and Nielsen, E.B. (1997). Comparison of the preclinical anticonvulsant profiles of tiagabine, lamotrigine, gabapentin and vigabatrin. Epilepsy Res. *28*, 63-72.

S501. Dudra-Jastrzebska, M., Andres-Mach, M.M., Sielski, M., Ratnaraj, N., Patsalos, P.N., Czuczwar, S.J., and Luszczki, J.J. (2009). Pharmacodynamic and pharmacokinetic interaction profiles of levetiracetam in combination with gabapentin, tiagabine and vigabatrin in the mouse pentylenetetrazole-induced seizure model: An isobolographic analysis. Eur. J. Pharmacol. *605*, 87-94.

S502. Gareri, P., Condorelli, D., Belluardo, N., Gratteri, S., Ferreri, G., Donato Di Paola, E., De Sarro, A., and De Sarro, G. (2004). Influence of carbenoxolone on the anticonvulsant efficacy of conventional antiepileptic drugs against audiogenic seizures in DBA/2 mice. Eur. J. Pharmacol. *484*, 49-56.

S503. Gasior, M., Ungard, J.T., and Witkin, J.M. (1999). Preclinical evaluation of newly approved and potential antiepileptic drugs against cocaine-induced seizures. J. Pharmacol. Exp. Ther. 290, 1148-1156.

S504. Hosford, D.A., and Wang, Y. (1997). Utility of the lethargic (lh/lh) mouse model of absence seizures in predicting the effects of lamotrigine, vigabatrin, tiagabine, gabapentin, and topiramate against human absence seizures. Epilepsia *38*, 408-414.

S505. Luszczki, J.J., and Czuczwar, S.J. (2004). Isobolographic profile of interactions between tiagabine and gabapentin: a preclinical study. Naunyn Schmiedebergs Arch. Pharmacol. *369*, 434-446.

S506. Luszczki, J.J., and Czuczwar, S.J. (2005). Isobolographic characterisation of interactions among selected newer antiepileptic drugs in the mouse pentylenetetrazole-induced seizure model. Naunyn Schmiedebergs Arch. Pharmacol. *372*, 41-54.

S507. Luszczki, J.J., and Czuczwar, S.J. (2006). Gabapentin synergistically interacts with topiramate in the mouse maximal electroshock seizure model: an isobolographic analysis. Pharmacol. Rep. *58*, 944-954.

S508. Luszczki, J.J., Swiader, M., Parada-Turska, J., and Czuczwar, S.J. (2003). Tiagabine synergistically interacts with gabapentin in the electroconvulsive threshold rest in mice. Neuropsychopharmacology *28*, 1817-1830.

S509. Luszczki, J.J., Andres, M.M., and Czuczwar, S.J. (2005). Synergistic interaction of gabapentin and oxcarbazepine in the mouse maximal electroshock seizure model--an isobolographic analysis. Eur. J. Pharmacol. *515*, 54-61.

S510. Luszczki, J.J., Ratnaraj, N., Patsalos, P.N., and Czuczwar, S.J. (2008). Isobolographic and behavioral characterizations of interactions between vigabatrin and gabapentin in two experimental models of epilepsy. Eur. J. Pharmacol. *595*, 13-21.

S511. Luszczki, J.J., Filip, D., and Florek-Luszczki, M. (2012). Interactions of pregabalin with gabapentin, levetiracetam, tiagabine and vigabatrin in the mouse maximal electroshock-induced seizure model: a type II isobolographic analysis. Epilepsy Res. *98*, 148-156.

S512. Shandra, A., Shandra, P., Kaschenko, O., Matagne, A., and Stöhr, T. (2013). Synergism of lacosamide with established antiepileptic drugs in the 6-Hz seizure model in mice. Epilepsia *54*, 1167-1175.

S513. Sills, G.J., Butler, E., Thompson, G.G., and Brodie, M.J. (2004). Pharmacodynamic interaction studies with topiramate in the pentylenetetrazol and maximal electroshock seizure models. Seizure *13*, 287-295.

S514. Traa, B.S., Mulholland, J.D., Kadam, S.D., Johnston, M.V., and Comi, A.M. (2008). Gabapentin neuroprotection and seizure suppression in immature mouse brain ischemia. Pediatr. Res. *64*, 81-85.

S515. Vartanian, M.G., Radulovic, L.L., Kinsora, J.J., Serpa, K.A., Vergnes, M., Bertram, E., and Taylor, C.P. (2006). Activity profile of pregabalin in rodent models of epilepsy and ataxia. Epilepsy Res. *68*, 189-205.

S516. Vohora, D., Pal, S.N., and Pillai, K.K. (2001). Histamine and selective H_3-receptor ligands: a possible role in the mechanism and management of epilepsy. Pharmacol. Biochem. Behav. *68*, 735-741.

S517. Yamashita, H., Ohno, K., Amada, Y., Hattori, H., Ozawa-Funatsu, Y., Toya, T., Inami, H., Shishikura, J.-I., Sakamoto, S., Okada, M., and Yamaguchi, T. (2004). Effects of 2-[*N*-(4-Chlorophenyl)-*N*-methylamino]-4*H*-pyrido[3.2-*e*]-1,3-thiazin-4-one (YM928), an orally active α-Amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid receptor antagonist, in models of generalized epileptic seizure in mice and rats. J. Pharmacol. Exp. Ther. 3*08*, 127-133.

S518. Zuchora, B., Wielosz, M., and Urbanska, E.M. (2005). Adenosine A_1 receptors and the anticonvulsant potential of drugs effective in the model of 3-nitropropionic acid-induced seizures in mice. Eur. Neuropsychopharmacol. *15*, 85-93.

S519. Agarwal, N.B., Agarwal, N.K., Mediratta, P.K., and Sharma, K.K. (2011). Effect of lamotrigine, oxcarbazepine and topiramate on cognitive functions and oxidative stress in PTZ-kindled mice. Seizure *20*, 257-262.

S520. Ali, A., Pillai, K.K., and Pal, S.N. (2003). Effects of folic acid and lamotrigine therapy in some rodent models of epilepsy and behaviour. J. Pharm. Pharmacol. *55*, 387-391.

S521. Barton, M.E., Klein, B.D., Wolf, H.H., and White, H.S. (2001). Pharmacological characterization of the 6 Hz psychomotor seizure model of partial epilepsy. Epilepsy Res. *47*, 217-227.

S522. Fariello, R.G., McArthur, R.A., Bonsignori, A., Cervini, M.A., Maj, R., Marrari, P., Pevarello, P., Wolf, H.H., Woodhead, J.W., White, H.S., *et al.* (1998). Preclinical evaluation of PNU-151774E as a novel anticonvulsant. J. Pharmacol. Exp. Ther. *285*, 397-403.

S523. Foreman, M.M., Hanania, T., Stratton, S.C., Wilcox, K.S., White, H.S., Stables, J.P., and Eller, M. (2008). In vivo pharmacological effects of JZP-4, a novel anticonvulsant, in models for anticonvulsant, antimania and antidepressant activity. Pharmacol. Biochem. Behav. *89*, 523-534.

S524. Luszczki, J.J., and Czuczwar, S.J. (2004). Preclinical profile of combinations of some second-generation antiepileptic drugs: an isobolographic analysis. Epilepsia *45*, 895-907.

S525. Luszczki, J., Swiader, M., Czuczwar, M., Kis, J., and Czuczwar, S.J. (2003). Interactions of tiagabine with some antiepileptics in the maximal electroshock in mice. Pharmacol. Biochem. Behav. *75*, 319-327.

S526. Luszczki, J.J., Czuczwar, M., Kis, J., Krysa, J., Pasztelan, I., Swiader, M., and Czuczwar, S.J. (2003). Interactions of lamotrigine with topiramate and first-generation antiepileptic drugs in the maximal electroshock test in mice: an isobolographic analysis. Epilepsia *44*, 1003-1013.

S527. Luszczki, J.J., Andres, M.M., Czuczwar, P., Cioczek-Czuczwar, A., Ratnaraj, N., Patsalos, P.N., and Czuczwar, S.J. (2006). Pharmacodynamic and pharmacokinetic characterization of interactions between levetiracetam and numerous antiepileptic drugs in the mouse maximal electroshock seizure model: an isobolographic analysis. Epilepsia *47*, 10-20.

S528. Luszczki, J.J., Czuczwar, M., Gawlik, P., Sawiniec-Pozniak, G., Czuczwar, K., and Czuczwar, S.J. (2006). 7-Nitroindazole potentiates the anticonvulsant action of

some second-generation antiepileptic drugs in the mouse maximal electroshock-induced seizure model. J Neural Transm (Vienna) *113*, 1157-1168.

S529. Luszczki, J.J., Czernecki, R., Wojtal, K., Borowicz, K.K., and Czuczwar, S.J. (2008). Agmatine enhances the anticonvulsant action of phenobarbital and valproate in the mouse maximal electroshock seizure model. J Neural Transm (Vienna) *115*, 1485-1494.

S530. Luszczki, J.J., Wu, J.Z., Raszewski, G., and Czuczwar, S.J. (2009). Isobolographic characterization of interactions of retigabine with carbamazepine, lamotrigine, and valproate in the mouse maximal electroshock-induced seizure model. Naunyn Schmiedebergs Arch. Pharmacol. *379*, 163-179.

S531. Miller, A.A., Wheatley, P., Sawyer, D.A., Baxter, M.G., and Roth, B. (1986). Pharmacological studies on lamotrigine, a novel potential antiepileptic drug: I. Anticonvulsant profile in mice and rats. Epilepsia *27*, 483-489.

S532. Rataud, J., Debarnot, F., Mary, V., Pratt, J., and Stutzmann, J.M. (1994). Comparative study of voltage-sensitive sodium channel blockers in focal ischaemia and electric convulsions in rodents. Neurosci. Lett. *172*, 19-23.

S533. Rowley, N.M., and White, H.S. (2010). Comparative anticonvulsant efficacy in the corneal kindled mouse model of partial epilepsy: Correlation with other seizure and epilepsy models. Epilepsy Res. *92*, 163-169.

S534. Bourin, M., Masse, F., and Hascoet, M. (2005). Evidence for the activity of lamotrigine at 5-HT_{1A} receptors in the mouse forced swimming test. J. Psychiatry Neurosci. *30*, 275-282.

S535. Brody, S.A., Conquet, F., and Geyer, M.A. (2003). Disruption of prepulse inhibition in mice lacking mGluR1. Eur. J. Neurosci. *18*, 3361-3366.

S536. Brody, S.A., Conquet, F., and Geyer, M.A. (2004). Effect of antipsychotic treatment on the prepulse inhibition deficit of mGluR5 knockout mice. Psychopharmacology (Berl.) *172*, 187-195.

S537. Brody, S.A., Geyer, M.A., and Large, C.H. (2003). Lamotrigine prevents ketamine but not amphetamine-induced deficits in prepulse inhibition in mice. Psychopharmacology (Berl.) *169*, 240-246.

S538. Dencker, D., and Husum, H. (2010). Antimanic efficacy of retigabine in a proposed mouse model of bipolar disorder. Behav. Brain Res. *207*, 78-83.

S539. Douma, T.N., Millan, M.J., Verdouw, P.M., Oosting, R.S., Olivier, B., and Groenink, L. (2014). Valproate improves prepulse inhibition deficits induced by corticotropin-releasing factor independent of $GABA_A$ and $GABA_B$ receptor activation. Neuropharmacology *79*, 66-74.

S540. Flood, D.G., Choinski, M., Marino, M.J., and Gasior, M. (2009). Mood stabilizers increase prepulse inhibition in DBA/2NCrl mice. Psychopharmacology (Berl.) *205*, 369-377.

S541. Kaster, M.P., Raupp, I., Binfare, R.W., Andreatini, R., and Rodrigues, A.L. (2007). Antidepressant-like effect of lamotrigine in the mouse forced swimming test: evidence for the involvement of the noradrenergic system. Eur. J. Pharmacol. *565*, 119-124.

S542. Maksimovic, M., Vekovischeva, O.Y., Aitta-aho, T., and Korpi, E.R. (2014). Chronic treatment with mood-stabilizers attenuates abnormal hyperlocomotion of GluA1-subunit deficient mice. PLoS One *9*, e100188.

S543. Prica, C., Hascoet, M., and Bourin, M. (2008). Antidepressant-like effect of lamotrigine is reversed by veratrine: a possible role of sodium channels in bipolar depression. Behav. Brain Res. *191*, 49-54.

S544. Redrobe, J.P., and Nielsen, A.N. (2009). Effects of neuronal K_v7 potassium channel activators on hyperactivity in a rodent model of mania. Behav. Brain Res. *198*, 481-485.

S545. Anderson, N.J., Slough, S., and Watson, W.P. (2006). *In vivo* characterisation of the small-conductance K_{Ca} (SK) channel activator 1-ethyl-2-benzimidazolinone (1-EBIO) as a potential anticonvulsant. Eur. J. Pharmacol. *546*, 48-53.

S546. Dudra-Jastrzebska, M., Andres-Mach, M.M., Ratnaraj, N., Patsalos, P.N., Czuczwar, S.J., and Luszczki, J.J. (2009). Isobolographic characterization of the anticonvulsant interaction profiles of levetiracetam in combination with clonazepam, ethosuximide, phenobarbital and valproate in the mouse pentylenetetrazole-induced seizure model. Seizure *18*, 607-614.

S547. Kaminski, R.M., Gillard, M., Leclercq, K., Hanon, E., Lorent, G., Dassesse, D., Matagne, A., and Klitgaard, H. (2009). Proepileptic phenotype of SV2A-deficient mice is associated with reduced anticonvulsant efficacy of levetiracetam. Epilepsia *50*, 1729-1740.

S548. Kenda, B.M., Matagne, A.C., Talaga, P.E., Pasau, P.M., Differding, E., Lallemand, B.I., Frycia, A.M., Moureau, F.G., Klitgaard, H.V., Gillard, M.R., *et al.* (2004). Discovery of 4-substituted pyrrolidone butanamides as new agents with significant antiepileptic activity. J. Med. Chem. *47*, 530-549.

S549. Kitano, Y., Komiyama, C., Makino, M., Takasuna, K., Takazawa, A., and Sakurada, S. (2005). Anticonvulsant properties of the novel nootropic agent nefiracetam in seizure models of mice and rats. Epilepsia *46*, 811-818.

S550. Klitgaard, H., Matagne, A., Gobert, J., and Wulfert, E. (1998). Evidence for a unique profile of levetiracetam in rodent models of seizures and epilepsy. Eur. J. Pharmacol. *353*, 191-206.

S551. Luszczki, J.J., and Czuczwar, S.J. (2005). How significant is the difference between drug doses influencing the threshold for electroconvulsions? Pharmacol. Rep. *57*, 782-786.

S552. Luszczki, J.J., Andres-Mach, M.M., Ratnaraj, N., Patsalos, P.N., and Czuczwar, S.J. (2007). Levetiracetam and felbamate interact both pharmacodynamically and pharmacokinetically: an isobolographic analysis in the mouse maximal electroshock model. Epilepsia *48*, 806-815.

S553. Marrosu, F., Bortolato, M., Frau, R., Orru, M., Puligheddu, M., Fa, M., Muroni, A., Tuveri, A., and Mereu, G. (2007). Levetiracetam attenuates spontaneous spike-and-wave discharges in DBA/2J mice. Epilepsy Res. *75*, 224-227.

S554. Matagne, A., and Klitgaard, H. (1998). Validation of corneally kindled mice: a sensitive screening model for partial epilepsy in man. Epilepsy Res. *31*, 59-71.

S555. Ohno, Y., Ishihara, S., Terada, R., Serikawa, T., and Sasa, M. (2010). Antiepileptogenic and anticonvulsive actions of levetiracetam in a pentylenetetrazole kindling model. Epilepsy Res. *89*, 360-364.

S556. Oliveira, A.A., Nogueira, C.R., Nascimento, V.S., Aguiar, L.M., Freitas, R.M., Sousa, F.C., Viana, G.S., and Fonteles, M.M. (2005). Evaluation of levetiracetam effects on pilocarpine-induced seizures: cholinergic muscarinic system involvement. Neurosci. Lett. *385*, 184-188.

S557. Russo, E., Donato di Paola, E., Gareri, P., Siniscalchi, A., Labate, A., Gallelli, L., Citraro, R., and De Sarro, G. (2013). Pharmacodynamic potentiation of antiepileptic drugs' effects by some HMG-CoA reductase inhibitors against audiogenic seizures in DBA/2 mice. Pharmacol. Res. *70*, 1-12.

S558. Wojda, E., Wlaz, A., Patsalos, P.N., and Luszczki, J.J. (2009). Isobolographic characterization of interactions of levetiracetam with the various antiepileptic drugs in the mouse 6 Hz psychomotor seizure model. Epilepsy Res. *86*, 163-174.

S559. Binshtok, A.M., Gerner, P., Oh, S.B., Puopolo, M., Suzuki, S., Roberson, D.P., Herbert, T., Wang, C.F., Kim, D., Chung, G., *et al.* (2009). Coapplication of lidocaine and the permanently charged sodium channel blocker QX-314 produces a long-lasting nociceptive blockade in rodents. Anesthesiology *111*, 127-137.

S560. Bittencourt, A.L., and Takahashi, R.N. (1997). Mazindol and lidocaine are antinociceptives in the mouse formalin model: involvement of dopamine receptor. Eur. J. Pharmacol. *330*, 109-113.

S561. Caliendo, G., Di Carlo, R., Greco, G., Grieco, P., Meli, R., Novellino, E., Perissutti, E., and Santagada, V. (1995). Synthesis, local anesthetic activity and QSAR studies for a set of *N*-[2-(alkylamino)ethyl]benzotriazol-*x*-yl acetamides. Eur. J. Med. Chem. *30*, 603-608.

S562. Caliendo, G., Fiorino, F., Grieco, P., Perissutti, E., Santagada, V., Meli, R., Raso, G.M., Zanesco, A., and De Nucci, G. (1999). Preparation and local anaesthetic activity of benzotriazinone and benzoyltriazole derivatives. Eur. J. Med. Chem. *34*, 1043-1051.

S563. Dubinsky, B., Shriver, D.A., Sanfilippo, P.J., Press, J.B., Tobia, A.J., and Rosenthale, M.E. (1990). Pharmacological profile of RWJ 20085: A new, potent, long-acting local anesthetic. Drug Dev. Res. *21*, 277-289.

S564. Grant, G.J., Zakowski, M.I., Vermeulen, K., Langerman, L., Ramanathan, S., and Turndorf, H. (1993). Assessing local anesthetic effect using the mouse tail flick test. J Pharmacol Toxicol Methods *29*, 223-226.

S565. Hassan, H.G., Youssef, H., and Renck, H. (1993). Duration of experimental nerve block by combinations of local anesthetic agents. Acta Anaesthesiol Scand *37*, 70-74.

S566. He, Y., Tian, X., Hu, X., Porreca, F., and Wang, Z.J. (2012). Negative reinforcement reveals non-evoked ongoing pain in mice with tissue or nerve injury. J. Pain *13*, 598-607.

S567. Kolesnikov, Y.A., Chereshnev, I., and Pasternak, G.W. (2000). Analgesic synergy between topical lidocaine and topical opioids. J. Pharmacol. Exp. Ther. *295*, 546-551.

S568. Kolesnikov, Y., Cristea, M., Oksman, G., Torosjan, A., and Wilson, R. (2004). Evaluation of the tail formalin test in mice as a new model to assess local analgesic effects. Brain Res. *1029*, 217-223.

S569. Langerman, L., Bansinath, M., and Grant, G.J. (1994). The partition coefficient as a predictor of local anesthetic potency for spinal anesthesia: evaluation of five local anesthetics in a mouse model. Anesth. Analg. *79*, 490-494.

S570. Leszczynska, K., and Kau, S.T. (1992). A sciatic nerve blockade method to differentiate drug-induced local anesthesia from neuromuscular blockade in mice. J Pharmacol Toxicol Methods *27*, 85-93.

S571. Lim, T.K., Macleod, B.A., Ries, C.R., and Schwarz, S.K. (2007). The quaternary lidocaine derivative, QX-314, produces long-lasting local anesthesia in animal models in vivo. Anesthesiology *107*, 305-311.

S572. Moore, P.A., and Burney, R.G. (1979). Analgesic properties of lidocaine in mice. Anesth. Analg. *58*, 85-87.

S573. Puglia, C., Sarpietro, M.G., Bonina, F., Castelli, F., Zammataro, M., and Chiechio, S. (2011). Development, characterization, and in vitro and in vivo evaluation of benzocaine- and lidocaine-loaded nanostructrured lipid carriers. J. Pharm. Sci. *100*, 1892-1899.

S574. Ries, C.R., Pillai, R., Chung, C.C., Wang, J.T., MacLeod, B.A., and Schwarz, S.K. (2009). QX-314 produces long-lasting local anesthesia modulated by transient receptor potential vanilloid receptors in mice. Anesthesiology *111*, 122-126.

S575. Sakaue, A., Honda, M., Tanabe, M., and Ono, H. (2004). Antinociceptive effects of sodium channel-blocking agents on acute pain in mice. J. Pharmacol. Sci. *95*, 181-188.

S576. Schwarz, S.K., Cheung, H.M., Ries, C.R., Lee, S.M., Wang, J.T., and MacLeod, B.A. (2010). Lumbar intrathecal administration of the quaternary lidocaine derivative, QX-314, produces irritation and death in mice. Anesthesiology *113*, 438-444.

S577. Suzuki, N., Hasegawa-Moriyama, M., Takahashi, Y., Kamikubo, Y., Sakurai, T., and Inada, E. (2011). Lidocaine attenuates the development of diabetic-induced tactile allodynia by inhibiting microglial activation. Anesth. Analg. *113*, 941-946.

S578. Suzuki, Y., Goto, K., Ishige, A., Komatsu, Y., and Kamei, J. (1999). Antinociceptive effect of Gosha-jinki-gan, a Kampo medicine, in streptozotocin-induced diabetic mice. Jpn. J. Pharmacol. *79*, 169-175.

S579. Tachibana, K., and Tachibana, S. (1993). Use of ultrasound to enhance the local anesthetic effect of topically applied aqueous lidocaine. Anesthesiology *78*, 1091-1096.

S580. Verleye, M., Heulard, I., and Gillardin, J.M. (2000). Phenazone potentiates the local anaesthetic effect of lidocaine in mice. Pharmacol Res. *41*, 539-542.

S581. Wang, J.T., Chung, C.C., Whitehead, R.A., Schwarz, S.K., Ries, C.R., and MacLeod, B.A. (2010). Effects of local tramadol administration on peripheral glutamate-induced nociceptive behaviour in mice. Can J Anaesth *57*, 659-663.

S582. Womer, D.E., and Shannon, H.E. (2000). Pharmacologic reversal of pertussis toxin-induced thermal allodynia in mice. Neuropharmacology *39*, 1732-1739.

S583. Zhang, H., Zhou, F., Li, C., Kong, M., Liu, H., Zhang, P., Zhang, S., Cao, J., Zhang, L., and Ma, H. (2013). Molecular mechanisms underlying the analgesic property of intrathecal dexmedetomidine and its neurotoxicity evaluation: an in vivo and in vitro experimental study. PLoS One *8*, e55556.

S584. Bagewadi, H.G., Ak, A.K., and Shivaramegowda, R.M. (2015). An Experimental Study to Evaluate the Effect of Memantine in Animal Models of Anxiety in Swiss Albino Mice. J. Clin. Diagn. Res. *9*, FF01-05.

S585. Pérez Conchillo, M., Martínez-Sanchis, S., Salvador, A., and Simón, V.M. (2002). The GABAergic effect of low doses of lorazepam on social behavior. Aggress Behav *28*, 248-256.

S586. Costall, B., and Naylor, R.J. (1997). The influence of 5-HT_2 and 5-HT_4 receptor antagonists to modify drug induced disinhibitory effects in the mouse light/dark test. Br. J. Pharmacol. *122*, 1105-1118.

S587. De Angelis, L. (1992). The nootropic drugs piracetam and oxiracetam do not reduce anxiety in mice during elevated-x-maze testing. Curr Ther Res Clin Exp *52*, 230-237.

S588. de Angelis, L. (1995). Effects of valproate and lorazepam on experimental anxiety: tolerance, withdrawal, and role of clonidine. Pharmacol. Biochem. Behav. *52*, 329-333.

S589. De Angelis, L., and Furlan, C. (2000). The anxiolytic-like properties of two selective MAOIs, moclobemide and selegiline, in a standard and an enhanced light/dark aversion test. Pharmacol. Biochem. Behav. *65*, 649-653.

S590. Dubinsky, B., Vaidya, A.H., Rosenthal, D.I., Hochman, C., Crooke, J.J., DeLuca, S., DeVine, A., Cheo-Isaacs, C.T., Carter, A.R., Jordan, A.D., *et al.* (2002). 5-ethoxymethyl-7-fluoro-3-oxo-1,2,3,5-tetrahydrobenzo[4,5]imidazo[1,2a]pyridine-4 -*N*-(2-fluorophenyl)carboxamide (RWJ-51204), a new nonbenzodiazepine anxiolytic. J. Pharmacol. Exp. Ther. *303*, 777-790.

S591. Fahey, J.M., Grassi, J.M., Reddi, J.M., and Greenblatt, D.J. (2006). Acute zolpidem administration produces pharmacodynamic and receptor occupancy changes at similar doses. Pharmacol. Biochem. Behav. *83*, 21-27.

S592. Fahey, J.M., Pritchard, G.A., Pratt, J.S., Shader, R.I., and Greenblatt, D.J. (1999). Lorazepam attenuates the behavioral effects of dizocilpine. Pharmacol. Biochem. Behav. *62*, 103-110.

S593. Hascoet, M., Bourin, M., and Couetoux du Tertre, A. (1997). Influence of prior experience on mice behavior using the four-plate test. Pharmacol. Biochem. Behavior *58*, 1131-1138.

S594. Milman, A., Weizman, R., Rigai, T., Rice, K.C., and Pick, C.G. (2006). Behavioral effects of opioid subtypes compared with benzodiazepines in the staircase paradigm. Behav. Brain Res. *170*, 141-147.

S595. Smith, S.S., Ruderman, Y., Frye, C., Homanics, G., and Yuan, M. (2006). Steroid withdrawal in the mouse results in anxiogenic effects of 3α,5β-THP: a possible model of premenstrual dysphoric disorder. Psychopharmacology (Berl.) *186*, 323-333.

S596. Becker, H.C., and Veatch, L.M. (2002). Effects of lorazepam treatment for multiple ethanol withdrawals in mice. Alcohol. Clin. Exp. Res. *26*, 371-380.

S597. Diviney, M., Reynolds, J.P., and Henshall, D.C. (2015). Comparison of short-term effects of midazolam and lorazepam in the intra-amygdala kainic acid model of status epilepticus in mice. Epilepsy Behav. *51*, 191-198.

S598. Engel, T., Gomez-Villafuertes, R., Tanaka, K., Mesuret, G., Sanz-Rodriguez, A., Garcia-Huerta, P., Miras-Portugal, M.T., Henshall, D.C., and Diaz-Hernandez, M. (2012). Seizure suppression and neuroprotection by targeting the purinergic P2X7 receptor during status epilepticus in mice. FASEB J. *26,* 1616-1628.

S599. Lister, R.G., and Nutt, D.J. (1986). Mice and rats are sensitized to the proconvulsant action of a benzodiazepine-receptor inverse agonist (FG 7142) following a single dose of lorazepam. Brain Res. *379,* 364-366.

S600. Shinoda, S., Araki, T., Lan, J.Q., Schindler, C.K., Simon, R.P., Taki, W., and Henshall, D.C. (2004). Development of a model of seizure-induced hippocampal injury with features of programmed cell death in the BALB/c mouse. J. Neurosci. Res. *76,* 121-128.

S601. Veatch, L.M., and Becker, H.C. (2005). Lorazepam and MK-801 effects on behavioral and electrographic indices of alcohol withdrawal sensitization. Brain Res. *1065,* 92-106.

S602. Souri, E., Sharifzadeh, M., Farsam, H., and Gharavi, N. (1999). Muscle relaxant activity of methocarbamol enantiomers in mice. J. Pharm. Pharmacol. *51,* 853-855.

S603. Beaulieu, J.M., Sotnikova, T.D., Gainetdinov, R.R., and Caron, M.G. (2006). Paradoxical striatal cellular signaling responses to psychostimulants in hyperactive mice. J. Biol. Chem. *281,* 32072-32080.

S604. Carrey, N., McFadyen, M.P., and Brown, R.E. (2000). Effects of subchronic methylphenidate hydrochloride administration on the locomotor and exploratory behavior of prepubertal mice. J. Child Adolesc. Psychopharmacol. *10,* 277-286.

S605. Drerup, J.M., Hayashi, K., Cui, H., Mettlach, G.L., Long, M.A., Marvin, M., Sun, X., Goldberg, M.S., Lutter, M., and Bibb, J.A. (2010). Attention-deficit/hyperactivity phenotype in mice lacking the cyclin-dependent kinase 5 cofactor p35. Biol. Psychiatry *68,* 1163-1171.

S606. Flood, D.G., Zuvich, E., Marino, M.J., and Gasior, M. (2010). The effects of *d*-amphetamine, methylphenidate, sydnocarb, and caffeine on prepulse inhibition of the startle reflex in DBA/2 mice. Psychopharmacology (Berl.) *211,* 325-336.

S607. Herrik, K.F., Redrobe, J.P., Holst, D., Hougaard, C., Sandager-Nielsen, K., Nielsen, A.N., Ji, H., Holst, N.M., Rasmussen, H.B., Nielsen, E.O., *et al.* (2012). CyPPA, a positive SK3/SK2 modulator, reduces activity of dopaminergic neurons, inhibits dopamine release, and counteracts hyperdopaminergic behaviors induced by methylphenidate. Front. Pharmacol. *3,* 11.

S608. Ihalainsen, J.A., Tanila, H., Scheinin, M., and Riekkinen, P., Jr. (2001). α_{2C}-Adrenoceptors modulate the effect of methylphenidate on response rate and discrimination accuracy in an operant test. Brain Res. Bull. *54,* 553-557.

S609. Ishisaka, M., Kakefuda, K., Oyagi, A., Ono, Y., Tsuruma, K., Shimazawa, M., Kitaichi, K., and Hara, H. (2012). Diacylglycerol kinase beta knockout mice exhibit attention-deficit behavior and an abnormal response on methylphenidate-induced hyperactivity. PLoS One *7*, e37058.

S610. Itzhak, Y., and Martin, J.L. (2002). Effect of the neuronal nitric oxide synthase inhibitor 7-nitroindazole on methylphenidate-induced hyperlocomotion in mice. Behav. Pharmacol. *13*, 81-86.

S611. Kaczmarczyk, M.M., Machaj, A.S., Chiu, G.S., Lawson, M.A., Gainey, S.J., York, J.M., Meling, D.D., Martin, S.A., Kwakwa, K.A., Newman, A.F., *et al.* (2013). Methylphenidate prevents high-fat diet (HFD)-induced learning/memory impairment in juvenile mice. Psychoneuroendocrinology *38*, 1553-1564.

S612. McFadyen, M.P., Brown, R.E., and Carrey, N. (2002). Subchronic methylphenidate administration has no effect on locomotion, emotional behavior, or water maze learning in prepubertal mice. Dev Psychobiol *41*, 123-132.

S613. Niimi, K., Nishioka, C., Miyamoto, T., Takahashi, E., Miyoshi, I., Itakura, C., and Yamashita, T. (2011). Impairment of neuropsychological behaviors in ganglioside GM3-knockout mice. Biochem. Biophys. Res. Commun. *406*, 524-528.

S614. Ouchi, H., Ono, K., Murakami, Y., and Matsumoto, K. (2013). Social isolation induces deficit of latent learning performance in mice: a putative animal model of attention deficit/hyperactivity disorder. Behav. Brain Res. *238*, 146-153.

S615. Rhodes, J.S., and Garland, T. (2003). Differential sensitivity to acute administration of Ritalin, apomorphine, SCH 23390, but not raclopride in mice selectively bred for hyperactive wheel-running behavior. Psychopharmacology (Berl.) *167*, 242-250.

S616. Siesser, W.B., Cheng, S.Y., and McDonald, M.P. (2005). Hyperactivity, impaired learning on a vigilance task, and a differential response to methylphenidate in the TRβPV knock-in mouse. Psychopharmacology (Berl.) *181*, 653-663.

S617. Umemori, H., Ogura, H., Tozawa, N., Mikoshiba, K., Nishizumi, H., and Yamamoto, T. (2003). Impairment of *N*-methyl-D-aspartate receptor-controlled motor activity in LYN-deficient mice. Neuroscience *118*, 709-713.

S618. Yamashita, M., Fukushima, S., Shen, H.W., Hall, F.S., Uhl, G.R., Numachi, Y., Kobayashi, H., and Sora, I. (2006). Norepinephrine transporter blockade can normalize the prepulse inhibition deficits found in dopamine transporter knockout mice. Neuropsychopharmacology *31*, 2132-2139.

S619. Yamashita, M., Sakakibara, Y., Hall, F.S., Numachi, Y., Yoshida, S., Kobayashi, H., Uchiumi, O., Uhl, G.R., Kasahara, Y., and Sora, I. (2013). Impaired cliff avoidance reaction in dopamine transporter knockout mice. Psychopharmacology (Berl.) *227*, 741-749.

S620. Zhu, J., Lee, K.P., Spencer, T.J., Biederman, J., and Bhide, P.G. (2014). Transgenerational transmission of hyperactivity in a mouse model of ADHD. J Neurosci. *34*, 2768-2773.

S621. Zhu, J., Zhang, X., Xu, Y., Spencer, T.J., Biederman, J., and Bhide, P.G. (2012). Prenatal nicotine exposure mouse model showing hyperactivity, reduced cingulate cortex volume, reduced dopamine turnover, and responsiveness to oral methylphenidate treatment. J. Neurosci. *32*, 9410-9418.

S622. Kubera, M., Roman, A., Basta-Kaim, A., Budziszewska, B., Zajicova, A., Holan, V., Rogoz, Z., Skuza, G., Leskiewicz, M., Regulska, M., *et al.* (2006). Effect of acute and repeated treatment with mirtazapine on the immunity of noradrenaline transporter knockout C57BL/6J mice. Pharmacol. Biochem. Behav. *85*, 813-819.

S623. Muguruza, C., Rodriguez, F., Rozas, I., Meana, J.J., Uriguen, L., and Callado, L.F. (2013). Antidepressant-like properties of three new α_2-adrenoceptor antagonists. Neuropharmacology *65*, 13-19.

S624. Rogoz, Z. (2010). Effects of co-treatment with mirtazapine and low doses of risperidone on immobility time in the forced swimming test in mice. Pharmacol. Rep. *62*, 1191-1196.

S625. Abdelhamid, E.E., Sultana, M., Portoghese, P.S., and Takemori, A.E. (1991). Selective blockage of delta opioid receptors prevents the development of morphine tolerance and dependence in mice. J. Pharmacol. Exp. Ther. *258*, 299-303.

S626. Bilsky, E.J., Calderon, S.N., Wang, T., Bernstein, R.N., Davis, P., Hruby, V.J., McNutt, R.W., Rothman, R.B., Rice, K.C., and Porreca, F. (1995). SNC 80, a selective, nonpeptidic and systemically active opioid delta agonist. J. Pharmacol. Exp. Ther. *273*, 359-366.

S627. Bohn, L.M., Gainetdinov, R.R., Lin, F.T., Lefkowitz, R.J., and Caron, M.G. (2000). μ-Opioid receptor desensitization by β-arrestin-2 determines morphine tolerance but not dependence. Nature *408*, 720-723.

S628. Bohn, L.M., Lefkowitz, R.J., Gainetdinov, R.R., Peppel, K., Caron, M.G., and Lin, F.T. (1999). Enhanced morphine analgesia in mice lacking β-arrestin 2. Science *286*, 2495-2498.

S629. Chesher, G.B., and Chan, B. (1977). Footshock induced analgesia in mice: its reversal by naloxone and cross tolerance with morphine. Life Sci. *21*, 1569-1574.

S630. Correa, C.R., and Calixto, J.B. (1993). Evidence for participation of B_1 and B_2 kinin receptors in formalin-induced nociceptive response in the mouse. Br. J. Pharmacol. *110*, 193-198.

S631. Garret, C., Carruette, A., Fardin, V., Moussaoui, S., Peyronel, J.F., Blanchard, J.C., and Laduron, P.M. (1991). Pharmacological properties of a potent and selective nonpeptide substance P antagonist. Proc. Natl. Acad. Sci. U.S.A. *88*, 10208-10212.

S632. Honore, P., Rogers, S.D., Schwei, M.J., Salak-Johnson, J.L., Luger, N.M., Sabino, M.C., Clohisy, D.R., and Mantyh, P.W. (2000). Murine models of inflammatory, neuropathic and cancer pain each generates a unique set of neurochemical changes in the spinal cord and sensory neurons. Neuroscience *98*, 585-598.

S633. Jiang, Q., Takemori, A.E., Sultana, M., Portoghese, P.S., Bowen, W.D., Mosberg, H.I., and Porreca, F. (1991). Differential antagonism of opioid delta antinociception by [D-Ala2,Leu5,Cys6]enkephalin and naltrindole 5'-isothiocyanate: evidence for delta receptor subtypes. J. Pharmacol. Exp. Ther. *257*, 1069-1075.

S634. Kolesnikov, Y.A., Pick, C.G., Ciszewska, G., and Pasternak, G.W. (1993). Blockade of tolerance to morphine but not to kappa opioids by a nitric oxide synthase inhibitor. Proc. Natl. Acad. Sci. U.S.A. *90*, 5162-5166.

S635. Ledent, C., Valverde, O., Cossu, G., Petitet, F., Aubert, J.F., Beslot, F., Bohme, G.A., Imperato, A., Pedrazzini, T., Roques, B.P., *et al.* (1999). Unresponsiveness to cannabinoids and reduced addictive effects of opiates in CB_1 receptor knockout mice. Science *283*, 401-404.

S636. Loh, H.H., Liu, H.C., Cavalli, A., Yang, W., Chen, Y.F., and Wei, L.N. (1998). μ Opioid receptor knockout in mice: effects on ligand-induced analgesia and morphine lethality. Brain Res. Mol. Brain Res. *54*, 321-326.

S637. Matthes, H.W., Maldonado, R., Simonin, F., Valverde, O., Slowe, S., Kitchen, I., Befort, K., Dierich, A., Le Meur, M., Dolle, P., *et al.* (1996). Loss of morphine-induced analgesia, reward effect and withdrawal symptoms in mice lacking the μ-opioid-receptor gene. Nature *383*, 819-823.

S638. Oliverio, A., and Castellano, C. (1974). Genotype-dependent sensitivity and tolerance to morphine and heroin: dissociation between opiate-induced running and analgesia in the mouse. Psychopharmacologia *39*, 13-22.

S639. Raffa, R.B., Friderichs, E., Reimann, W., Shank, R.P., Codd, E.E., and Vaught, J.L. (1992). Opioid and nonopioid components independently contribute to the mechanism of action of tramadol, an 'atypical' opioid analgesic. J. Pharmacol. Exp. Ther. *260*, 275-285.

S640. Rubinstein, M., Mogil, J.S., Japon, M., Chan, E.C., Allen, R.G., and Low, M.J. (1996). Absence of opioid stress-induced analgesia in mice lacking β-endorphin by site-directed mutagenesis. Proc. Natl. Acad. Sci. U.S.A. *93*, 3995-4000.

S641. Scherrer, G., Imamachi, N., Cao, Y.Q., Contet, C., Mennicken, F., O'Donnell, D., Kieffer, B.L., and Basbaum, A.I. (2009). Dissociation of the opioid receptor mechanisms that control mechanical and heat pain. Cell *137*, 1148-1159.

S642. Schuller, A.G., King, M.A., Zhang, J., Bolan, E., Pan, Y.X., Morgan, D.J., Chang, A., Czick, M.E., Unterwald, E.M., Pasternak, G.W., and Pintar, J.E. (1999). Retention of heroin and morphine-6 beta-glucuronide analgesia in a new line of mice lacking exon 1 of MOR-1. Nat. Neurosci. *2*, 151-156.

S643. Simonin, F., Valverde, O., Smadja, C., Slowe, S., Kitchen, I., Dierich, A., Le Meur, M., Roques, B.P., Maldonado, R., and Kieffer, B.L. (1998). Disruption of the κ-opioid receptor gene in mice enhances sensitivity to chemical visceral pain, impairs pharmacological actions of the selective κ-agonist U-50,488H and attenuates morphine withdrawal. EMBO J. *17*, 886-897.

S644. Sofuoglu, M., Portoghese, P.S., and Takemori, A.E. (1991). Differential antagonism of delta opioid agonists by naltrindole and its benzofuran analog (NTB) in mice: evidence for delta opioid receptor subtypes. J. Pharmacol. Exp. Ther. *257*, 676-680.

S645. Sora, I., Takahashi, N., Funada, M., Ujike, H., Revay, R.S., Donovan, D.M., Miner, L.L., and Uhl, G.R. (1997). Opiate receptor knockout mice define μ receptor roles in endogenous nociceptive responses and morphine-induced analgesia. Proc. Natl. Acad. Sci. U.S.A. *94*, 1544-1549.

S646. Stone, L.S., MacMillan, L.B., Kitto, K.F., Limbird, L.E., and Wilcox, G.L. (1997). The α_{2A} adrenergic receptor subtype mediates spinal analgesia evoked by α_2 agonists and is necessary for spinal adrenergic-opioid synergy. J. Neurosci. *17*, 7157-7165.

S647. Zadina, J.E., Hackler, L., Ge, L.J., and Kastin, A.J. (1997). A potent and selective endogenous agonist for the μ-opiate receptor. Nature *386*, 499-502.

S648. Zhu, Y., King, M.A., Schuller, A.G., Nitsche, J.F., Reidl, M., Elde, R.P., Unterwald, E., Pasternak, G.W., and Pintar, J.E. (1999). Retention of supraspinal delta-like analgesia and loss of morphine tolerance in *δ opioid receptor* knockout mice. Neuron *24*, 243-252.

S649. Beardsley, P.M., Aceto, M.D., Cook, C.D., Bowman, E.R., Newman, J.L., and Harris, L.S. (2004). Discriminative stimulus, reinforcing, physical dependence, and antinociceptive effects of oxycodone in mice, rats, and rhesus monkeys. Exp. Clin. Psychopharmacol. *12*, 163-172.

S650. Bhalla, S., Ali, I., Lee, H., Andurkar, S.V., and Gulati, A. (2013). Potentiation of oxycodone antinociception in mice by agmatine and BMS182874 via an imidazoline I_2 receptor-mediated mechanism. Pharmacol. Biochem. Behav. *103*, 550-560.

S651. Bhalla, S., Rapolaviciute, V., and Gulati, A. (2011). Determination of α_2-adrenoceptor and imidazoline receptor involvement in augmentation of morphine and oxycodone analgesia by agmatine and BMS182874. Eur. J. Pharmacol. *651*, 109-121.

S652. Bhalla, S., Zhang, Z., Patterson, N., and Gulati, A. (2010). Effect of endothelin-A receptor antagonist on mu, delta and kappa opioid receptor-mediated antinociception in mice. Eur. J. Pharmacol. *635*, 62-71.

S653. Emery, M.A., Bates, M.L., Wellman, P.J., and Eitan, S. (2015). Differential effects of oxycodone, hydrocodone, and morphine on the responses of D2/D3 dopamine receptors. Behav. Brain Res. *284*, 37-41.

S654. Kato, A., Minami, K., Ito, H., Tomii, T., Matsumoto, M., Orita, S., Kihara, T., Narita, M., and Suzuki, T. (2008). Oxycodone-induced analgesic effects in a bone cancer pain model in mice. Oncology *74 Suppl 1*, 55-60.

S655. Madia, P.A., Dighe, S.V., Sirohi, S., Walker, E.A., and Yoburn, B.C. (2009). Dosing protocol and analgesic efficacy determine opioid tolerance in the mouse. Psychopharmacology (Berl.) *207*, 413-422.

S656. Nakamura, A., Fujita, M., Ono, H., Hongo, Y., Kanbara, T., Ogawa, K., Morioka, Y., Nishiyori, A., Shibasaki, M., Mori, T., *et al.* (2014). G protein-gated inwardly rectifying potassium ($K_{IR}3$) channels play a primary role in the antinociceptive effect of oxycodone, but not morphine, at supraspinal sites. Br. J. Pharmacol. *171*, 253-264.

S657. Nakamura, A., Hasegawa, M., Minami, K., Kanbara, T., Tomii, T., Nishiyori, A., Narita, M., Suzuki, T., and Kato, A. (2013). Differential activation of the μ-opioid receptor by oxycodone and morphine in pain-related brain regions in a bone cancer pain model. Br. J. Pharmacol. *168*, 375-388.

S658. Nakazawa, Y., Okura, T., Shimomura, K., Terasaki, T., and Deguchi, Y. (2010). Drug-drug interaction between oxycodone and adjuvant analgesics in blood-brain barrier transport and antinociceptive effect. J. Pharm. Sci. *99*, 467-474.

S659. Narita, M., Imai, S., Nakamura, A., Ozeki, A., Asato, M., Rahmadi, M., Sudo, Y., Hojo, M., Uezono, Y., Devi, L.A., *et al.* (2013). Possible involvement of prolonging spinal μ-opioid receptor desensitization in the development of antihyperalgesic tolerance to μ-opioids under a neuropathic pain-like state. Addict Biol *18*, 614-622.

S660. Narita, M., Nakamura, A., Ozaki, M., Imai, S., Miyoshi, K., Suzuki, M., and Suzuki, T. (2008). Comparative pharmacological profiles of morphine and oxycodone under a neuropathic pain-like state in mice: evidence for less sensitivity to morphine. Neuropsychopharmacology *33*, 1097-1112.

S661. Neelakantan, H., and Walker, E.A. (2012). Temperature-dependent enhancement of the antinociceptive effects of opioids in combination with gabapentin in mice. Eur. J. Pharmacol. *686*, 55-59.

S662. Nozaki, C., and Kamei, J. (2007). Involvement of mu1-opioid receptor on oxycodone-induced antinociception in diabetic mice. Eur. J. Pharmacol. *560*, 160-162.

S663. Nozaki, C., Saitoh, A., and Kamei, J. (2006). Characterization of the antinociceptive effects of oxycodone in diabetic mice. Eur. J. Pharmacol. *535*, 145-151.

S664. Nozaki, C., Saitoh, A., Tamura, N., and Kamei, J. (2005). Antinociceptive effect of oxycodone in diabetic mice. Eur. J. Pharmacol. *524*, 75-79.

S665. Pawar, M., Kumar, P., Sunkaraneni, S., Sirohi, S., Walker, E.A., and Yoburn, B.C. (2007). Opioid agonist efficacy predicts the magnitude of tolerance and the regulation of μ-opioid receptors and dynamin-2. Eur. J. Pharmacol. *563*, 92-101.

S666. Sacerdote, P., Manfredi, B., Mantegazza, P., and Panerai, A.E. (1997). Antinociceptive and immunosuppressive effects of opiate drugs: a structure-related activity study. Br. J. Pharmacol. *121*, 834-840.

S667. Sanchez-Fernandez, C., Montilla-Garcia, A., Gonzalez-Cano, R., Nieto, F.R., Romero, L., Artacho-Cordon, A., Montes, R., Fernandez-Pastor, B., Merlos, M., Baeyens, J.M., *et al.* (2014). Modulation of peripheral μ-opioid analgesia by σ_1 receptors. J. Pharmacol. Exp. Ther. *348*, 32-45.

S668. Swedberg, M.D. (1994). The mouse grid-shock analgesia test: pharmacological characterization of latency to vocalization threshold as an index of antinociception. J. Pharmacol. Exp. Ther. *269*, 1021-1028.

S669. Aragao, G.F., Carneiro, L.M., Junior, A.P., Vieira, L.C., Bandeira, P.N., Lemos, T.L., and Viana, G.S. (2006). A possible mechanism for anxiolytic and antidepressant effects of alpha- and beta-amyrin from *Protium heptaphyllum* (Aubl.) March. Pharmacol. Biochem. Behav. *85*, 827-834.

S670. Clenet, F., De Vos, A., and Bourin, M. (2001). Involvement of 5-HT_{2C} receptors in the anti-immobility effects of antidepressants in the forced swimming test in mice. Eur. Neuropsychopharmacol. *11*, 145-152.

S671. David, D.J., Nic Dhonnchadha, B.A., Jolliet, P., Hascoet, M., and Bourin, M. (2001). Are there gender differences in the temperature profile of mice after acute antidepressant administration and exposure to two animal models of depression? Behav. Brain Res. *119*, 203-211.

S672. Elizalde, N., Gil-Bea, F.J., Ramirez, M.J., Aisa, B., Lasheras, B., Del Rio, J., and Tordera, R.M. (2008). Long-lasting behavioral effects and recognition memory deficit induced by chronic mild stress in mice: effect of antidepressant treatment. Psychopharmacology (Berl.) *199*, 1-14.

S673. Gai, B.M., Bortolatto, C.F., Heck, S.O., Stein, A.L., Duarte, M.M., Zeni, G., and Nogueira, C.W. (2014). An organoselenium compound improves behavioral, endocrinal and neurochemical changes induced by corticosterone in mice. Psychopharmacology (Berl.) *231*, 2119-2130.

S674. Ghasemi, M., Montaser-Kouhsari, L., Shafaroodi, H., Nezami, B.G., Ebrahimi, F., and Dehpour, A.R. (2009). NMDA receptor/nitrergic system blockage augments antidepressant-like effects of paroxetine in the mouse forced swimming test. Psychopharmacology (Berl.) *206*, 325-333.

S675. Guilloux, J.P., David, D.J., Guiard, B.P., Chenu, F., Reperant, C., Toth, M., Bourin, M., and Gardier, A.M. (2006). Blockade of 5-HT_{1A} receptors by (±)-pindolol potentiates cortical 5-HT outflow, but not antidepressant-like activity of paroxetine: microdialysis and behavioral approaches in 5-HT_{1A} receptor knockout mice. Neuropsychopharmacology *31*, 2162-2172.

S676. Guilloux, J.-P., David, D.J.P., Xia, L., Nguyen, H.T., Rainer, Q., Guiard, B.P., Repérant, C., Deltheil, T., Toth, M., Hen, R., and Gardier, A.M. (2011). Characterization of 5-$HT_{1A/1B}$−/− mice: An animal model sensitive to anxiolytic treatments. Neuropharmacology *61*, 478-488.

S677. Guzzetti, S., Calcagno, E., Canetta, A., Sacchetti, G., Fracasso, C., Caccia, S., Cervo, L., and Invernizzi, R.W. (2008). Strain differences in paroxetine-induced reduction of immobility time in the forced swimming test in mice: role of serotonin. Eur. J. Pharmacol. *594*, 117-124.

S678. Hirano, K., Kato, Y., Uchida, S., Sugimoto, Y., Yamada, J., Umegaki, K., and Yamada, S. (2004). Effects of oral administration of extracts of *Hypericum perforatum* (St John's wort) on brain serotonin transporter, serotonin uptake and behaviour in mice. J. Pharm. Pharmacol. *56*, 1589-1595.

S679. Krass, M., Runkorg, K., Wegener, G., and Volke, V. (2010). Nitric oxide is involved in the regulation of marble-burying behavior. Neurosci. Lett. *480*, 55-58.

S680. Liu, X., Peprah, D., and Gershenfeld, H.K. (2003). Tail-suspension induced hyperthermia: a new measure of stress reactivity. J. Psychiatr. Res. *37*, 249-259.

S681. Millan, M.J., Dekeyne, A., Gobert, A., Mannoury la Cour, C., Brocco, M., Rivet, J.M., Di Cara, B., Lejeune, F., Cremers, T.I., Flik, G., *et al.* (2010). S41744, a dual neurokinin $(NK)_1$ receptor antagonist and serotonin (5-HT) reuptake inhibitor with potential antidepressant properties: a comparison to aprepitant (MK869) and paroxetine. Eur. Neuropsychopharmacol. *20*, 599-621.

S682. O'Neill, M.F., Fernandez, A.G., and Palacios, J.M. (1996). GR 127935 blocks the locomotor and antidepressant-like effects of RU 24969 and the action of antidepressants in the mouse tail suspension test. Pharmacol. Biochem. Behav. *53*, 535-539.

S683. Ohgi, Y., Futamura, T., Kikuchi, T., and Hashimoto, K. (2013). Effects of antidepressants on alternations in serum cytokines and depressive-like behavior in mice after lipopolysaccharide administration. Pharmacol. Biochem. Behav. *103*, 853-859.

S684. Perrault, G., Morel, E., Zivkovic, B., and Sanger, D.J. (1992). Activity of litoxetine and other serotonin uptake inhibitors in the tail suspension test in mice. Pharmacol. Biochem. Behav. *42*, 45-47.

S685. Redrobe, J.P., Bourin, M., Colombel, M.C., and Baker, G.B. (1998). Psychopharmacological profile of the selective serotonin reuptake inhibitor, paroxetine: implication of noradrenergic and serotonergic mechanisms. J. Psychopharmacol. (Oxford) *12*, 348-355.

S686. Sillaber, I., Panhuysen, M., Henniger, M.S., Ohl, F., Kuhne, C., Putz, B., Pohl, T., Deussing, J.M., Paez-Pereda, M., and Holsboer, F. (2008). Profiling of behavioral changes and hippocampal gene expression in mice chronically treated with the SSRI paroxetine. Psychopharmacology (Berl.) *200*, 557-572.

S687. Thoeringer, C.K., Erhardt, A., Sillaber, I., Mueller, M.B., Ohl, F., Holsboer, F., and Keck, M.E. (2010). Long-term anxiolytic and antidepressant-like behavioural effects of tiagabine, a selective GABA transporter-1 (GAT-1) inhibitor, coincide with a decrease in HPA system activity in C57BL/6 mice. J. Psychopharmacol. (Oxford) *24*, 733-743.

S688. Vaugeois, J.M., Passera, G., Zuccaro, F., and Costentin, J. (1997). Individual differences in response to imipramine in the mouse tail suspension test. Psychopharmacology (Berl.) *134*, 387-391.

S689. Beijamini, V., and Andreatini, R. (2003). Effects of *Hypericum perforatum* and paroxetine in the mouse defense test battery. Pharmacol. Biochem. Behav. *74*, 1015-1024.

S690. Nic Dhonnchadha, B.A., Ripoll, N., Clenet, F., Hascoet, M., and Bourin, M. (2005). Implication of 5-HT_2 receptor subtypes in the mechanism of action of antidepressants in the four plates test. Psychopharmacology (Berl.) *179*, 418-429.

S691. Goeldner, F.O., Pigatto, G., Ribeiro, A.F., Machado, H.B., and Boerngen-Lacerda, R. (2005). Influence of fluoxetine and paroxetine in behavioral sensitization induced by ethanol in mice. Pharmacol. Biochem. Behav. *82*, 388-396.

S692. Hascoet, M., Bourin, M., Colombel, M.C., Fiocco, A.J., and Baker, G.B. (2000). Anxiolytic-like effects of antidepressants after acute administration in a four-plate test in mice. Pharmacol. Biochem. Behav. *65*, 339-344.

S693. Hascoet, M., Bourin, M., and Nic Dhonnchadha, B.A. (2000). The influence of buspirone, and its metabolite 1-PP, on the activity of paroxetine in the mouse light/dark paradigm and four plates test. Pharmacol. Biochem. Behavior *67*, 45-53.

S694. Jennings, K.A., Loder, M.K., Sheward, W.J., Pei, Q., Deacon, R.M., Benson, M.A., Olverman, H.J., Hastie, N.D., Harmar, A.J., Shen, S., and Sharp, T. (2006). Increased expression of the 5-HT transporter confers a low-anxiety phenotype linked to decreased 5-HT transmission. J. Neurosci. *26*, 8955-8964.

S695. Masse, F., Hascoet, M., and Bourin, M. (2005). α_2-Adrenergic agonists antagonise the anxiolytic-like effect of antidepressants in the four-plate test in mice. Behav. Brain Res. *164*, 17-28.

S696. Matsuzawa-Yanagida, K., Narita, M., Nakajima, M., Kuzumaki, N., Niikura, K., Nozaki, H., Takagi, T., Tamai, E., Hareyama, N., Terada, M., *et al.* (2008). Usefulness of antidepressants for improving the neuropathic pain-like state and pain-induced anxiety through actions at different brain sites. Neuropsychopharmacology *33*, 1952-1965.

S697. Ripoll, N., Nic Dhonnchadha, B.A., Sebille, V., Bourin, M., and Hascoet, M. (2005). The four-plates test-retest paradigm to discriminate anxiolytic effects. Psychopharmacology (Berl.) *180*, 73-83.

S698. Scharf, S.H., Sterlemann, V., Liebl, C., Muller, M.B., and Schmidt, M.V. (2013). Chronic social stress during adolescence: interplay of paroxetine treatment and ageing. Neuropharmacology *72*, 38-46.

S699. Schmidt, M.V., Sterlemann, V., Ganea, K., Liebl, C., Alam, S., Harbich, D., Greetfeld, M., Uhr, M., Holsboer, F., and Muller, M.B. (2007). Persistent neuroendocrine and behavioral effects of a novel, etiologically relevant mouse paradigm for chronic social stress during adolescence. Psychoneuroendocrinology *32*, 417-429.

S700. Toth, I., Neumann, I.D., and Slattery, D.A. (2012). Social fear conditioning: a novel and specific animal model to study social anxiety disorder. Neuropsychopharmacology *37*, 1433-1443.

S701. Troelsen, K.B., Nielsen, E.O., and Mirza, N.R. (2005a). Chronic treatment with duloxetine is necessary for an anxiolytic-like response in the mouse zero maze: the role of the serotonin transporter. Psychopharmacology (Berl.) *181*, 741-750.

S702. Wang, H., Zuo, D., He, B., Qiao, F., Zhao, M., and Wu, Y. (2012). Conditioned fear stress combined with single-prolonged stress: a new PTSD mouse model. Neurosci. Res. *73*, 142-152.

S703. Casarotto, P.C., Gomes, F.V., Resstel, L.B., and Guimaraes, F.S. (2010). Cannabidiol inhibitory effect on marble-burying behaviour: involvement of CB1 receptors. Behav. Pharmacol. *21*, 353-358.

S704. Egashira, N., Harada, S., Okuno, R., Matsushita, M., Nishimura, R., Mishima, K., Iwasaki, K., Orito, K., and Fujiwara, M. (2007). Involvement of the $sigma_1$ receptor in inhibiting activity of fluvoxamine on marble-burying behavior: comparison with paroxetine. Eur. J. Pharmacol. *563*, 149-154.

S705. Egashira, N., Okuno, R., Shirakawa, A., Nagao, M., Mishima, K., Iwasaki, K., Oishi, R., and Fujiwara, M. (2012). Role of 5-hydroxytryptamine$_{2C}$ receptors in marble-burying behavior in mice. Biol. Pharm. Bull. *35*, 376-379.

S706. Saadat, K.S., Elliott, J.M., Colado, M.I., and Green, A.R. (2006). The acute and long-term neurotoxic effects of MDMA on marble burying behaviour in mice. J. Psychopharmacol. (Oxford) *20*, 264-271.

S707. Steiner, M.A., Wanisch, K., Monory, K., Marsicano, G., Borroni, E., Bachli, H., Holsboer, F., Lutz, B., and Wotjak, C.T. (2008). Impaired cannabinoid receptor type 1 signaling interferes with stress-coping behavior in mice. Pharmacogenomics J. *8*, 196-208.

S708. Akamine, T., Koyanagi, S., Kusunose, N., Hashimoto, H., Taniguchi, M., Matsunaga, N., and Ohdo, S. (2015). Dosing time-dependent changes in the analgesic effect of pregabalin on diabetic neuropathy in mice. J. Pharmacol. Exp. Ther. *354*, 65-72.

S709. Ami, N., Okamoto, K., and Oshima, H. (2012). Analgesic effect of magnetic stimulation on paclitaxel-induced peripheral neuropathic pain in mice. Brain Res. *1461*, 24-29.

S710. Babu, A., Prasanth, K.G., and Balaji, B. (2015). Effect of curcumin in mice model of vincristine-induced neuropathy. Pharm. Biol. *53*, 838-848.

S711. de Souza, A.H., da Costa Lopes, A.M., Castro, C.J., Jr., Pereira, E.M., Klein, C.P., da Silva, C.A., Jr., da Silva, J.F., Ferreira, J., and Gomez, M.V. (2014). The effects of Phα1β, a spider toxin, calcium channel blocker, in a mouse fibromyalgia model. Toxicon. *81*, 37-42.

S712. Enomoto, R., Tsukamoto, M., Shimoshige, Y., Aoki, T., and Matsuoka, N. (2013). New index of pain triggered by spinal activation of voltage-dependent sodium channels. J. Anesth. *27*, 939-941.

S713. Inoue, N., Ito, S., Tajima, K., Nogawa, M., Takahashi, Y., Sasagawa, T., Nakamura, A., and Kyoi, T. (2009). Etodolac attenuates mechanical allodynia in a mouse model of neuropathic pain. J. Pharmacol. Sci. *109*, 600-605.

S714. Klein, C.P., Sperotto, N.D., Maciel, I.S., Leite, C.E., Souza, A.H., and Campos, M.M. (2014). Effects of D-series resolvins on behavioral and neurochemical changes in a fibromyalgia-like model in mice. Neuropharmacology *86*, 57-66.

S715. Peres Klein, C., Rodrigues Cintra, M., Binda, N., Montijo Diniz, D., Gomez, M.V., Souto, A.A., and de Souza, A.H. (2016). Coadministration of Resveratrol and Rice Oil Mitigates Nociception and Oxidative State in a Mouse Fibromyalgia-Like Model. Pain Res Treat *2016*, 3191638.

S716. Kremer, M., Yalcin, I., Nexon, L., Wurtz, X., Ceredig, R.A., Daniel, D., Hawkes, R.A., Salvat, E., and Barrot, M. (2016). The antiallodynic action of pregabalin in neuropathic pain is independent from the opioid system. Mol Pain *12*: 1-12.

S717. Linglu, D., Yuxiang, L., Yaqiong, X., Ru, Z., Lin, M., Shaoju, J., Juan, D., Tao, S., and Jianqiang, Y. (2014). Antinociceptive effect of matrine on vincristine-induced neuropathic pain model in mice. Neurol. Sci. *35*, 815-821.

S718. Mukae, T., Fujita, W., and Ueda, H. (2016). P-glycoprotein inhibitors improve effective dose and time of pregabalin to inhibit intermittent cold stress-induced central pain. J. Pharmacol. Sci. *131*, 64-67.

S719. Paula-Freire, L.I., Molska, G.R., Andersen, M.L., and Carlini, E.L. (2016). *Ocimum gratissimum* Essential Oil and Its Isolated Compounds (Eugenol and Myrcene) Reduce Neuropathic Pain in Mice. Planta Med. *82*, 211-216.

S720. Salat, K., Cios, A., Wyska, E., Salat, R., Mogilski, S., Filipek, B., Wieckowski, K., and Malawska, B. (2014). Antiallodynic and antihyperalgesic activity of 3-[4-(3-trifluoromethyl-phenyl)-piperazin-1-yl]-dihydrofuran-2-one compared to pregabalin in chemotherapy-induced neuropathic pain in mice. Pharmacol. Biochem. Behav. *122*, 173-181.

S721. Salat, K., Witalis, J., Zadrozna, M., Soltys, Z., Nowak, B., Filipek, B., Wieckowski, K., and Malawska, B. (2015). 3-[4-(3-Trifluoromethyl-phenyl)-piperazin-1-yl]-dihydrofuran-2-one and pregabalin attenuate tactile allodynia in the mouse model of chronic constriction injury. Toxicol. Mech. Methods *25*, 514-523.

S722. Salat, R., and Salat, K. (2013). The application of support vector regression for prediction of the antiallodynic effect of drug combinations in the mouse model of streptozocin-induced diabetic neuropathy. Comput Methods Programs Biomed *111*, 330-337.

S723. Salat, R., and Salat, K. (2015). Modeling analgesic drug interactions using support vector regression: a new approach to isobolographic analysis. J Pharmacol Toxicol Methods *71*, 95-102.

S724. Takeuchi, Y., Takasu, K., Ono, H., and Tanabe, M. (2007). Pregabalin, *S*-(+)-3-isobutylgaba, activates the descending noradrenergic system to alleviate neuropathic pain in the mouse partial sciatic nerve ligation model. Neuropharmacology *53*, 842-853.

S725. Tanabe, M., Ono, K., Honda, M., and Ono, H. (2009). Gabapentin and pregabalin ameliorate mechanical hypersensitivity after spinal cord injury in mice. Eur. J. Pharmacol. *609*, 65-68.

S726. Varani, K., Vincenzi, F., Targa, M., Ravani, A., Bastia, E., Storoni, L., Brambilla, S., Almirante, N., and Impagnatiello, F. (2016). Repeated Dosing with NCX1404, a Nitric Oxide-Donating Pregabalin, Re-establishes Normal Nociceptive Responses in Mice with Streptozotocin-Induced Painful Diabetic Neuropathy. J. Pharmacol. Exp. Ther. *357*, 240-247.

S727. Villarinho, J.G., Pinheiro Kde, V., Pinheiro Fde, V., Oliveira, S.M., Machado, P., Martins, M.A., Bonacorso, H.G., Zanatta, N., Fachinetto, R., and Ferreira, J. (2013). The antinociceptive effect of reversible monoamine oxidase-A inhibitors in a mouse neuropathic pain model. Prog. Neuropsychopharmacol. Biol. Psychiatry *44*, 136-142.

S728. Florek-Luszczki, M., Wlaz, A., Zagaja, M., Andres-Mach, M., Kondrat-Wrobel, M.W., and Luszczki, J.J. (2015). Effects of WIN 55,212-2 (a synthetic cannabinoid CB_1 and CB_2 receptor agonist) on the anticonvulsant activity of various novel antiepileptic drugs against 6 Hz-induced psychomotor seizures in mice. Pharmacol. Biochem. Behav. *130*, 53-58.

S729. Lotarski, S., Hain, H., Peterson, J., Galvin, S., Strenkowski, B., Donevan, S., and Offord, J. (2014). Anticonvulsant activity of pregabalin in the maximal electroshock-induced seizure assay in $\alpha_2\delta_1$ (R217A) and $\alpha_2\delta_2$ (R279A) mouse mutants. Epilepsy Res. *108*, 833-842.

S730. Luszczki, J.J. (2010). Interaction of pregabalin with carbamazepine in the mouse maximal electroshock-induced seizure model: a type I isobolographic analysis for non-parallel dose-response relationship curves. Adv Med Sci *55*, 43-52.

S731. Luszczki, J.J., Antkiewicz-Michaluk, L., Raszewski, G., and Czuczwar, S.J. (2010). Interactions of 1-methyl-1,2,3,4-tetrahydroisoquinoline with lamotrigine, oxcarbazepine, pregabalin, and topiramate in the mouse maximal electroshock-induced seizure model: a type I isobolographic analysis. Epilepsy Res. *89*, 207-219.

S732. Luszczki, J.J., Filip, D., and Czuczwar, S.J. (2010). Additive interactions of pregabalin with lamotrigine, oxcarbazepine and topiramate in the mouse maximal electroshock-induced seizure model: a type I isobolographic analysis for non-parallel dose-response relationship curves. Epilepsy Res. *91*, 166-175.

S733. Luszczki, J.J., Jaskolska, A., Dworzanski, W., and Zolkowska, D. (2011). 7-Nitroindazole, but not N^G-nitro-L-arginine, enhances the anticonvulsant activity of pregabalin in the mouse maximal electroshock-induced seizure model. Pharmacol. Rep. *63*, 169-175.

S734. Luszczki, J.J., Wlaz, A., Karwan, S., Florek-Luszczki, M., and Czuczwar, S.J. (2013). Effects of WIN 55,212-2 mesylate on the anticonvulsant action of lamotrigine, oxcarbazepine, pregabalin and topiramate against maximal electroshock-induced seizures in mice. Eur. J. Pharmacol. *720*, 247-254.

S735. Liu, N., Li, Y.X., Gong, S.S., Du, J., Liu, G., Jin, S.J., Zhao, C.J., Niu, Y., Sun, T., and Yu, J.Q. (2016). Antinociceptive effects of gentiopicroside on neuropathic pain induced by chronic constriction injury in mice: a behavioral and electrophysiological study. Can. J. Physiol. Pharmacol. *94*, 769-778.

S736. Zolkowska, D., Kondrat-Wrobel, M.W., Florek-Luszczki, M., and Luszczki, J.J. (2016). Influence of MPEP (a selective mGluR5 antagonist) on the anticonvulsant

action of novel antiepileptic drugs against maximal electroshock-induced seizures in mice. Prog. Neuropsychopharmacol. Biol. Psychiatry *65*, 172-178.

S737. Galeotti, N., Ghelardini, C., and Bartolini, A. (1999a). The role of potassium channels in antihistamine analgesia. Neuropharmacology *38*, 1893-1901.

S738. Ghelardini, C., Galeotti, N., and Bartolini, A. (1998a). No development of tolerance to analgesia by repeated administration of H_1 antagonists. Life Sci. *63*, PL 317-322.

S739. Nascimento, E.B., Jr., Costa, K.A., Bertollo, C.M., Oliveira, A.C., Rocha, L.T., Souza, A.L., Gloria, M.B., Moraes-Santos, T., and Coelho, M.M. (2005). Pharmacological investigation of the nociceptive response and edema induced by venom of the scorpion *Tityus serrulatus*. Toxicon *45*, 585-593.

S740. Oliveira, S.M., Drewes, C.C., Silva, C.R., Trevisan, G., Boschen, S.L., Moreira, C.G., de Almeida Cabrini, D., Da Cunha, C., and Ferreira, J. (2011). Involvement of mast cells in a mouse model of postoperative pain. Eur. J. Pharmacol. *672*, 88-95.

S741. Guan, H.J., Dai, J., and Zhu, X.Z. (2000). Atypical antipsychotic effects of quetiapine fumarate in animal models. Acta Pharmacol. Sin. *21*, 205-210.

S742. Kotagale, N.R., Mendhi, S.M., Aglawe, M.M., Umekar, M.J., and Taksande, B.G. (2013). Evidences for the involvement of sigma receptors in antidepressant like effect of quetiapine in mice. Eur. J. Pharmacol. *702*, 180-186.

S743. Pathak, G., Ibrahim, B.A., McCarthy, S.A., Baker, K., and Kelly, M.P. (2015). Amphetamine sensitization in mice is sufficient to produce both manic- and depressive-related behaviors as well as changes in the functional connectivity of corticolimbic structures. Neuropharmacology *95*, 434-447.

S744. Yan, B., He, J., Xu, H., Zhang, Y., Bi, X., Thakur, S., Gendron, A., Kong, J., and Li, X.M. (2007). Quetiapine attenuates the depressive and anxiolytic-like behavioural changes induced by global cerebral ischemia in mice. Behav. Brain Res. *182*, 36-41.

S745. Duncan, G.E., Moy, S.S., Lieberman, J.A., and Koller, B.H. (2006). Effects of haloperidol, clozapine, and quetiapine on sensorimotor gating in a genetic model of reduced NMDA receptor function. Psychopharmacology (Berl.) *184*, 190-200.

S746. Kinkead, B., Dobner, P.R., Egnatashvili, V., Murray, T., Deitemeyer, N., and Nemeroff, C.B. (2005). Neurotensin-deficient mice have deficits in prepulse inhibition: restoration by clozapine but not haloperidol, olanzapine, or quetiapine. J. Pharmacol. Exp. Ther. *315*, 256-264.

S747. Powell, S.B., Young, J.W., Ong, J.C., Caron, M.G., and Geyer, M.A. (2008). Atypical antipsychotics clozapine and quetiapine attenuate prepulse inhibition deficits in dopamine transporter knockout mice. Behav. Pharmacol. *19*, 562-565.

S748. Tada, M., Shirakawa, K., Matsuoka, N., and Mutoh, S. (2004). Combined treatment of quetiapine with haloperidol in animal models of antipsychotic effect and extrapyramidal side effects: comparison with risperidone and chlorpromazine. Psychopharmacology (Berl.) *176*, 94-100.

S749. Wang, H.N., Liu, G.H., Zhang, R.G., Xue, F., Wu, D., Chen, Y.C., Peng, Y., Peng, Z.W., and Tan, Q.R. (2015). Quetiapine Ameliorates Schizophrenia-Like Behaviors and Protects Myelin Integrity in Cuprizone Intoxicated Mice: The Involvement of Notch Signaling Pathway. Int. J. Neuropsychopharmacol. *19*, 1-12.

S750. Xu, H., Yang, H.J., McConomy, B., Browning, R., and Li, X.M. (2010). Behavioral and neurobiological changes in C57BL/6 mouse exposed to cuprizone: effects of antipsychotics. Front. Behav. Neurosci. *4*, 8.

S751. Tanibuchi, Y., Fujita, Y., Kohno, M., Ishima, T., Takatsu, Y., Iyo, M., and Hashimoto, K. (2009). Effects of quetiapine on phencyclidine-induced cognitive deficits in mice: a possible role of α_1-adrenoceptors. Eur. Neuropsychopharmacol. *19*, 861-867.

S752. Andreasen, J.T., Andersen, K.K., Nielsen, E.O., Mathiasen, L., and Mirza, N.R. (2006). Nicotine and clozapine selectively reverse a PCP-induced deficit of PPI in BALB/cByJ but not NMRI mice: comparison with risperidone. Behav. Brain Res. *167*, 118-127.

S753. Browman, K.E., Komater, V.A., Curzon, P., Rueter, L.E., Hancock, A.A., Decker, M.W., and Fox, G.B. (2004). Enhancement of prepulse inhibition of startle in mice by the H_3 receptor antagonists thioperamide and ciproxifan. Behav. Brain Res. *153*, 69-76.

S754. Delotterie, D., Ruiz, G., Brocard, J., Schweitzer, A., Roucard, C., Roche, Y., Suaud-Chagny, M.F., Bressand, K., and Andrieux, A. (2010). Chronic administration of atypical antipsychotics improves behavioral and synaptic defects of STOP null mice. Psychopharmacology (Berl.) *208*, 131-141.

S755. Dirks, A., Groenink, L., Westphal, K.G., Olivier, J.D., Verdouw, P.M., van der Gugten, J., Geyer, M.A., and Olivier, B. (2003). Reversal of startle gating deficits in transgenic mice overexpressing corticotropin-releasing factor by antipsychotic drugs. Neuropsychopharmacology *28*, 1790-1798.

S756. Duncan, G.E., Moy, S.S., Lieberman, J.A., and Koller, B.H. (2006). Typical and atypical antipsychotic drug effects on locomotor hyperactivity and deficits in sensorimotor gating in a genetic model of NMDA receptor hypofunction. Pharmacol. Biochem. Behav. *85*, 481-491.

S757. Fell, M.J., Svensson, K.A., Johnson, B.G., and Schoepp, D.D. (2008). Evidence for the role of metabotropic glutamate (mGlu)2 not mGlu3 receptors in the preclinical antipsychotic pharmacology of the mGlu2/3 receptor agonist (-)-(1R,4S,5S,6S)-4-

amino-2-sulfonylbicyclo[3.1.0]hexane-4,6-dicarboxylic acid (LY404039). J. Pharmacol. Exp. Ther. *326*, 209-217.

S758. Hannah-Poquette, C., Anderson, G.W., Flaisher-Grinberg, S., Wang, J., Meinerding, T.M., and Einat, H. (2011). Modeling mania: Further validation for Black Swiss mice as model animals. Behav. Brain Res. *223*, 222-226.

S759. Hashimoto, H., Hashimoto, R., Shintani, N., Tanaka, K., Yamamoto, A., Hatanaka, M., Guo, X., Morita, Y., Tanida, M., Nagai, K., *et al.* (2009). Depression-like behavior in the forced swimming test in PACAP-deficient mice: amelioration by the atypical antipsychotic risperidone. J. Neurochem. *110*, 595-602.

S760. Hashimoto, R., Hashimoto, H., Shintani, N., Chiba, S., Hattori, S., Okada, T., Nakajima, M., Tanaka, K., Kawagishi, N., Nemoto, K., *et al.* (2007). Pituitary adenylate cyclase-activating polypeptide is associated with schizophrenia. Mol. Psychiatry *12*, 1026-1032.

S761. Kehne, J.H., Baron, B.M., Carr, A.A., Chaney, S.F., Elands, J., Feldman, D.J., Frank, R.A., van Giersbergen, P.L., McCloskey, T.C., Johnson, M.P., *et al.* (1996). Preclinical characterization of the potential of the putative atypical antipsychotic MDL 100,907 as a potent 5-HT2A antagonist with a favorable CNS safety profile. J. Pharmacol. Exp. Ther. *277*, 968-981.

S762. Kohlhaas, K.L., Bitner, R.S., Gopalakrishnan, M., and Rueter, L.E. (2012). Effects of alpha7 nicotinic acetylcholine receptor agonists on antipsychotic efficacy in a preclinical mouse model of psychosis. Psychopharmacology (Berl.) *220*, 823-833.

S763. McCaughran, J., Jr., Mahjubi, E., Decena, E., and Hitzemann, R. (1997). Genetics, haloperidol-induced catalepsy and haloperidol-induced changes in acoustic startle and prepulse inhibition. Psychopharmacology (Berl.) *134*, 131-139.

S764. Miyamoto, Y., Yamada, K., Noda, Y., Mori, H., Mishina, M., and Nabeshima, T. (2001). Hyperfunction of dopaminergic and serotonergic neuronal systems in mice lacking the NMDA receptor ε_1 subunit. J. Neurosci. *2:* 750-757.

S765. Nagai, H., Egashira, N., Sano, K., Ogata, A., Mizuki, A., Mishima, K., Iwasaki, K., Shoyama, Y., Nishimura, R., and Fujiwara, M. (2006). Antipsychotics improve Δ^9-tetrahydrocannabinol-induced impairment of the prepulse inhibition of the startle reflex in mice. Pharmacol. Biochem. Behav. *84*, 330-336.

S766. Nilsson, M., Waters, S., Waters, N., Carlsson, A., and Carlsson, M.L. (2001). A behavioural pattern analysis of hypoglutamatergic mice--effects of four different antipsychotic agents. J Neural Transm (Vienna) *108*, 1181-1196.

S767. Noda, Y., Yamada, K., Furukawa, H., and Nabeshima, T. (1995). Enhancement of immobility in a forced swimming test by subacute or repeated treatment with phencyclidine: a new model of schizophrenia. Br. J. Pharmacol. *116*, 2531-2537.

S768. Olivier, B., Leahy, C., Mullen, T., Paylor, R., Groppi, V.E., Sarnyai, Z., and Brunner, D. (2001). The DBA/2J strain and prepulse inhibition of startle: a model system to test antipsychotics? Psychopharmacology (Berl.) *156*, 284-290.

S769. Ortega-Alvaro, A., Aracil-Fernandez, A., Garcia-Gutierrez, M.S., Navarrete, F., and Manzanares, J. (2011). Deletion of CB_2 cannabinoid receptor induces schizophrenia-related behaviors in mice. Neuropsychopharmacology *36*, 1489-1504.

S770. Ouagazzal, A.M., Jenck, F., and Moreau, J.L. (2001). Drug-induced potentiation of prepulse inhibition of acoustic startle reflex in mice: a model for detecting antipsychotic activity? Psychopharmacology (Berl.) *156*, 273-283.

S771. Rodriguez-Arias, M., Broseta, I., Aguilar, M.A., and Minarro, J. (2000). Lack of specific effects of selective D_1 and D_2 dopamine antagonists vs. risperidone on morphine-induced hyperactivity. Pharmacol. Biochem. Behav. *66*, 189-197.

S772. Rodriguez-Arias, M., Minarro, J., Aguilar, M.A., Pinazo, J., and Simon, V.M. (1998). Effects of risperidone and SCH 23390 on isolation-induced aggression in male mice. Eur. Neuropsychopharmacol. *8*, 95-103.

S773. Su, Y.A., Si, T.M., Zhou, D.F., Guo, C.M., Wang, X.D., Yang, Y., Shu, L., and Liang, J.H. (2007). Risperidone attenuates MK-801-induced hyperlocomotion in mice via the blockade of serotonin $5\text{-}HT_{2A/2C}$ receptors. Eur. J. Pharmacol. *564*, 123-130.

S774. Uchida, N., Egashira, N., Iwasaki, K., Ishibashi, A., Tashiro, R., Nogami, A., Manome, N., Abe, M., Takasaki, K., Mishima, K., *et al.* (2009). Yokukansan inhibits social isolation-induced aggression and methamphetamine-induced hyperlocomotion in rodents. Biol. Pharm. Bull. *32*, 372-375.

S775. Chatterjee, M., Ganguly, S., Srivastava, M., and Palit, G. (2011). Effect of 'chronic' versus 'acute' ketamine administration and its 'withdrawal' effect on behavioural alterations in mice: implications for experimental psychosis. Behav. Brain Res. *216*, 247-254.

S776. Langen, B., Dost, R., Egerland, U., Stange, H., and Hoefgen, N. (2012). Effect of PDE10A inhibitors on MK-801-induced immobility in the forced swim test. Psychopharmacology (Berl.) *221*, 249-259.

S777. Takahashi, S., Sonehara, K., Takagi, K., Miwa, T., Horikomi, K., Mita, N., Nagase, H., Iizuka, K., and Sakai, K. (1999). Pharmacological profile of MS-377, a novel antipsychotic agent with selective affinity for sigma receptors. Psychopharmacology (Berl.) *145*, 295-302.

S778. Wang, D., Noda, Y., Zhou, Y., Nitta, A., Furukawa, H., and Nabeshima, T. (2007). Synergistic effect of combined treatment with risperidone and galantamine on phencyclidine-induced impairment of latent visuospatial learning and memory: Role of nAChR activation-dependent increase of dopamine D_1 receptor-mediated neurotransmission. Neuropharmacology *53*, 379-389.

S779. Callizot, N., Guenet, J.L., Baillet, C., Warter, J.M., and Poindron, P. (2001). The frissonnant mutant mouse, a model of dopamino-sensitive, inherited motor syndrome. Neurobiol. Dis. *8*, 447-458.

S780. DeAndrade, M.P., Johnson, R.L., Jr., Unger, E.L., Zhang, L., van Groen, T., Gamble, K.L., and Li, Y. (2012). Motor restlessness, sleep disturbances, thermal sensory alterations and elevated serum iron levels in Btbd9 mutant mice. Hum. Mol. Genet. *21*, 3984-3992.

S781. Fukuzaki, K., Kamenosono, T., and Nagata, R. (2000). Effects of ropinirole on various parkinsonian models in mice, rats, and cynomolgus monkeys. Pharmacol. Biochem. Behav. *65*, 503-508.

S782. Li, L., and Zhou, F.M. (2013). Parallel dopamine D1 receptor activity dependence of L-Dopa-induced normal movement and dyskinesia in mice. Neuroscience *236*, 66-76.

S783. Lundblad, M., Usiello, A., Carta, M., Hakansson, K., Fisone, G., and Cenci, M.A. (2005). Pharmacological validation of a mouse model of L-DOPA-induced dyskinesia. Exp. Neurol. *194*, 66-75.

S784. Park, G., Park, Y.J., Yang, H.O., and Oh, M.S. (2013). Ropinirole protects against 1-methyl-4-phenyl-1, 2, 3, 6-tetrahydropyridine (MPTP)-induced neurotoxicity in mice via anti-apoptotic mechanism. Pharmacol. Biochem. Behav. *104*, 163-168.

S785. Qu, S., Le, W., Zhang, X., Xie, W., Zhang, A., and Ondo, W.G. (2007). Locomotion is increased in a11-lesioned mice with iron deprivation: a possible animal model for restless legs syndrome. J. Neuropathol. Exp. Neurol. *66*, 383-388.

S786. Tsuchioka, A., Oana, F., Suzuki, T., Yamauchi, Y., Ijiro, T., Kaidoh, K., and Hiratochi, M. (2015). Duration of drug action of dopamine D2 agonists in mice with 6-hydroxydopamine-induced lesions. Neuroreport *26*, 1126-1132.

S787. Zhao, H., Zhu, W., Pan, T., Xie, W., Zhang, A., Ondo, W.G., and Le, W. (2007). Spinal cord dopamine receptor expression and function in mice with 6-OHDA lesion of the A11 nucleus and dietary iron deprivation. J Neurosci. Res. *85*, 1065-1076.

S788. Aksoz, E., Aksoz, T., Bilge, S.S., Ilkaya, F., Celik, S., and Diren, H.B. (2008). Antidepressant-like effects of echo-planar magnetic resonance imaging in mice determined using the forced swimming test. Brain Res. *1236*, 194-199.

S789. Cunha, M.P., Pazini, F.L., Oliveira, A., Machado, D.G., and Rodrigues, A.L. (2013). Evidence for the involvement of 5-HT_{1A} receptor in the acute antidepressant-like effect of creatine in mice. Brain Res. Bull. *95*, 61-69.

S790. David, D.J., Bourin, M., Hascoet, M., Colombel, M.C., Baker, G.B., and Jolliet, P. (2001). Comparison of antidepressant activity in 4- and 40-week-old male mice in

the forced swimming test: involvement of 5-HT_{1A} and 5-HT_{1B} receptors in old mice. Psychopharmacology (Berl.) *153*, 443-449.

S791. Duman, C.H., Schlesinger, L., Kodama, M., Russell, D.S., and Duman, R.S. (2007). A role for MAP kinase signaling in behavioral models of depression and antidepressant treatment. Biol. Psychiatry *61*, 661-670.

S792. Espallergues, J., Mamiya, T., Vallee, M., Koseki, T., Nabeshima, T., Temsamani, J., Laruelle, C., and Maurice, T. (2012). The antidepressant-like effects of the 3β-hydroxysteroid dehydrogenase inhibitor trilostane in mice is related to changes in neuroactive steroid and monoamine levels. Neuropharmacology *62*, 492-502.

S793. Inan, S.Y., Yalcin, I., and Aksu, F. (2004). Dual effects of nitric oxide in the mouse forced swimming test: possible contribution of nitric oxide-mediated serotonin release and potassium channel modulation. Pharmacol. Biochem. Behav. *77*, 457-464.

S794. Leggio, G.M., Micale, V., and Drago, F. (2008). Increased sensitivity to antidepressants of D_3 dopamine receptor-deficient mice in the forced swim test (FST). Eur. Neuropsychopharmacol. *18*, 271-277.

S795. Mouri, A., Sasaki, A., Watanabe, K., Sogawa, C., Kitayama, S., Mamiya, T., Miyamoto, Y., Yamada, K., Noda, Y., and Nabeshima, T. (2012). MAGE-D1 regulates expression of depression-like behavior through serotonin transporter ubiquitylation. J. Neurosci. *32*, 4562-4580.

S796. Redrobe, J.P., and Bourin, M. (1998). Dose-dependent influence of buspirone on the activities of selective serotonin reuptake inhibitors in the mouse forced swimming test. Psychopharmacology (Berl.) *138*, 198-206.

S797. Renoir, T., Pang, T.Y., Zajac, M.S., Chan, G., Du, X., Leang, L., Chevarin, C., Lanfumey, L., and Hannan, A.J. (2012). Treatment of depressive-like behaviour in Huntington's disease mice by chronic sertraline and exercise. Br. J. Pharmacol. *165*, 1375-1389.

S798. Renoir, T., Zajac, M.S., Du, X., Pang, T.Y., Leang, L., Chevarin, C., Lanfumey, L., and Hannan, A.J. (2011). Sexually dimorphic serotonergic dysfunction in a mouse model of Huntington's disease and depression. PLoS One *6*, e22133.

S799. Rollema, H., Guanowsky, V., Mineur, Y.S., Shrikhande, A., Coe, J.W., Seymour, P.A., and Picciotto, M.R. (2009). Varenicline has antidepressant-like activity in the forced swim test and augments sertraline's effect. Eur. J. Pharmacol. *605*, 114-116.

S800. Sakic, B., Lacosta, S., Denburg, J.A., and Szechtman, H. (2002). Altered neurotransmission in brains of autoimmune mice: pharmacological and neurochemical evidence. J. Neuroimmunol. *129*, 84-96.

S801. Takahashi, E., Katayama, M., Niimi, K., and Itakura, C. (2008). Additive subthreshold dose effects of cannabinoid CB_1 receptor antagonist and selective

serotonin reuptake inhibitor in antidepressant behavioral tests. Eur. J. Pharmacol. *589*, 149-156.

S802. Yamada, M., Makino, Y., Hashimoto, T., Sugiyama, A., Oka, J., Inagaki, M., Yamada, M., and Saitoh, A. (2013). Induction of galanin after chronic sertraline treatment in mouse ventral dentate gyrus. Brain Res. *1516*, 76-82.

S803. Kurt, M., Arik, A.C., and Celik, S. (2000). The effects of sertraline and fluoxetine on anxiety in the elevated plus-maze test in mice. J Basic Clin Physiol Pharmacol *11*, 173-180.

S804. Qiu, Z.K., Zhang, L.M., Zhao, N., Chen, H.X., Zhang, Y.Z., Liu, Y.Q., Mi, T.Y., Zhou, W.W., Li, Y., Yang, R.F., *et al.* (2013). Repeated administration of AC-5216, a ligand for the 18 kDa translocator protein, improves behavioral deficits in a mouse model of post-traumatic stress disorder. Prog. Neuropsychopharmacol. Biol. Psychiatry *45*, 40-46.

S805. Sanchez, C., and Hyttel, J. (1994). Isolation-induced aggression in mice: effects of 5-hydroxytryptamine uptake inhibitors and involvement of postsynaptic 5-HT_{1A} receptors. Eur. J. Pharmacol. *264*, 241-247.

S806. Verma, M., Bali, A., Singh, N., and Jaggi, A.S. (2016). Investigating the role of nisoldipine in foot-shock-induced post-traumatic stress disorder in mice. Fundam Clin Pharmacol *30*, 128-136.

S807. Zhang, L.M., Qiu, Z.K., Zhao, N., Chen, H.X., Liu, Y.Q., Xu, J.P., Zhang, Y.Z., Yang, R.F., and Li, Y.F. (2014). Anxiolytic-like effects of YL-IPA08, a potent ligand for the translocator protein (18 kDa) in animal models of post-traumatic stress disorder. Int. J. Neuropsychopharmacol. *17*, 1659-1669.

S808. Zhang, L.M., Zhou, W.W., Ji, Y.J., Li, Y., Zhao, N., Chen, H.X., Xue, R., Mei, X.G., Zhang, Y.Z., Wang, H.L., and Li, Y.F. (2015). Anxiolytic effects of ketamine in animal models of posttraumatic stress disorder. Psychopharmacology (Berl.) *232*, 663-672.

S809. Hirano, K., Kimura, R., Sugimoto, Y., Yamada, J., Uchida, S., Kato, Y., Hashimoto, H., and Yamada, S. (2005). Relationship between brain serotonin transporter binding, plasma concentration and behavioural effect of selective serotonin reuptake inhibitors. Br. J. Pharmacol. *144*, 695-702.

S810. Bates, E.A., Nikai, T., Brennan, K.C., Fu, Y.H., Charles, A.C., Basbaum, A.I., Ptacek, L.J., and Ahn, A.H. (2010). Sumatriptan alleviates nitroglycerin-induced mechanical and thermal allodynia in mice. Cephalalgia *30*, 170-178.

S811. Bingham, S., Davey, P.T., Sammons, M., Raval, P., Overend, P., and Parsons, A.A. (2001). Inhibition of inflammation-induced thermal hypersensitivity by sumatriptan through activation of 5-HT(1B/1D) receptors. Exp. Neurol. *167*, 65-73.

S812. Carocci, A., Lentini, G., Catalano, A., Cavalluzzi, M.M., Bruno, C., Muraglia, M., Colabufo, N.A., Galeotti, N., Corbo, F., Matucci, R., *et al.* (2010). Chiral aryloxyalkylamines: Selective 5-$HT_{1B/1D}$ activation and analgesic activity. ChemMedChem *5*, 696-704.

S813. Farkas, S., Bolcskei, K., Markovics, A., Varga, A., Kis-Varga, A., Kormos, V., Gaszner, B., Horvath, C., Tuka, B., Tajti, J., and Helyes, Z. (2016). Utility of different outcome measures for the nitroglycerin model of migraine in mice. J Pharmacol Toxicol Methods *77*, 33-44.

S814. Ghelardini, C., Galeotti, N., Figini, M., Imperato, A., Nicolodi, M., Sicuteri, F., Gessa, G.L., and Bartolini, A. (1996). The central cholinergic system has a role in the antinociception induced in rodents and guinea pigs by the antimigraine drug sumatriptan. J. Pharmacol. Exp. Ther. *279*, 884-890.

S815. Ghelardini, C., Galeotti, N., Vivoli, E., Grazioli, I., and Uslenghi, C. (2009). The central analgesia induced by antimigraine drugs is independent from Gi proteins: superiority of a fixed combination of indomethacin, prochlorperazine and caffeine, compared to sumatriptan, in an in vivo model. J Headache Pain *10*, 435-440.

S816. Khan, N., Singh, N., and Jaggi, A.S. (2008). Possible role of spleen-derived factors, vanilloid receptors and calcitonin gene-related peptide in diabetes induced hyperalgesia in mice. Yakugaku Zasshi *128*, 1699-1705.

S817. Nikai, T., Basbaum, A.I., and Ahn, A.H. (2008). Profound reduction of somatic and visceral pain in mice by intrathecal administration of the anti-migraine drug, sumatriptan. Pain *139*, 533-540.

S818. Pradhan, A.A., Smith, M.L., McGuire, B., Tarash, I., Evans, C.J., and Charles, A. (2014). Characterization of a novel model of chronic migraine. Pain *155*, 269-274.

S819. Marshall, F.H., Stratton, S.C., Mullings, J., Ford, E., Worton, S.P., Oakley, N.R., and Hagan, R.M. (1997). Development of tolerance in mice to the sedative effects of the neuroactive steroid minaxolone following chronic exposure. Pharmacol. Biochem. Behav. *58*, 1-8.

S820. Borowicz, K.K., Luszczki, J.J., Duda, A.M., and Czuczwar, S.J. (2003). Effect of topiramate on the anticonvulsant activity of conventional antiepileptic drugs in two models of experimental epilepsy. Epilepsia *44*, 640-646.

S821. Farook, J.M., Morrell, D.J., Lewis, B., Littleton, J.M., and Barron, S. (2007). Topiramate (Topamax) reduces conditioned abstinence behaviours and handling-induced convulsions (HIC) after chronic administration of alcohol in Swiss-Webster mice. Alcohol Alcohol. *42*, 296-300.

S822. Luszczki, J.J. (2007). Isobolographic analysis of interaction between drugs with nonparallel dose-response relationship curves: a practical application. Naunyn Schmiedebergs Arch. Pharmacol. *375*, 105-114.

S823. Maryanoff, B.E., Costanzo, M.J., Nortey, S.O., Greco, M.N., Shank, R.P., Schupsky, J.J., Ortegon, M.P., and Vaught, J.L. (1998). Structure-activity studies on anticonvulsant sugar sulfamates related to topiramate. Enhanced potency with cyclic sulfate derivatives. J. Med. Chem. *41*, 1315-1343.

S824. Nakamura, J., Tamura, S., Kanda, T., Ishii, A., Ishihara, K., Serikawa, T., Yamada, J., and Sasa, M. (1994). Inhibition by topiramate of seizures in spontaneously epileptic rats and DBA/2 mice. Eur. J. Pharmacol. *254*, 83-89.

S825. Nieoczym, D., Luszczki, J.J., Czuczwar, S.J., and Wlaz, P. (2010). Effect of sildenafil on the anticonvulsant action of classical and second-generation antiepileptic drugs in maximal electroshock-induced seizures in mice. Epilepsia *51*, 1552-1559.

S826. Russo, E., Constanti, A., Ferreri, G., Citraro, R., and De Sarro, G. (2004). Nifedipine affects the anticonvulsant activity of topiramate in various animal models of epilepsy. Neuropharmacology *46*, 865-878.

S827. Shank, R.P., Gardocki, J.F., Vaught, J.L., Davis, C.B., Schupsky, J.J., Raffa, R.B., Dodgson, S.J., Nortey, S.O., and Maryanoff, B.E. (1994). Topiramate: preclinical evaluation of structurally novel anticonvulsant. Epilepsia *35*, 450-460.

S828. Abdel-Zaher, A.O., Abdel-Rahman, M.S., and Elwasei, F.M. (2011). Protective effect of *Nigella sativa* oil against tramadol-induced tolerance and dependence in mice: role of nitric oxide and oxidative stress. Neurotoxicology *32*, 725-733.

S829. Basar, S., Uhlenhut, K., Hogger, P., Schone, F., and Westendorf, J. (2010). Analgesic and antiinflammatory activity of *Morinda citrifolia* L. (Noni) fruit. Phytother. Res. *24*, 38-42.

S830. Berrocoso, E., Rojas-Corrales, M.O., and Mico, J.A. (2006). Differential role of 5-HT_{1A} and 5-HT_{1B} receptors on the antinociceptive and antidepressant effect of tramadol in mice. Psychopharmacology (Berl.) *188*, 111-118.

S831. Cha, D.S., Eun, J.S., and Jeon, H. (2011). Anti-inflammatory and antinociceptive properties of the leaves of *Eriobotrya japonica*. J. Ethnopharmacol. *134*, 305-312.

S832. Chen, Y., Chan, S.Y., and Ho, P.C. (2002). Isobolographic analysis of the analgesic interactions between ketamine and tramadol. J. Pharm. Pharmacol. *54*, 623-631.

S833. Dai, X., Brunson, C.D., Rockhold, R.W., Loh, H.H., Ho, I.K., and Ma, T. (2008). Gender differences in the antinociceptive effect of tramadol, alone or in combination with gabapentin, in mice. J. Biomed. Sci. *15*, 645-651.

S834. Dost, R., Rostock, A., and Rundfeldt, C. (2004). The anti-hyperalgesic activity of retigabine is mediated by KCNQ potassium channel activation. Naunyn Schmiedebergs Arch. Pharmacol, *369*, 382-390.

S835. Dursteler, C., Mases, A., Fernandez, V., Pol, O., and Puig, M.M. (2006). Interaction between tramadol and two anti-emetics on nociception and gastrointestinal transit in mice. Eur J Pain *10*, 629-638.

S836. Gonzalez-Trujano, M.E., Pena, E.I., Martinez, A.L., Moreno, J., Guevara-Fefer, P., Deciga-Campos, M., and Lopez-Munoz, F.J. (2007). Evaluation of the antinociceptive effect of *Rosmarinus officinalis* L. using three different experimental models in rodents. J. Ethnopharmacol. *111*, 476-482.

S837. Ide, S., Minami, M., Ishihara, K., Uhl, G.R., Sora, I., and Ikeda, K. (2006). Mu opioid receptor-dependent and independent components in effects of tramadol. Neuropharmacology *51*, 651-658.

S838. Knights, C.B., Gentry, C., and Bevan, S. (2012). Partial medial meniscectomy produces osteoarthritis pain-related behaviour in female C57BL/6 mice. Pain *153*, 281-292.

S839. Mattia, A., Vanderah, T., Raffa, R.B., Vaught, J.L., Tallarida, R.J., and Porreca, F. (1993). Characterization of the unusual antinociceptive profile of tramadol in mice. Drug Dev. Res. *28*, 176-182.

S840. Miranda, H.F., and Pinardi, G. (1998). Antinociception, tolerance, and physical dependence comparison between morphine and tramadol. Pharmacol. Biochem. Behav. *61*, 357-360.

S841. Oliva, P., Aurilio, C., Massimo, F., Grella, A., Maione, S., Grella, E., Scafuro, M., Rossi, F., and Berrino, L. (2002). The antinociceptive effect of tramadol in the formalin test is mediated by the serotonergic component. Eur. J. Pharmacol. *445*, 179-185.

S842. Ozdogan, U.K., Lahdesmaki, J., and Scheinin, M. (2006). The analgesic efficacy of partial opioid agonists is increased in mice with targeted inactivation of the α_{2A}-adrenoceptor gene. Eur. J. Pharmacol. *529*, 105-113.

S843. Pinardi, G., Pelissier, T., and Miranda, H.F. (1998). Interactions in the antinociceptive effect of tramadol in mice: an isobolographic analysis. Eur J Pain *2*, 343-350.

S844. Raffa, R.B., Friderichs, E., Reimann, W., Shank, R.P., Codd, E.E., Vaught, J.L., Jacoby, H.I., and Selve, N. (1993). Complementary and synergistic antinociceptive interaction between the enantiomers of tramadol. J. Pharmacol. Exp. Ther. *267*, 331-340.

S845. Rojas-Corrales, M.O., Berrocoso, E., and Mico, J.A. (2005). Role of 5-HT_{1A} and 5-HT_{1B} receptors in the antinociceptive effect of tramadol. Eur. J. Pharmacol. *511*, 21-26.

S846. Rojas-Corrales, M.O., Ortega-Alvaro, A., Gibert-Rahola, J., Roca-Vinardell, A., and Mico, J.A. (2000). Pindolol, a beta-adrenoceptor blocker/5-hydroxytryptamine(1A/1B) antagonist, enhances the analgesic effect of tramadol. Pain *88*, 119-124.

S847. Romero, A., Miranda, H.F., and Puig, M.M. (2010). Analysis of the opioid-opioid combinations according to the nociceptive stimulus in mice. Pharmacol. Res. *61*, 511-518.

S848. Satyanarayana, P.S., Jain, N.K., Singh, A., and Kulkarni, S.K. (2004). Isobolographic analysis of interaction between cyclooxygenase inhibitors and tramadol in acetic acid-induced writhing in mice. Prog. Neuropsychopharmacol. Biol. Psychiatry *28*, 641-649.

S849. Yanarates, O., Dogrul, A., Yildirim, V., Sahin, A., Sizlan, A., Seyrek, M., Akgul, O., Kozak, O., Kurt, E., and Aypar, U. (2010). Spinal 5-HT7 receptors play an important role in the antinociceptive and antihyperalgesic effects of tramadol and its metabolite, O-Desmethyltramadol, via activation of descending serotonergic pathways. Anesthesiology *112*, 696-710.

S850. Bourin, M., Colombel, M.C., Malinge, M., and Bradwejn, J. (1991). Clonidine as a sensitizing agent in the forced swimming test for revealing antidepressant activity. J. Psychiatry Neurosci. *16*, 199-203.

S851. Katkov, Y.A., Otmakhova, N.A., Gurevich, E.V., Nesterova, I.V., and Bobkova, N.V. (1994). Antidepressants suppress bulbectomy-induced augmentation of voluntary alcohol consumption in C57B1/6j but not in DBA/2j mice. Physiol. Behav. *56*, 501-509.

S852. Kulkarni, S.K., and Dhir, A. (2007). Effect of various classes of antidepressants in behavioral paradigms of despair. Prog. Neuropsychopharmacol. Biol. Psychiatry *31*, 1248-1254.

S853. Kumar, A., Garg, R., and Kumar, P. (2008). Nitric oxide modulation mediates the protective effect of trazodone in a mouse model of chronic fatigue syndrome. Pharmacol. Rep. *60*, 664-672.

S854. Luttinger, D., Freedman, M., Hamel, L., Ward, S.J., and Perrone, M. (1984). The effects of serotonin antagonists in a behavioral despair procedure in mice. Eur. J. Pharmacol. *107*, 53-58.

S855. Pal, S.N., and Dandiya, P.C. (1994). Glutathione as a cerebral substrate in depressive behavior. Pharmacol. Biochem. Behav. *48*, 845-851.

S856. Rubat, C., Coudert, P., Bastide, P., and Tronche, P. (1995). Behavioural profile of two potential antidepressant pyridazine derivatives including arylpiperazinyl moieties in their structure, in mice. J. Pharm. Pharmacol. *47*, 162-170.

S857. Valdman, A.V., and Poshivalov, V.P. (1986). Pharmaco-ethological analysis of antidepressant drug effects. Pharmacol. Biochem. Behav. *25*, 515-519.

S858. Berrocoso, E., Rojas-Corrales, M.O., and Mico, J.A. (2004). Non-selective opioid receptor antagonism of the antidepressant-like effect of venlafaxine in the forced swimming test in mice. Neurosci. Lett. *363*, 25-28.

S859. Dhir, A., and Kulkarni, S.K. (2007). Effect of addition of yohimbine (alpha-2-receptor antagonist) to the antidepressant activity of fluoxetine or venlafaxine in the mouse forced swim test. Pharmacology *80*, 239-243.

S860. Dhir, A., and Kulkarni, S.K. (2008). Antidepressant-like effect of 17β-estradiol: involvement of dopaminergic, serotonergic, and (or) sigma-1 receptor systems. Can. J. Physiol. Pharmacol. *86*, 726-735.

S861. Dhir, A., and Kulkarni, S.K. (2008). Risperidone, an atypical antipsychotic enhances the antidepressant-like effect of venlafaxine or fluoxetine: possible involvement of alpha-2 adrenergic receptors. Neurosci. Lett. *445*, 83-88.

S862. Dhir, A., and Kulkarni, S.K. (2008). Venlafaxine reverses chronic fatigue-induced behavioral, biochemical and neurochemical alterations in mice. Pharmacol. Biochem. Behav. *89*, 563-571.

S863. Juszczak, G.R., Sliwa, A.T., Wolak, P., Tymosiak-Zielinska, A., Lisowski, P., and Swiergiel, A.H. (2006). The usage of video analysis system for detection of immobility in the tail suspension test in mice. Pharmacol. Biochem. Behav. *85*, 332-338.

S864. Kos, T., Legutko, B., Danysz, W., Samoriski, G., and Popik, P. (2006). Enhancement of antidepressant-like effects but not brain-derived neurotrophic factor mRNA expression by the novel N-methyl-D-aspartate receptor antagonist neramexane in mice. J. Pharmacol. Exp. Ther. *318*, 1128-1136.

S865. Kumar, A., Garg, R., Gaur, V., and Kumar, P. (2010). Venlafaxine involves nitric oxide modulatory mechanism in experimental model of chronic behavior despair in mice. Brain Res 1311, 73-80.

S866. Millan, M.J., Dekeyne, A., Papp, M., La Rochelle, C.D., MacSweeny, C., Peglion, J.L., and Brocco, M. (2001). S33005, a novel ligand at both serotonin and norepinephrine transporters: II. Behavioral profile in comparison with venlafaxine, reboxetine, citalopram, and clomipramine. J. Pharmacol. Exp. Ther. *298*, 581-591.

S867. Ramamoorthy, R., Radhakrishnan, M., and Borah, M. (2008). Antidepressant-like effects of serotonin type-3 antagonist, ondansetron: an investigation in behaviour-based rodent models. Behav. Pharmacol. *19*, 29-40.

S868. Venzala, E., Garcia-Garcia, A.L., Elizalde, N., Delagrange, P., and Tordera, R.M. (2012). Chronic social defeat stress model: behavioral features, antidepressant action,

and interaction with biological risk factors. Psychopharmacology (Berl.) *224*, 313-325.

S869. Zhang, X., Li, X., Li, M., Ren, J., Yun, K., An, Y., Lin, L., and Zhang, H. (2015). Venlafaxine increases cell proliferation and regulates DISC1, PDE4B and NMDA receptor 2B expression in the hippocampus in chronic mild stress mice. Eur. J. Pharmacol. *755*, 58-65.

S870. Karlsson, L., Hiemke, C., Carlsson, B., Josefsson, M., Ahlner, J., Bengtsson, F., Schmitt, U., and Kugelberg, F.C. (2011). Effects on enantiomeric drug disposition and open-field behavior after chronic treatment with venlafaxine in the P-glycoprotein knockout mice model. Psychopharmacology (Berl.) *215*, 367-377.

S871. Kumar, A., Garg, R., Gaur, V., and Kumar, P. (2009). Nitric oxide mechanism in protective effect of imipramine and venlafaxine against acute immobilization stress-induced behavioral and biochemical alteration in mice. Neurosci. Lett. *467*, 72-75.

S872. Paterson, N.E., Iwunze, M., Davis, S.F., Malekiani, S.A., and Hanania, T. (2010). Comparison of the predictive validity of the mirror chamber and elevated plus maze tests in mice. J. Neurosci. Methods *188*, 62-70.

S873. Alexandre, C., Dordal, A., Aixendri, R., Guzman, A., Hamon, M., and Adrien, J. (2008). Sleep-stabilizing effects of E-6199, compared to zopiclone, zolpidem and THIP in mice. Sleep *31*, 259-270.

S874. Anaclet, C., Zhang, M., Zhao, C., Buda, C., Seugnet, L., and Lin, J.S. (2012). Effects of GF-015535-00, a novel α1 GABAA receptor ligand, on the sleep-wake cycle in mice, with reference to zolpidem. Sleep *35*, 103-111.

S875. Blednov, Y.A., Jung, S., Alva, H., Wallace, D., Rosahl, T., Whiting, P.J., and Harris, R.A. (2003). Deletion of the α_1 or β_2 subunit of $GABA_A$ receptors reduces actions of alcohol and other drugs. J. Pharmacol. Exp. Ther. *304*, 30-36.

S876. Cho, S., Park, J.H., Pae, A.N., Han, D., Kim, D., Cho, N.C., No, K.T., Yang, H., Yoon, M., Lee, C., *et al.* (2012). Hypnotic effects and GABAergic mechanism of licorice (*Glycyrrhiza glabra*) ethanol extract and its major flavonoid constituent glabrol. Bioorg. Med. Chem. *20*, 3493-3501.

S877. Cope, D.W., Wulff, P., Oberto, A., Aller, M.I., Capogna, M., Ferraguti, F., Halbsguth, C., Hoeger, H., Jolin, H.E., Jones, A., *et al.* (2004). Abolition of zolpidem sensitivity in mice with a point mutation in the $GABA_A$ receptor γ2 subunit. Neuropharmacology *47*, 17-34.

S878. Crestani, F., Martin, J.R., Mohler, H., and Rudolph, U. (2000). Mechanism of action of the hypnotic zolpidem in vivo. Br. J. Pharmacol. *131*, 1251-1254.

S879. Depoortere, H., Zivkovic, B., Lloyd, K.G., Sanger, D.J., Perrault, G., Langer, S.Z., and Bartholini, G. (1986). Zolpidem, a novel nonbenzodiazepine hypnotic. I. Neuropharmacological and behavioral effects. J. Pharmacol. Exp. Ther. *237*, 649-658.

S880. Fisher, S.P., Godinho, S.I., Pothecary, C.A., Hankins, M.W., Foster, R.G., and Peirson, S.N. (2012). Rapid assessment of sleep-wake behavior in mice. J. Biol. Rhythms *27*, 48-58.

S881. Heldt, S.A., and Ressler, K.J. (2010). Amygdala-specific reduction of α1-$GABA_A$ receptors disrupts the anticonvulsant, locomotor, and sedative, but not anxiolytic, effects of benzodiazepines in mice. J. Neurosci. *30*, 7139-7151.

S882. Homanics, G.E., Quinlan, J.J., and Firestone, L.L. (1999). Pharmacologic and behavioral responses of inbred C57BL/6J and strain 129/SvJ mouse lines. Pharmacol. Biochem. Behav. *63*, 21-26.

S883. Linden, A.M., Aller, M.I., Leppa, E., Rosenberg, P.H., Wisden, W., and Korpi, E.R. (2008). K^+ channel TASK-1 knockout mice show enhanced sensitivities to ataxic and hypnotic effects of $GABA_A$ receptor ligands. J. Pharmacol. Exp. Ther. *327*, 277-286.

S884. Mathiasen, L.S., Mirza, N.R., and Rodgers, R.J. (2008). Strain- and model-dependent effects of chlordiazepoxide, L-838,417 and zolpidem on anxiety-like behaviours in laboratory mice. Pharmacol. Biochem. Behav. *90*, 19-36.

S885. Narita, M., Niikura, K., Nanjo-Niikura, K., Narita, M., Furuya, M., Yamashita, A., Saeki, M., Matsushima, Y., Imai, S., Shimizu, T., *et al.* (2011). Sleep disturbances in a neuropathic pain-like condition in the mouse are associated with altered GABAergic transmission in the cingulate cortex. Pain *152*, 1358-1372.

S886. Noda, Y., Kamei, H., Mamiya, T., Furukawa, H., and Nabeshima, T. (2000). Repeated phencyclidine treatment induces negative symptom-like behavior in forced swimming test in mice: imbalance of prefrontal serotonergic and dopaminergic functions. Neuropsychopharmacology *23*, 375-387.

S887. Pericic, D., Vlainic, J., and Strac, D.S. (2008). Sedative and anticonvulsant effects of zolpidem in adult and aged mice. J Neural Transm (Vienna) *115*, 795-802.

S888. Perrault, G., Morel, E., Sanger, D.J., and Zivkovic, B. (1990). Differences in pharmacological profiles of a new generation of benzodiazepine and non-benzodiazepine hypnotics. Eur. J. Pharmacol. *187*, 487-494.

S889. Pinna, G., Agis-Balboa, R.C., Zhubi, A., Matsumoto, K., Grayson, D.R., Costa, E., and Guidotti, A. (2006). Imidazenil and diazepam increase locomotor activity in mice exposed to protracted social isolation. Proc. Natl. Acad. Sci. U.S.A. *103*, 4275-4280.

S890. Quinlan, J.J., Firestone, L.L., and Homanics, G.E. (2000). Mice lacking the long splice variant of the γ2 subunit of the $GABA_A$ receptor are more sensitive to benzodiazepines. Pharmacol. Biochem. Behav. *66*, 371-374.

S891. Umathe, S.N., Vaghasiya, J.M., Jain, N.S., and Dixit, P.V. (2009). Neurosteroids modulate compulsive and persistent behavior in rodents: Implications for obsessive–compulsive disorder. Prog. Neuropsychopharmacol. Biol. Psychiatry *33*, 1161-1166.

S892. Sanger, D.J., Morel, E., and Perrault, G. (1996). Comparison of the pharmacological profiles of the hypnotic drugs, zaleplon and zolpidem. Eur. J. Pharmacol. *313*, 35-42.

S893. Vlainic, J., and Pericic, D. (2009). Effects of acute and repeated zolpidem treatment on pentylenetetrazole-induced seizure threshold and on locomotor activity: comparison with diazepam. Neuropharmacology *56*, 1124-1130.

S894. White, H.S., Brown, S.D., Woodhead, J.H., Skeen, G.A., and Wolf, H.H. (1997). Topiramate enhances GABA-mediated chloride flux and GABA-evoked chloride currents in murine brain neurons and increases seizure threshold. Epilepsy Res. *28*, 167-179.

S895. Xu, Q., Xu, X.H., Qu, W.M., Lazarus, M., Urade, Y., and Huang, Z.L. (2014). A mouse model mimicking human first night effect for the evaluation of hypnotics. Pharmacol. Biochem. Behav. *116*, 129-136.