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Research output

Aberrant acoustic and tactile sensory processing at specific developmental stages in the *Cntnap2* and *Nrxn1* mouse models for neurodevelopmental disorders

Riemersma, I., Havekes, R. & Kas, M., 3-Oct-2021.

Developmental sensory profiles in three genetic mouse models of synaptic dysfunction relevant to autism spectrum conditions

Riemersma, I., Havekes, R. & Kas, M., 30-Sep-2021.

The role of clock genes in sleep, stress and memory

Bolsius, Y. G., Zurbruggen, M. D., Kyoung Kim, J., Kas, M. J., Meerlo, P., Aton, S. J. & Havekes, R., Sep-2021, In: *Biochemical Pharmacology*. 191, 114493.

The continued need for animals to advance brain research

Homberg, J. R., Adan, R. A. H., Alenina, N., Asiminas, A., Bader, M., Beckers, T., Begg, D. P., Blokland, A., Burger, M. E., van Dijk, G., Eisel, U. L. M., Elgersma, Y., Englitz, B., Fernandez-Ruiz, A., Fitzsimons, C. P., van Dam, A-M., Gass, P., Grandjean, J., Havekes, R., Henckens, M. J. A. G. & 54 others, Herden, C., Hut, R. A., Jarrett, W., Jeffrey, K., Jezova, D., Kalsbeek, A., Kamermans, M., Kas, M. J., Kasri, N. N., Kiliaan, A. J., Kolk, S. M., Korosi, A., Korte, S. M., Kozicz, T., Kushner, S. A., Leech, K., Lesch, K-P., Lesscher, H., Lucassen, P. J., Luthi, A., Ma, L., Mallien, A. S., Meerlo, P., Mejjas, J. F., Meye, F. J., Mitchell, A. S., Mul, J. D., Olcese, U., González, A. O., Olivier, J. D. A., Pasqualetti, M., Pennartz, C. M. A., Popik, P., Prickaerts, J., de la Prida, L. M., Ribeiro, S., Roozendaal, B., Rossato, J. I., Salari, A-A., Schoemaker, R. G., Smit, A. B., Vanderschuren, L. J. M. J., Takeuchi, T., van der Veen, R., Smidt, M. P., Vyazovskiy, V. V., Wiesmann, M., Wierenga, C. J., Williams, B., Willuhn, I., Wöhr, M., Wolvekamp, M., van der Zee, E. A. & Genzel, L., 4-Aug-2021, In: *Neuron*. 109, 15, p. 2374-2379 6 p.

Sleep deprivation reduces the density of individual spine subtypes in a branch-specific fashion in CA1 neurons

Bolsius, Y. G., Meerlo, P., Kas, M. J., Abel, T. & Havekes, R., 15-Jul-2021, (E-pub ahead of print) In: *Journal of Sleep Research*. e13438.

The role of Protocadherin 9 expressing corticothalamic neurons in sensory-related behavioral performance

Hornix, B., Riemersma, I., Østergaard, F., Havekes, R. & Kas, M., 10-Jun-2021, (Accepted/In press) *Dutch Neuroscience Meeting 2021*.

Does it matter what keeps you awake? The impact of different sleep deprivation methods on hippocampal memory consolidation

Sarma, A., Billeter, J-C., Meerlo, P. & Havekes, R., 9-Jun-2021.

Restoring persistent accessibility to memories after sleep deprivation-induced amnesia

Bolsius, Y., Heckman, P., Raven, F., Meijer, R., Kas, M., Ramirez, S., Meerlo, P. & Havekes, R., 9-Jun-2021.

A brief period of sleep deprivation leads to subtle changes in mouse gut microbiota

El Aidy, S., Bolsius, Y. G., Raven, F. & Havekes, R., Dec-2020, In: *Journal of Sleep Research*. 29, 6, 8 p., e12920.

A brief period of sleep deprivation negatively impacts the acquisition, consolidation, and retrieval of object-location memories

Heckman, P. R. A., Roig Kuhn, F., Meerlo, P. & Havekes, R., Nov-2020, In: *Neurobiology of Learning and Memory*. 175, p. 107326

Sleep deprivation-induced impairment of memory consolidation is not mediated by glucocorticoid stress hormones
Raven, F., Heckman, P. R. A., Havekes, R. & Meerlo, P., Oct-2020, In: Journal of Sleep Research. 29, 5, e12972.

The contribution of Parkin, PINK1 and DJ-1 genes to selective neuronal degeneration in Parkinson's disease
van der Vlag, M., Havekes, R. & Heckman, P. R. A., Aug-2020, In: European Journal of Neuroscience. 52, 4, p. 3256-3268 13 p.

Genetic manipulation of cyclic nucleotide signaling during hippocampal neuroplasticity and memory formation
Kelly, M. P., Heckman, P. R. A. & Havekes, R., Jul-2020, In: Progress in Neurobiology. 190, 21 p., 101799.

Impacts of sleep loss versus waking experience on brain plasticity: Parallel or orthogonal?
Havekes, R. & Aton, S. J., Jun-2020, In: Trends in neurosciences. 43, 6, p. 385-393 9 p.

Phosphodiesterase inhibitors roflumilast and vardenafil prevent sleep deprivation-induced deficits in spatial pattern separation
Heckman, P. R. A., Roig Kuhn, F., Raven, F., Bolsius, Y. G., Prickaerts, J., Meerlo, P. & Havekes, R., Jun-2020, In: Synapse. 74, 6, 6 p., e22150.

Transcriptional corepressor SIN3A regulates hippocampal synaptic plasticity via Homer1/mGluR5 signaling
Bridi, M., Schoch, H., Florian, C., Poplawski, S. G., Banerjee, A., Hawk, J. D., Porcari, G. S., Lejards, C., Hahn, C-G., Giese, K-P., Havekes, R., Spruston, N. & Abel, T., 12-Mar-2020, In: JCI Insight. 5, 5, 20 p., 92385.

The role of Protocadherin 9 in layer 6 of the cortex in sensory-related behavioural tasks
Hornix, B., Havekes, R. & Kas, M., Feb-2020, In: European Neuropsychopharmacology. 31, Suppl. 1, p. S39-S40 3 p.

Elucidating the role of protein synthesis in hippocampus-dependent memory consolidation across the day and night
Raven, F., Bolsius, Y. G., van Renssen, L. V., Meijer, E. L., van der Zee, E. A., Meerlo, P. & Havekes, R., 21-Jan-2020, (E-pub ahead of print) In: European Journal of Neuroscience.

Belang van slaap voor cognitief en psychologisch functioneren
Meerlo, P. & Havekes, R., 2020, *Slaapstoornissen in de psychiatrie*. Lancel, M., van Veen, M. & Kamphuis, J. (eds.). Houten: Bohn, Stafleu, Van Loghum, p. 11-27

Alzheimer's disease pathogenesis: The role of disturbed sleep in attenuated brain plasticity and neurodegenerative processes
Havekes, R., Heckman, P. R. A., Wams, E. J., Stasiukonyte, N., Meerlo, P. & Eisel, U. L. M., Dec-2019, In: Cellular Signalling. 64, 8 p., 109420.

Studying functional consequences of cofilin regulation in the sensory cortex in genetic mouse models for autism spectrum disorders
Riemersma, I., Havekes, R. & Kas, M., 20-Jun-2019.

A brief period of sleep deprivation causes spine loss in the dentate gyrus of mice
Raven, F., Meerlo, P., van der Zee, E. A., Abel, T. & Havekes, R., Apr-2019, In: Neurobiology of Learning and Memory. 160, p. 83-90

NLM special issue on sleep and hippocampal function
Havekes, R., Aton, S., Tudor, J. C. & Meerlo, P., Apr-2019, In: Neurobiology of Learning and Memory. 160, p. 1-2 2 p.

Sleep and Hippocampal Function
Havekes, R. (Guest ed.), Aton, S. J. (Guest ed.), Meerlo, P. (Guest ed.) & Tudor, J. C. (Guest ed.), Apr-2019, In: Neurobiology of Learning and Memory. 160, p. 1-172 172 p.

Multisensory cortical processing and dysfunction across the neuropsychiatric spectrum

Hornix, B. E., Havekes, R. & Kas, M. J. H., Feb-2019, In: *Neuroscience and Biobehavioral Reviews*. 97, p. 138-151

The role of sleep in regulating structural plasticity and synaptic strength: Implications for memory and cognitive function

Raven, F., Zee, van der, E., Meerlo, P. & Havekes, R., Jun-2018, In: *Sleep Medicine Reviews*. 39, p. 3-11 9 p.

Linking spatial gene expression patterns to sex-specific brain structural changes on a mouse model of 16p11.2 hemideletion

Kumar, V. J., Grissom, N. M., McKee, S. E., Schoch, H., Bowman, N., Havekes, R., Kumar, M., Pickup, S., Poptani, H., Reyes, T. M., Hawrylycz, M., Abel, T. & Nickl-Jockschat, T., 29-May-2018, In: *Translational Psychiatry*. 8, 13 p., 109.

Male-specific deficits in natural reward learning in a mouse model of neurodevelopmental disorders

Grissom, N. M., McKee, S. E., Schoch, H., Bowman, N., Havekes, R., O'Brien, W. T., Mahrt, E., Siegel, S., Commons, K., Portfors, C., Nickl-Jockschat, T., Reyes, T. M. & Abel, T., Mar-2018, In: *Molecular Psychiatry*. 23, 3, p. 544-555 12 p.

Learning induces the translin/trax RNase complex to express activin receptors for persistent memory

Park, A. J., Havekes, R., Fu, X., Hansen, R., Tudor, J. C., Peixoto, L., Li, Z., Wu, Y-C., Poplawski, S. G., Baraban, J. M. & Abel, T., 20-Sep-2017, In: *eLife*. 6, 19 p., e27872.

Mutation of neuron-specific chromatin remodeling subunit BAF53b: rescue of plasticity and memory by manipulating actin remodeling

Vogel Ciernia, A., Kramár, E. A., Matheos, D. P., Havekes, R., Hemstedt, T. J., Magnan, C. N., Sakata, K., Tran, A., Azzawi, S., Lopez, A., Dang, R., Wang, W., Trieu, B., Tong, J., Barrett, R. M., Post, R. J., Baldi, P., Abel, T., Lynch, G. & Wood, M. A., May-2017, In: *Learning & Memory*. 24, 5, p. 199-209 11 p.

The tired hippocampus: The molecular impact of sleep deprivation on hippocampal function

Havekes, R. & Abel, T., 27-Feb-2017, In: *Current opinion in neurobiology*. 44, p. 13-19 7 p.

Compartmentalized PDE4A5 Signaling Impairs Hippocampal Synaptic Plasticity and Long-Term Memory

Havekes, R., Park, A. J., Tolentino, R. E., Bruinenberg, V. M., Tudor, J. C., Lee, Y., Hansen, R. T., Guercio, L. A., Linton, E., Neves-Zaph, S. R., Meerlo, P., Baillie, G. S., Houslay, M. D. & Abel, T., 24-Aug-2016, In: *The Journal of Neuroscience*. 36, 34, p. 8936-8946 11 p.

Sleep deprivation causes memory deficits by negatively impacting neuronal connectivity in hippocampal area CA1

Havekes, R., Park, A. J., Tudor, J. C., Luczak, V. G., Hansen, R. T., Ferri, S. L., Bruinenberg, V. M., Poplawski, S. G., Day, J. P., Aton, S. J., Radwańska, K., Meerlo, P., Houslay, M. D., Baillie, G. S. & Abel, T., 23-Aug-2016, In: *eLife*. 5, 22 p., 13424.

Sleep deprivation impairs memory by attenuating mTORC1-dependent protein synthesis

Tudor, J. C., Davis, E. J., Peixoto, L., Wimmer, M. E., van Tilborg, E., Park, A. J., Poplawski, S. G., Chung, C. W., Havekes, R., Huang, J., Gatti, E., Pierre, P. & Abel, T., 26-Apr-2016, In: *Science signaling*. 9, 425, 8 p., 41.

Brain structure changes in a 16p11.2 deletion mouse model

Nickl-Jockschat, T., Jangir, V. K., Grissom, N., McKee, S., Schoch, H., Bowman, N., Havekes, R., Kumar, M., Pickup, S., Poptani, H., Reyes, T. & Abel, T., Dec-2015, p. S288-S288. 1 p.

Male-specific reward learning deficits in a mouse model of autism

Grissom, N., McKee, S., Schoch, H., Bowman, N., Havekes, R., Nickl-Jockschat, T., Reyes, T. & Abel, T., Dec-2015, p. S293-S293. 1 p.

Animal studies on the role of sleep in memory: From behavioral performance to molecular mechanisms

Havekes, R., Meerlo, P. & Abel, T., 2015, *Sleep, Neuronal Plasticity and Brain Function*. Meerlo, P., Benca, R. M. & Abel, T. (eds.). Berlin : Springer, p. 183-206 (Current Topics in Behavioral Neurosciences; vol. 25).

Chronically restricted or disrupted sleep as a causal factor in the development of depression

Meerlo, P., Havekes, R. & Steiger, A., 2015, *Sleep, Neuronal Plasticity and Brain Function*. Meerlo, P., Benca, R. M. & Abel, T. (eds.). Berlin ; Heidelberg: Springer, p. 459-481 (Current Topics in Behavioral Neurosciences; vol. 25).

Sleep deprivation and hippocampal vulnerability: Changes in neuronal plasticity, neurogenesis and cognitive function

Kreutzmann, J. C., Havekes, R., Abel, T. & Meerlo, P., 2015, In: *Neuroscience*. 309, p. 173-190

Memory deficits associated with sleep loss can be prevented by targeting a single phosphodiesterase isoform selectively in excitatory neurons of the hippocampus

Havekes, R., Choi, J. H. K., Bruinenberg, V. M., Baillie, G. S., Krainnock, K., Aton, S. J., Meerlo, P., Houslay, M. D. & Abel, T., Sep-2014, In: *Journal of Sleep Research*. 23, p. 46-46 1 p.

A presynaptic role for PKA in synaptic tagging and memory

Park, A.J., Havekes, R., Choi, J.C., Luczak, V., Nie, T., Huang, T. & Abel, T., 2014.

A presynaptic role for PKA in synaptic tagging and memory

Park, A. J., Havekes, R., Choi, J. H. K., Luczak, V., Nie, T., Huang, T. & Abel, T., 2014, In: *Neurobiology of Learning and Memory*. 114, p. 101-12 12 p.

Male-specific deficits in reinforcement learning, motivation, striatal volume, and white-matter integrity in the 16p11.2del/+ mouse model of autism

Grissom, N.M., McKee, S., Lidsky-everson, J., Schoch, H., Havekes, R., Kumar, M., Pickup, S., Kumar, V., Poptani, H., Nickl-Jockschat, T., Reyes, T.M. & Abel, T., 2014.

Memory deficits associated with sleep loss can be prevented by targeting a single phosphodiesterase isoform selectively in excitatory neurons in the hippocampus

Havekes, R., Choi, J.H., Bruinenberg, V.M., Baillie, G., Park, A.J., Day, J., Aton, S.J., Meerlo, P., Houslay, M.D. & Abel, T., 2014, In: *Journal of Sleep Research*. 23, Suppl. 1, p. 46

Regulation of hippocampal synaptic plasticity and memory by the co-repressor Sin3a through Homer1/mGluR5 signaling

Bridi, M., Schoch, H., Florian, C., Poplawski, G., Hawk, J.D., Havekes, R. & Abel, T., 2014.

Restoration of phosphorylated eukaryotic translation initiation factor 4E binding protein 2 (4EBP2) in the hippocampus rescues memory impairments due to sleep deprivation

Choi, J.H., Davis, R., Havekes, R. & Abel, T., 2014.

Sleep deprivation causes memory deficits by negatively impacting spine dynamics in the hippocampus

Havekes, R., Park, A.J., Ferri, S.L., Bruinenberg, V.M., Tudor, J.C., Day, J.P., Poplawski, S.G., Krainnock, K.S., Zhu, W.A., Aton, S.J., Radwanska, K., Meerlo, P., Houslay, M.D., Baillie, G.S. & Abel, T., 2014.

Sleep deprivation during a specific 3-hour time window post-training impairs hippocampal synaptic plasticity and memory

Prince, T.M., Wimmer, M., Choi, J., Havekes, R., Aton, S. & Abel, T., 2014, In: *Neurobiology of Learning and Memory*. 109, p. 122-130 9 p.

Targeting of a single PDE4 isoform in hippocampal neurons is sufficient to prevent cognitive impairments associated with sleep loss

Havekes, R., Park, A.J., Choi, J., Bruinenberg, V.M., Baillie, G., Day, J., Aton, S.J., Radwanska, K., Meerlo, P., Houslay, M.D. & Abel, T., 2014.

Transiently increasing cAMP levels in hippocampal neurons using a novel pharmacogenetic approach prevents cognitive impairments associated with loss of sleep

Havekes, R., Bruinenberg, V.M., Choi, J.H.K., Baumann, A., Meerlo, P. & Abel, T., 2014.

Transiently increasing cAMP levels selectively in hippocampal excitatory neurons during sleep deprivation prevents memory deficits caused by sleep loss

Havekes, R., Bruinenberg, V. M., Tudor, J. C., Ferri, S. L., Baumann, A., Meerlo, P. & Abel, T., 2014, In: The Journal of Neuroscience. 34, p. 15715-15721

Sleep, plasticity and memory from molecules to whole-brain networks

Abel, T., Havekes, R., Saletin, J. M. & Walker, M. P., 9-Sep-2013, In: Current Biology. 23, 17, p. R774-R788 15 p.

Daily Acclimation Handling Does Not Affect Hippocampal Long-Term Potentiation or Cause Chronic Sleep Deprivation in Mice

Vecsey, C. G., Wimmer, M. E. J., Havekes, R., Park, A. J., Perron, I. J., Meerlo, P. & Abel, T., Apr-2013, In: Sleep. 36, 4, p. 601-607 7 p.

Gravin is a key scaffolding protein that orchestrates PKA and β 2-adrenergic receptor signaling important for long-lasting forms of synaptic plasticity and long-term memory

Havekes, R., Huang, T., Nie, T., Canton, D. A., Park, J. A., Day, J. P., Guercio, L. A., Grimes, Q., Luczak, V., Gelman, I. H., Baillie, G. S., Scott, J. D. & Abel, T., 2013.

Sleep deprivation impairs hippocampal translation that is mediated specifically via the mTORC1 signaling pathway

Choi, J., Davis, E. J., Peixoto, L., Wimmer, M., Hernandez, P. J., Havekes, R., Pierre, P. & Abel, T., 2013.

Subregion specific PKA anchoring in the hippocampus is critical for synaptic tagging and contextual memory formation

Park, A., Havekes, R., Nie, T., Huang, T. & Abel, T., 2013.

The role of translin in LTP and memory through activity-dependent regulation of Arc and Bdnf1, as a novel target RNA-binding protein for neurological disorders.

Park, A. J., Havekes, R., Bridi, M., Baraban, J. & Abel, T., 2013.

Transiently increasing cAMP levels in hippocampal neurons using a novel pharmacogenetic approach is sufficient to prevent memory deficits caused by sleep deprivation

Havekes, R., Bruinenberg, V. M., Choi, J. H. K., Park, A. J., Baumann, A., Meerlo, P. & Abel, T., 2013.

Gravin orchestrates protein kinase A and β 2-adrenergic receptor signaling critical for synaptic plasticity and memory

Havekes, R., Canton, D. A., Park, A. J., Huang, T., Nie, T., Day, J. P., Guercio, L. A., Grimes, Q., Luczak, V., Gelman, I. H., Baillie, G. S., Scott, J. D. & Abel, T., 12-Dec-2012, In: The Journal of Neuroscience. 32, 50, p. 18137-18149 13 p.

The impact of sleep deprivation on neuronal and glial signaling pathways important for memory and synaptic plasticity

Havekes, R., Vecsey, C. G. & Abel, T., Jun-2012, In: Cellular Signalling. 24, 6, p. 1251-1260 10 p.

The cholinergic system and neostriatal memory functions

Havekes, R., Abel, T. & van der Zee, E. A., 10-Aug-2011, In: Behavioral Brain Research. 221, 2, p. 412-423 12 p.

Colocalization of protein kinase A with adenylyl cyclase enhances protein kinase A activity during induction of long-lasting long-term-potentiation

Kim, M., Park, A. J., Havekes, R., Chay, A., Guercio, L. A., Oliveira, R. F., Abel, T. & Blackwell, K. T., 30-Jun-2011, In: PLoS Computational Biology. 7, 6, 18 p., e1002084.

Coping with Sleep Deprivation: Shifts in Regional Brain Activity and Learning Strategy

Hagewoud, R., Havekes, R., Tiba, P. A., Novati, A., Hogenelst, K., Weinreder, P., Van der Zee, E. A. & Meerlo, P., Nov-2010, In: Sleep. 33, 11, p. 1465-1473 11 p.

Sleep deprivation impairs spatial working memory and reduces hippocampal AMPA receptor phosphorylation

Hagewoud, R., Havekes, R., Novati, A., Keijsers, J. N., van der Zee, E. A. & Meerlo, P., Jun-2010, In: Journal of Sleep Research. 19, 2, p. 280-288 9 p.

Post-training reversible inactivation of the hippocampus enhances novel object recognition memory

Oliveira, A. M. M., Hawk, J. D., Abel, T. & Havekes, R., Mar-2010, In: *Learning & Memory*. 17, 3, p. 155-160 6 p.

A time for learning and a time for sleep: The effect of sleep deprivation on contextual fear conditioning at different times of the day

Hagewoud, R., Whitcomb, S. N., Heeringa, A. N., Havekes, R., Koolhaas, J. M. & Meerlo, P., Jan-2010, In: *Sleep*. 33, p. 1315-1322 8 p.

Deficits in spatial memory correlate with modified {gamma}-aminobutyric acid type A receptor tyrosine phosphorylation in the hippocampus

Tretter, V., Revilla-Sanchez, R., Houston, C., Terunuma, M., Havekes, R., Florian, C., Jurd, R., Vithlani, M., Michels, G., Couve, A., Sieghart, W., Brandon, N., Abel, T., Smart, T. G. & Moss, S. J., 24-Nov-2009, In: *Proceedings of the National Academy of Sciences of the United States of America*. 106, 47, p. 20039-20044 6 p.

Genetic dissection of neural circuits and behavior in *Mus musculus*

Havekes, R. & Abel, T., 2009, In: *Advances in Genetics*. 65, p. 1-38 38 p.

Sleep deprivation impairs cAMP signalling in the hippocampus

Vecsey, C. G., Baillie, G. S., Jaganath, D., Havekes, R., Daniels, A., Wimmer, M., Huang, T., Brown, K. M., Li, X-Y., Descalzi, G., Kim, S. S., Chen, T., Shang, Y-Z., Zhuo, M., Houslay, M. D. & Abel, T., 2009, In: *Nature*. 461, 7267, p. 1122-1125 4 p.

A novel conditional genetic system reveals that increasing neuronal cAMP enhances memory and retrieval

Isiegas, C., McDonough, C., Huang, T., Havekes, R., Fabian, S., Wu, L-J., Xu, H., Zhao, M-G., Kim, J-I., Lee, Y-S., Lee, H-R., Ko, H-G., Lee, N., Choi, S-L., Lee, J-S., Son, H., Zhuo, M., Kaang, B-K. & Abel, T., 11-Jun-2008, In: *The Journal of Neuroscience*. 28, 24, p. 6220-6230 11 p.

Circadian time-place learning in mice depends on *Cry* genes

Van der Zee, E. A., Havekes, R., Barf, R. P., Hut, R. A., Nijholt, I. M., Jacobs, E. H. & Gerkema, M. P., 3-Jun-2008, In: *Current Biology*. 18, 11, p. 844-848 5 p.

Transgenic inhibition of neuronal calcineurin activity in the forebrain facilitates fear conditioning, but inhibits the extinction of contextual fear memories

Havekes, R., Nijholt, I. M., Visser, A. K. D., Eisel, U. L. M. & Van der Zee, E. A., May-2008, In: *Neurobiology of Learning and Memory*. 89, 4, p. 595-598 4 p.

Formation and adaptation of memory: Neurobiological mechanisms underlying learning and reversal learning

Havekes, R., 2008, s.n.. 176 p.

Exercise improves memory acquisition and retrieval in the Y-maze task: Relationship with hippocampal neurogenesis: Relationship With Hippocampal Neurogenesis

van der Borght, K., Havekes, R., Bos, T., Eggen, B. J. L. & van der Zee, E. A., 2007, In: *Behavioral Neuroscience*. 121, 2, p. 324 - 334 11 p.

Regional differences in hippocampal PKA immunoreactivity after training and reversal training in a spatial Y-maze task

Havekes, R., Timmer, M. & Van der Zee, E. A., 2007, In: *Hippocampus*. 17, 5, p. 338-348 11 p.

Differential involvement of hippocampal calcineurin during learning and reversal learning in a Y-maze task

Havekes, R., Nijholt, I. M., Luiten, P. G. M. & Van der Zee, E. A., 2006, In: *Learning & Memory*. 13, 6, p. 753-759 7 p.

Hippocampal cell proliferation across the day: Increase by running wheel activity, but no effect of sleep and wakefulness

van der Borght, K., Ferrari, F., Klauke, K., Roman, V., Havekes, R., Sgoifo, A., van der Zee, EA. & Meerlo, P., 2006, In: *Behavioral Brain Research*. 167, p. 36-41

