List of Publications

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Journal Articles

Meyer N, Kröger M, Thümmler J, Tietze L, Palme R, **Touma C** (2020): Impact of three commonly used blood sampling techniques on the welfare of laboratory mice: Taking the animal's perspective. *PLoS One* 15(9): e0238895. Impact Factor: 2.7

Harrison DJ, Creeth HDJ, Tyson HR, Boque-Sastre R, Isles AR, Palme R, **Touma C**, John RM (2020): Unified behavioral scoring for preclinical models. *Frontiers in Neuroscience* 14: 313. Impact Factor: 3.6

Forkosh O, Karamihalev S, Roeh S, Alon U, Anpilov S, **Touma C**, Nussbaumer M, Flachskamm C, Kaplick PM, Shemesh Y, Chen A (2019): Identity domains capture individual differences from across the behavioral repertoire. *Nature Neuroscience* 22: 2023-2028. Impact Factor: 20.1

Golub Y, Schildbach EM, **Touma C**, Kratz O, Moll GH, von Horsten S, Canneva F (2019): Role of hypothalamus-pituitary-adrenal axis modulation in the stress-resilient phenotype of DPP4-deficient rats. *Behavioural Brain Research* 356: 243-249. Impact Factor: 3.0

Razzoli M, Nyuyki-Dufe K, Gurney A, Erickson C, McCallum J, Spielman N, Marzullo M, Patricelli J, Kurata M, Pope EA, **Touma C**, Palme R, Largaespada DA, Allison DB, Bartolomucci A (2018): Social stress shortens lifespan in mice. *Aging Cell* e12778. Impact Factor: 7.6

Weidt A, Gygax L, Palme R, **Touma C** and Konig B (2018): Impact of male presence on female sociality and stress endocrinology in wild house mice (*Mus musculus domesticus*). *Physiology & Behavior* 189: 1-9. Impact Factor: 2.6

Gurfein BT, Hasdemir B, Milush JM, **Touma C**, Palme R, Nixon DF, Hecht FM, Darcel N, Bhargava A (2017): Enriched environment and stress exposure influence splenic B lymphocyte composition. *PLoS One* 12(7): e0180771. Impact Factor: 4.1

McIlwrick S, Pohl T, Chen A and **Touma C** (2017): Late-onset cognitive impairments after early-life stress are shaped by inherited differences in stress reactivity. *Frontiers in Cellular Neuroscience* 11: 9. Impact Factor: 4.6

McIlwrick S, Rechenberg A, Matthes M, Burgstaller J, Schwarzbauer T, Chen A, **Touma C** (2016): Genetic predisposition for high stress reactivity amplifies effects of early-life adversity. *Psychoneuroendocrinology* 70: 85-97. Impact Factor: 5.8

Surget A, van Nieuwenhuijzen PS, Heinzmann J-M, Knapman A, McIlwrick S, Westphal W-P, **Touma C**[*], Belzung C[*] (2016): Antidepressant treatment differentially affects the

phenotype of high and low stress reactive mice. *Neuropharmacology* 110: 37-47. *equal contribution Impact Factor: 5.0

Gaali S, Kirschner S, Cuboni S, Hartmann J, Kozany C, Balsevich G, Namendorf C, Fernandez-Vizarra P, Sippel C, Zannas AS, Draenert R, Binder EB, Almeida OFX, Rühter G, Uhr M, Schmidt MV, **Touma C**, Bracher A, Hausch F (2015): Selective inhibitors of the FK506-binding protein 51 by induced fit. *Nature Chemical Biology* 11: 33-39. Impact Factor: 15.1

Hennings JM, Uhr M, Klengel T, Weber P, Pütz B, **Touma C**, Czamara D, Ising M, Holsboer F, Lucae S (2015): RNA expression profiling in depressed patients suggests retinoid-related orphan receptor alpha as a biomarker for antidepressant response. *Translational Psychiatry* 5: e538. Impact Factor: 4.4

Schmidt U, Buell DR, Ionescu IA, Gassen NC, Holsboer F, Cox MB, Novak B, Huber C, Hartmann J, Schmidt MV, **Touma C**, Rein T, Herrmann L (2015): A role for synapsin in FKBP51 modulation of stress responsiveness: Convergent evidence from animal and human studies. *Psychoneuroendocrinology* 52: 43-58. Impact Factor: 5.8

Gurfein BT, Davidenko O, Premenko-Lanier M, Milush JM, Acree M, Dallman MF, **Touma C**, Palme R, York VA, Fromentin G, Darcel N, Nixon DF, Hecht FM (2014): Environmental enrichment alters splenic cell composition and enhances secondary influenza vaccine responses in mice. *Molecular Medicine* 20: 179-190. Impact Factor: 4.8

Heinzmann JM, Kloiber S, Mattos GE, Bielohuby M, Schmidt MV, Palme R, Holsboer F, Uhr M, Ising M, **Touma C** (2014): Mice selected for extremes in stress reactivity reveal key endophenotypes of major depression: A translational approach. *Psychoneuroendocrinology* 49: 229-243. Impact Factor: 5.8

Krohn J, Speed D, Palme R, **Touma C**, Mott R, Flint J (2014): Genetic interaction with sex make a relatively small contribution to the heritability of complex traits in mice. *PLoS ONE* 9 (5): e96450. Impact Factor: 4.1

Sotnikov S, Wittmann A, Bunck M, Bauer S, Deussing J, Schmidt MV, **Touma C**, Landgraf R, Czibere L (2014): Blunted HPA axis reactivity reveals glucocorticoid system dysbalance in a mouse model of high anxiety-related behavior. *Psychoneuroendocrinology* 48: 41-51. Impact Factor: 5.8

Buschert J, Hohoff C, **Touma C**, Palme R, Rothermundt M, Arolt V, Zhang W, Ambrée O (2013): S100B overexpression increases behavioral and neural plasticity in response to the social environment during adolescence. *Journal of Psychiatric Research* 47: 1791-1799. Impact Factor: 4.7

Mattos GE, Heinzmann JM, Norkowski S, Helbling JC, Minni AM, Moisan MP, **Touma C** (2013): Corticosteroid-binding globulin contributes to the neuroendocrine phenotype of mice selected for extremes in stress reactivity. *Journal of Endocrinology* 219: 217-229. Impact Factor: 4.1

Palme R, **Touma C**, Arias N, Dominchin MF, Lepschy M (2013): Steroid extraction: Get the best out of faecal samples. *Wiener Tierärztliche Monatsschrift – Veterinary Medicine Austria* 100: 238-246. Impact Factor: 0.4

Voigt CC, Klöckner P, **Touma C**, Neuschl C, Brockmann G, Göritz F, Palme R, Thomsen R (2013): Hormonal stress response of laboratory mice to conventional and minimally invasive bleeding techniques. *Animal Welfare* 22: 449-455. Impact Factor: 1.4

Breu J, **Touma C**, Hölter SM, Knapman A, Wurst W, Deussing J (2012): Urocortin 2 modulates aspects of social behaviour in mice. *Behavioural Brain Research* 233: 331-336. Impact Factor: 3.4

Coudereau JP, Sreng L, Palme R, **Touma C**, Pratte M (2012): Do social statuses affect the startle reflex in male mice? *Behavioural Brain Research* 234: 117-120.
Impact Factor: 3.4

Dedic N[*], **Touma C**[*], Romanowski CP, Schieven M, Kühne C, Ableitner M, Lu A, Holsboer F, Wurst W, Kimura M, Deussing JM (2012): Assessing behavioural effects of chronic HPA axis activation using conditional CRH-overexpressing mice. *Cellular and Molecular Neurobiology* 32: 815-828. [*]equal contribution Impact Factor: 2.0

Gonik M, Frank E, Keßler MS, Czamara D, Bunck M, Yen YC, Pütz B, Holsboer F, Bettecken T, Landgraf R, Müller-Myhsok B, **Touma C**, Czibere L (2012): The endocrine stress response is linked to one specific locus on chromosome 3 in a mouse model based on extremes in trait anxiety. *BMC Genomics* 13: 579.
Impact Factor: 4.1

Gurfein BT, Stamm AW, Bacchetti P, Dallman MF, Nadkarni NA, Milush JM, **Touma C**, Palme R, Pozzo Di Borgo C, Fromentin G, Lown-Hecht R, Konsman JP, Acree M, Premenko-Lanier M, Darcel N, Hecht FM, Nixon DF (2012): The calm mouse: An animal model of stress reduction. *Molecular Medicine* 18: 606-617.
Impact Factor: 4.8

Hartmann J, Wagner KV, Liebl C, Scharf SH, Wang XD, Wolf M, Hausch F, Rein T, Schmidt U, **Touma C**, Cheung-Flynn J, Cox MB, Smith DF, Holsboer F, Müller MB, Schmidt MV (2012): The involvement of FK506-binding protein 51 (FKBP5) in the behavioral and neuroendocrine effects of chronic social defeat stress. *Neuropharmacology* 62: 332-339. Impact Factor: 4.8

Knapman A, Kaltwasser SF, Martins-de-Souza D, Holsboer F, Landgraf R, Turck CW, Czisch M, **Touma C** (2012): Increased stress reactivity is associated with reduced hippocampal activity and neuronal integrity along with changes in energy metabolism. *European Journal of Neuroscience* 35: 412-422. EJN featured article Impact Factor: 3.6

Kolbe T, Palme R, **Touma C**, Rülicke T (2012): Repeated use of surrogate mothers for embryo transfer in the mouse. *Biology of Reproduction* 86: 19, 1-6.
Impact Factor: 4.0

Pillai AG, de Jong D, Kantsou S, Krugers H, Knapman A, Heinzmann JM, Holsboer F, Landgraf R, Joëls M, **Touma C** (2012): Dendritic morphology of hippocampal and

amygdalar neurons in adolescent mice is resilient to genetic differences in stress reactivity. *PLoS ONE* 7 (6): e38971. Impact Factor: 4.1

Edgar NM, **Touma C**, Palme R, Sibille E (2011): Resilient emotionality and molecular compensation in mice lacking the oligodendrocyte-specific gene Cnp1. *Translational Psychiatry* 1: e42. Impact Factor: 4.4

Engel AKJ, Gross AN, Richter SH, Rommen J, **Touma C**, Würbel H (2011): Variation in stress reactivity affects cage-induced stereotypies in female CD-1 (ICR) mice. *Applied Animal Behaviour Science* 133: 101-108. Impact Factor: 1.9

Fenzl T[*], **Touma C**[*], Romanowski CP, Ruschel J, Holsboer F, Landgraf R, Kimura M, Yassouridis A (2011): Sleep disturbances in highly stress reactive mice: Modeling endophenotypes of major depression. *BMC Neuroscience* 12: 29. [*]equal contribution Impact Factor: 3.0

Refojo D, Schweizer M, Kuehne C, Ehrenberg S, Thoeringer C, Vogl AM, Dedic N, Schumacher M, von Wolff G, Avrabos C, **Touma C**, Engblom D, Schütz G, Nave KA, Eder M, Wotjak CT, Sillaber I, Holsboer F, Wurst W, Deussing JM (2011): Glutamatergic and dopaminergic neurons mediate anxiogenic and anxiolytic effects of CRHR1. *Science* 333: 1903-1907. Impact Factor: 31.2

Richter SH, Garner JP, Zipser B, Lewejohann L, Sachser N, **Touma C**, Schindler B, Chourbaji S, Brandwein C, Gass P, van Stipdonk N, van der Harst J, Spruijt B, Voikar V, Wolfer DP, Würbel H (2011): Effect of population heterogenization on the reproducibility of mouse behavior: a multi-laboratory study. *PLoS ONE* 6 (1): e16461. Impact Factor: 4.1

Surget A, Tanti A, Leonardo DE, Laugeray A, Rainer Q, **Touma C**, Palme R, Griebel G, Ibarguen-Vargas Y, Hen R, Belzung C (2011): Antidepressants recruit new neurons to improve stress response regulation. *Molecular Psychiatry* 16: 1177-1188. Impact Factor: 14.9

Touma C, Gassen NC, Herrmann L, Cheung-Flynn J, Büll DR, Ionescu IA, Heinzmann JM, Knapman A, Siebertz A, Depping AM, Hartmann J, Hausch F, Schmidt MV, Holsboer F, Ising M, Cox MB, Schmidt U, Rein T (2011): FK506 binding protein 5 (FKBP5) shapes stress responsiveness: modulation of neuroendocrine reactivity and coping behavior. *Biological Psychiatry* 70: 928-936. Impact Factor: 9.2

Varadarajulu J, Lebar M, Krishnamoorthy G, Habelt S, Lu J, Weinstein IB, Holsboer F, Turck CW, **Touma C** (2011): Increased anxiety-related behaviour in Hint1 knockout mice. *Behavioural Brain Research* 220: 305-311. Impact Factor: 3.4

Adamson TW, Kendall LV, Goss S, Grayson K, **Touma C**, Palme R, Chen JQ, Borowsky AD (2010): Assessment of carprofen and buprenorphine on recovery of mice after surgical removal of the mammary fat pad. *Journal of the American Association for Laboratory Animal Science* 49: 610-616. Impact Factor: 1.1

Fuss J, Ben Abdallah NM, Vogt MA, **Touma C**, Pacifici PG, Palme R, Witzemann V, Hellweg R, Gass P (2010): Voluntary exercise induces anxiety-related behaviour in

adult C57BL/6J mice correlating with hippocampal neurogenesis. *Hippocampus* 20: 364-376. Impact Factor: 5.2

Heinzmann JM, Thoeringer CK, Knapman A, Palme R, Holsboer F, Uhr M, Landgraf R, **Touma C** (2010): Intrahippocampal corticosterone dynamics in mice selectively bred for extremes in stress reactivity: a microdialysis study. *Journal of Neuroendocrinology* 22: 1187-1197. Impact Factor: 3.1

Jansen F, Heiming RS, Lewejohann L, **Touma C**, Palme R, Schmitt A, Lesch KP, Sachser N (2010): Modulation of behavioural profile and stress response by 5-HTT genotype and social experience in adulthood. *Behavioural Brain Research* 207: 21-29. Impact Factor: 3.4

Knapman A, Heinzmann JM, Hellweg R, Holsboer F, Landgraf R, **Touma C** (2010): Increased stress reactivity is associated with cognitive deficits and decreased hippocampal brain-derived neurotrophic factor in a mouse model of affective disorders. *Journal of Psychiatric Research* 44: 566-575. Impact Factor: 4.7

Knapman A, Heinzmann JM, Holsboer F, Landgraf R, **Touma C** (2010): Modeling psychotic and cognitive symptoms of affective disorders: disrupted latent inhibition and reversal learning deficits in highly stress reactive mice. *Neurobiology of Learning and Memory* 94: 145-152. Impact Factor: 3.4

Lepschy M, **Touma C**, Palme R (2010): Faecal glucocorticoid metabolites: how to express yourself – comparison of absolute amounts versus concentrations in samples from a study in laboratory rats. *Laboratory Animals* 44: 192-198. Impact Factor: 1.2

Nicholson A, Malcom RD, **Touma C**, Palme R, Wiles MV (2010): Response to Drs Foltz and DeLong's letter to the Editor. *Journal of the American Association for Laboratory Animal Science* 49: 136-137. Impact Factor: 1.1

Blottner D, Serradj N, Salanova M, **Touma C**, Palme R, Silva M, Aerts JM, Berckmans D, Vico L, Liu Y, Guiliani A, Rustichelli F, Cancedda R, Jamon M (2009): Morphological, physiological and behavioural evaluation of a 'Mice in Space' housing system. *Journal of Comparative Physiology B* 179: 519-533. Impact Factor: 2.0

Nicholson A, Malcom RD, Russ PL, Cough K, **Touma C**, Palme R, Wiles MV (2009): The response of C57BL/6J and BALB/cJ mice to increased housing density. *Journal of the American Association for Laboratory Animal Science* 48: 740-753. Impact Factor: 1.1

Touma C, Fenzl T, Ruschel J, Palme R, Holsboer F, Kimura M, Landgraf R (2009): Rhythmicity in mice selected for extremes in stress reactivity: behavioural, endocrine and sleep changes resembling endophenotypes of major depression. *PLoS ONE* 4 (1): e4325. Impact Factor: 4.1

Ibarguen-Vargas Y, Surget A, **Touma C**, Palme R, Belzung C (2008): Multifaceted strain-specific effects in a mouse model of depression and of antidepressant reversal. *Psychoneuroendocrinology* 33: 1357-1368. Impact Factor: 5.8

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Touma C, Bunck M, Glasl L, Nussbaumer M, Palme R, Stein H, Wolferstätter M, Zeh R, Zimbelmann M, Holsboer F, Landgraf R (2008): Mice selected for high versus low stress reactivity: a new animal model for affective disorders. *Psychoneuroendocrinology* 33: 839-862. Impact Factor: 5.8

Lepschy M, **Touma C**, Hruby R, Palme R (2007): Non-invasive measurement of adrenocortical activity in male and female rats. *Laboratory Animals* 41: 372-387. Impact Factor: 1.2

Ambrée O, **Touma C**, Görtz N, Keyvani K, Paulus W, Palme R, Sachser N (2006): Activity changes and marked stereotypic behavior precede A^2 pathology in TgCRND8 Alzheimer mice. *Neurobiology of Aging* 27: 955-964. Impact Factor: 6.2

Dallmann R, **Touma C**, Palme R, Albrecht U, Steinlechner S (2006): Impaired daily glucocorticoid rhythm in *Per1*^{Brd} mice. *Journal of Comparative Physiology A* 192: 769-775. Impact Factor: 2.0

Voigtländer T, Unterberger U, **Touma C**, Palme R, Polster B, Strohschneider M, Dorner S, Budka H (2006): Prominent corticosteroid disturbance in experimental prion disease. *European Journal of Neuroscience* 23: 2723-2730. Impact Factor: 3.2

Touma C, Ambrée O, Görtz N, Keyvani K, Lewejohann L, Palme R, Paulus W, Schwarze-Eicker K, Sachser N (2004): Age- and sex-dependent development of adrenocortical hyperactivity in a transgenic mouse model of Alzheimer's disease. *Neurobiology of Aging* 25: 893-904. Impact Factor: 6.2

Touma C, Palme R, Sachser N (2004): Analyzing corticosterone metabolites in fecal samples of mice: a noninvasive technique to monitor stress hormones. *Hormones and Behavior* 45: 10-22. Impact Factor: 3.9

Touma C, Sachser N, Möstl E, Palme R (2003): Effects of sex and time of day on metabolism and excretion of corticosterone in urine and feces of mice. *General and Comparative Endocrinology* 130: 267-278. Impact Factor: 3.3

Touma C, Palme R, Sachser N (2001): Different types of oestrous cycles in two closely related South American rodents (*Cavia aperea* and *Galea musteloides*) differing in social and mating systems. *Reproduction* 121: 791-801. Impact Factor: 3.1

Review Articles

Huzard D, Rappeneau V, Meijer OC, **Touma C**, Arango-Lievano M, Garabedian MJ, Jeanneteau F (2020): Experience and activity-dependent control of glucocorticoid receptors during the stress response in large-scale brain networks. *Stress* in press. Impact Factor: 3.3

Rappeneau V, Wilmes L, **Touma C** (2020): Molecular correlates of mitochondrial dysfunctions in major depression: evidence from clinical and rodent studies. *Molecular and Cellular Neuroscience* (Special Issue: Neuronal mechanisms of stress resilience) in press. Impact Factor: 3.2

Touma C (2011): Stress and affective disorders: animal models elucidating the molecular basis of neuroendocrine-behavior interactions. Supplement 'Systems Biology of Affective Disorders', *Pharmacopsychiatry* 44 (Suppl 1): S15-S26. Impact Factor: 2.1

Palme R., Rettenbacher S, **Touma C**, El Bahr S, Möstl E (2005): Stress hormones in mammals and birds: Comparative aspects regarding metabolism, excretion and noninvasive measurement in fecal samples. In: Trends in Comparative Endocrinology and Neurobiology. *Annals of the New York Academy of Sciences* 1040: 162-171. Impact Factor: 3.2

Touma C, Palme R (2005): Measuring fecal glucocorticoid metabolites in mammals and birds: the importance of validation. *Annals of the New York Academy of Sciences* 1046: 54-74. Impact Factor: 3.2

Book Chapters and Editorials

Rein T, Ambree O, Fries GR, Rappeneau V, Schmidt U, **Touma C** (2019): The hypothalamic-pituitary-adrenal axis in depression: Molecular regulation, pathophysiological role, and translational implications. In: Quevedo J, Carvalho AF, Zarate CA (Eds.): *Neurobiology of depression: Road to novel therapeutics*. Academic Press, London, UK, pp. 89-96.

Hambsch B, Czibere L, Landgraf R, **Touma C** (2009): Genetic transmission of behavior and its neuroendocrine correlates. In: Pfaff D, Arnold AP, Etgen AM, Fahrbach SE, Rubin RT (Eds.): *Hormones, Brain and Behavior* 2nd ed., Elsevier Science, San Diego CA, USA, Volume 4, Chapter84, pp. 2633-2671.

Kaiser S, **Touma C**, Galert T, Würbel H (2008): Animal suffering – fact or fiction? In: Müller K, Sachser N (Eds.): *Theology Meets Biology – Anthropological Perspectives on Animals and Human Beings*. Pustet Verlag, Regensburg, pp. 123-136.

Jömann N, Junker C, **Touma C** (Eds.) (2004): Religion - wieso, weshalb, warum? Zur Funktion von Religion aus soziologischer, biologischer, philosophischer und theologischer Sicht. Reihe: Edition KSHG, Bd. 3, 160 Seiten, LIT Verlag Münster-Hamburg-Berlin-Wien-London.

Touma C, Kurt F (2001): Ethologische Untersuchungen zur Musth bei Elefantenbullen in Menschenhand. In: Kurt F (Ed.): *Elefant in Menschenhand – Forschungsberichte aus Sri Lanka*. Filander Verlag, Fürth, pp. 185-196.