

Date: 4th April 2013

Name: Astrid C.E. Linthorst, PhD

Current post:

- Post Title: Professor of Neuroscience

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Previous posts:

2008-2011: Reader in Neuroscience, University of Bristol, Bristol, UK

2003 – 2008: Senior Lecturer in Neuroscience, University of Bristol, Bristol, UK

2000 – 2003: Research Group Head, Section of Neurochemistry, Max Planck Institute of Psychiatry, Munich, Germany

1991– 2000: Scientist, Max Planck Institute of Psychiatry, Munich, Germany

1987 – 1990: PhD Student (not a studentship in The Netherlands), Rudolf Magnus Institute for Pharmacology, University of Utrecht, Utrecht, The Netherlands

Education:

1991 – PhD, Rudolf Magnus Institute for Pharmacology, University of Utrecht, The Netherlands

1987 – Doctoral Exam Pharmacy, University of Utrecht, The Netherlands

1983 – Propaedeutic Exam Pharmacy, University of Utrecht, The Netherlands

Grants (recent):

2011-2014: The Wellcome Trust, A highly dynamic role of corticosteroid-binding globulin in the stress-induced glucocorticoid hormone response (ACE Linthorst and JMHM Reul).

2008-2012: The Wellcome Trust, Regulation of tonic currents through changes in extracellular GABA (MC Walker (UCL), A Semyanov (RIKEN) and ACE Linthorst).

2008-2011: BBSRC, Studies on the distinct control of free corticosterone levels in the brain (ACE Linthorst, JMHM Reul, SL Lightman and SK Droste).

Teaching:

Director MSc Molecular Neuroscience

Co-Director MRes Systems Neuroscience

Memberships:

ECNP, Society for Neuroscience, FENS, British Neuroscience Association, British Society for Neuroendocrinology, British Association for Psychopharmacology.

Research interests:

GABA, serotonin, noradrenaline, stress, glucocorticoid hormones, hypothalamic-pituitary-adrenal axis, psychoneuroendocrinology, animal models, animal behaviour, microdialysis, depression, anxiety.

List of Publications:

2007-2013

Kersanté F, Rowley SC, Pavlov I, Gutiérrez-Mecinas M, Semyanov A, Reul JMHM, Walker MC, Linthorst ACE (2013) A functional role for both GABA transporter-1 and GABA transporter-3 in the modulation of extracellular GABA and GABAergic tonic conductances in the rat hippocampus. *Journal of Physiology* in press.

Bhake RC, Leendertz JA, Linthorst ACE, Lightman SL (2013) Automated 24-hours sampling of subcutaneous tissue free cortisol in humans. *J Med Eng Technol* in press.

Wlodarczyk AI, Sylantyev S, Herd MB, Kersanté F, Lambert JJ, Rusakov DA, Linthorst ACE, Semyanov A, Belelli D, Pavlov I, Walker MC (2013) GABA-independent GABAA receptor openings maintain tonic currents. *J Neurosci.* 33:3905-3914.

Qian X, Droste SK, Lightman SL, Reul JMHM, Linthorst ACE (2012) Circadian and ultradian rhythms of free glucocorticoid hormone are highly synchronized between the blood, the subcutaneous tissue and the brain. *Endocrinology* 153:4346-4353.

Qian X, Droste SK, Gutiérrez-Mecinas M, Collins A, Kersanté F, Reul JMHM, Linthorst ACE (2011) A rapid release of corticosteroid-binding globulin from the liver restrains the glucocorticoid hormone response to acute stress. *Endocrinology* 152:3738-3748.

Hill LE, Droste SK, Nutt DJ, Linthorst ACE, Reul JMHM (2010) Voluntary exercise alters GABAA receptor subunit and glutamic acid decarboxylase-67 gene expression in the rat forebrain. *Journal of Psychopharmacology* 24:745-75.

Linthorst ACE, Reul JMHM (2010) The impact of stress on serotonergic neurotransmission. In: Müller CP, Jacobs BL (Eds), *Handbook of Behavioral Neurobiology of Serotonin*, Elsevier, Amsterdam, pp 475-491.

Droste SK, Collins A, Lightman SL, Linthorst ACE, Reul JMHM (2009) Distinct, time-dependent effects of voluntary exercise on circadian and ultradian rhythms and stress responses of free corticosterone in the rat hippocampus. *Endocrinology* 150:4170-4179.

Droste SK, de Groote L, Lightman SL, Reul JMHM, Linthorst ACE (2009) The ultradian and circadian rhythms of free corticosterone in the brain are not affected by gender: an in vivo microdialysis study in Wistar rats. *J Neuroendocrinol* 21:132-140.

Droste SK, de Groote L, Atkinson HC, Lightman SL, Reul JMHM, Linthorst ACE (2008) Corticosterone levels in the brain show a distinct ultradian rhythm but a delayed response to forced swim stress. *Endocrinology* 149:3244-3253.

Linthorst ACE, Flachskamm C, Reul JMHM (2008) Water temperature determines neurochemical and behavioural responses to forced swim stress: an in vivo microdialysis and biotelemetry study in rats. *Stress*, 11:88-100.

Linthorst ACE, Reul JMHM (2008) Stress and the brain: Solving the puzzle using microdialysis. *Pharmacology, Biochemistry and Behavior*, 90:163-173.

De Groote L, Linthorst ACE (2007) Exposure to novelty and forced swimming evoke stressor-dependent changes in extracellular GABA in the rat hippocampus. *Neuroscience*, 148:794-805.

Droste S-K, Chandramohan Y, Hill LE, Linthorst ACE, Reul JMHM (2007) Voluntary exercise impacts on the rat hypothalamic-pituitary-adrenocortical axis mainly at the adrenal level. *Neuroendocrinology* 86:26-37.

Linthorst ACE (2007) Microdialysis to study the effects of stress on serotonin, corticosterone and behaviour. In: Westerink BHC, Cremers TIFH (Eds), *Handbook of Microdialysis: Methods, Applications and Perspectives*, Elsevier, Amsterdam, pp 301-315.

Ten Key Prior Publications

Beekman M, Flachskamm C, Linthorst ACE (2005) Effects of exposure to a predator on behaviour and serotonergic neurotransmission in different brain regions of C57BL/6N mice. *Eur J Neurosci* 21:2825-2836.

De Groote L, Peñalva RG, Flachskamm C, Reul JMHM, Linthorst ACE (2005) differential monoaminergic, neuroendocrine and behavioural responses after central administration of corticotropin-releasing factor type 1 and type 2 agonists, *J Neurochem* 94:45-56.

Droste SK, Gesing A, Müller MB, Linthorst ACE, Reul JMHM (2003) Effects of long-term voluntary exercise on the hypothalamic-pituitary-adrenal axis in mice. *Endocrinology* 144:3012-3023.

Peñalva RG, Lancel M, Flachskamm C, Reul JMHM, Holsboer F, Linthorst ACE (2003) Effect of sleep and sleep deprivation on serotonergic neurotransmission in the hippocampus: a combined *in vivo* microdialysis/EEG study in rats. *Eur J Neurosci* 17:1896-1906.

Linthorst ACE, Peñalva RG, Flachskamm C, Holsboer F, Reul JMHM (2002) Forced swim stress activates rat hippocampal serotonergic neurotransmission involving a corticotropin-releasing hormone receptor-dependent mechanism. *Eur J Neurosci* 16: 2441-2452.

Linthorst ACE, Flachskamm C, Barden N, Holsboer F, Reul JMHM (2000) Glucocorticoid receptor impairment alters CNS responses to a psychological stressor: an *in vivo* microdialysis study in transgenic mice. *Eur J Neurosci* 12:283-291.

Linthorst ACE, Karanth S, Barden N, Holsboer F, Reul JMHM (1999) Impaired glucocorticoid receptor function evolves in aberrant physiological responses to bacterial endotoxin. *Eur J Neurosci* 11:178-186.

Linthorst ACE, Flachskamm C, Hopkins SJ, Hoadley ME, Labeur MS, Holsboer F, Reul JMHM (1997) Long-term intracerebroventricular infusion of corticotropin-releasing hormone alters neuroendocrine, neurochemical, autonomic, behavioral, and cytokine responses to a systemic inflammatory challenge. *J Neurosci* 17:4448-4460.

Linthorst ACE, Flachskamm C, Müller-Preuss P, Holsboer F, Reul JMHM (1995) Effect of bacterial endotoxin and interleukin-1 β on hippocampal serotonergic neurotransmission, behavioral activity and free corticosterone levels: an *in vivo* microdialysis study. *J Neurosci* 15:2920-2934.

Linthorst ACE, Flachskamm C, Holsboer F, Reul JMHM (1994) Local administration of recombinant human interleukin-1 β in the rat hippocampus increases serotonergic neurotransmission, hypothalamic-pituitary-adrenocortical axis activity, and body temperature. *Endocrinology* 135:520-532.