

## CV and publications

### **Ingrid Marianne Nylander (Christensson)**

University address Dept of Pharmaceutical Biosciences, Neuropharmacology, Addiction & Behaviour, Uppsala University, Box 591, 751 24 Uppsala, Sweden

#### ***Exams***

1979 MSciPharm, Faculty of Pharmacy, Uppsala University  
1986 PhD, Pharmacology, Uppsala University  
1996 Associate professor, Pharmacology, Uppsala University  
2005 Professor, Pharmacology, Uppsala University

#### ***Positions***

1980-1986 PhD student  
Doctoral thesis: Dynorphin and substance P pathways in the central nervous system. Neurochemical and functional studies, Supervisor: Prof. Lars Terenius  
1986 Lecturer at Dept of Pharmacology, Uppsala University  
1987 Postdoctoral fellowship at Dept of Psychiatry, Louisiana State University, Shreveport, Louisiana, USA. Awarded the The Swedish America Foundation Award for post doctoral studies  
1988-1989 Research position at Dept of Pharmacology, Uppsala University  
1990-1995 Research position, lecturer and director of studies at Dept of Drug Dependence Research, Karolinska Institute, Stockholm  
1995-2005 Research position, senior lecturer, director of studies at Dept of Pharmaceutical Biosciences, Division of Pharmacology, Uppsala University

#### ***Present position***

2005- Professor in Pharmacology  
PI Neuropharmacology, Addiction & Behaviour

#### **Main supervisor, PhD students**

- Karolina Ploj, 2002, *Involvement of the opioid system in high alcohol consumption. Environmental and genetic influence*, UU
- Erika Roman, 2004, *Maternal separation in rats. An experimental model for long-term effects of early life experiences on neurochemistry, voluntary ethanol intake and exploration and risk assessment behavior*, UU
- Lisa Gustafsson, 2007, *Endogenous opioids and voluntary ethanol drinking. Consequences of postnatal environmental influences in rats*, UU
- Sadia Oreland, 2009, *Maternal separation in the rat. The short- and long-term effects of early-life experience on neuropeptides, monoamines and voluntary ethanol consumption*, UU
- Loudin Daoura, 2013, *Early environment and adolescent ethanol consumption; Effects on endogenous opioids and behaviour in rats*, UU
- Sara Palm, 2014, *Early environment, adolescent alcohol drinking and neurobiological responses to drugs*, UU
- Linnea Granholm, licentiate exam 2015, *Neurobiological Consequences of Social Conditions and Alcohol Exposure in Adolescent Rats*, planned dissertation 2018

#### **Co-supervisor, PhD students**

- Maria Vrettou, ongoing
- Megha Bendre, ongoing
- Stina Lundberg, ongoing

## CV and publications

- Sara Lindholm, 2001, *Neurochemical and behavioral studies on ethanol and brain opioid interactions*, KI

### **Publications**

> 100 publications within the field of neurobiology and addiction research, with special focus on the neurobiological basis for alcohol use disorders

### **Research grants**

Major funding from Mobilisering mot narkotika, AFA Insurance, ERAB, Alcohol Research Council of the Swedish Alcohol Retailing Monopoly, The Swedish Medical Research Council

### **Teaching**

Extensive teaching experience at the basic, advanced and research level through teaching assignments and positions since 1980 Undergraduate teaching and graduate courses on for example medical, pharmaceutical, biomedical programmes in Pharmacology and Physiology, Neurobiology and Addiction

### *Awards*

- The Pedagogical award from The Pharmacy student organization, 1998
- The Uppsala University pedagogical award, 1999
- The Best student influence award from The Pharmacy student organization, 2011 and 2017

### **Communication with the society**

Extensive experience in communication to the general public as a speaker at courses directed to the community, schools, police, clinics, treatment homes, social welfare, etc. Examples:

- Lectures, seminars and information about current science to persons in health care, childhood and adolescence units, police, schools, treatment facilities, etc. and the general public

### **Textbooks**

Editor, Franck & Nylander "Beroendemedicin" textbook in addiction, 2011

Editor, Franck & Nylander "Beroendemedicin" 2<sup>nd</sup> ed, 2015

Chapter, Beroendemekanismer, in "Beroendemedicin" (Ed. Franck & Nylander) 2011, 2015

Chapter, Belöning och beroende, in "Handbok i missbrukspsykologi" (Ed. Fahlke) 2012

### **Assignments and awards**

- Vice dean, disciplinary domain Medicine and Pharmacy, 2002-2008; 2014-
- Member of the disciplinary domain board Medicine and Pharmacy, 2002-2008; 2014-
- Member of the Faculty of Pharmacy committee, 2002-2008 + 2011-
- Chairman of the Quality committee, Medicine and Pharmacy, 2008-2014
- Member of the Uppsala University Quality committee, 2008-2014
- Vice chairman, of the undergraduate committee Faculty of Pharmacy, 1999-2000
- Member of the undergraduate committee, Faculty of Pharmacy, 1998-99
- Evaluation panel member for research grants, Alcohol Research Council of the Swedish Alcohol Retailing Monopoly, 2010-2016
- Evaluation panel member for research grants, The Swedish Medical Research Council, 2013
- Evaluation panel member for research grants, Karolinska Institute ALF, 2013-15
- Executive committee member, The organization for International Narcotic Research Conference (INRC), 2010-2013
- The Swedish Council for Information on Alcohol and Other Drugs (CAN), The addiction research prize, 2015

**Original articles**

1. Lundberg S, Martinsson M, Nylander I, Roman E. Altered corticosterone levels and social play behavior after prolonged maternal separation in adolescent males but not female Wistar rats. *Hormones and Behavior* (2017) 87:137-144.
2. Wood CM, Nicolas CS, Choi SL, Roman E, Nylander I, Fernandez-Teruel A, Colombo G, Chastagnier D, Wafford KA, Collingridge GL, Wildt SJ, Conway-Campbell BL, Robinson ESJ, Lodge D. Prevalence and influence of cys407\* Grm2 mutation in Hannover-derived Wistar rats: mGlu2 receptor loss links to alcohol intake, risk taking and emotional behaviour. *Neuropharmacology* 115 (2017) 128-138 doi: 10.1016/j.neuropharm.2016.03.020
3. Segerström L, Gustavsson J, Nylander I. Minimizing Postsampling Degradation of Peptides by a Thermal Benchtop Tissue Stabilization Method. *Biopreservation and Biobanking* (2016) 14(2):172-179
4. Karlsson O, Segerström L, Sjöback R, **Nylander I**, Borén M. qPCR based mRNA quality score show intact mRNA after heat stabilization. *Biomolecular Detection Quantification* (2016) 7:21-26
5. Todkar A, Granholm L, Aljumah M, Nilsson KW, Comasco E, **Nylander I**. HPA axis gene expression and DNA methylation profiles in rats exposed to early life stress, adult voluntary ethanol drinking and single housing. *Frontiers Mol Neurosci* (2016) doi: 10.3389/fnmol.2015.00090
6. Bendre M, Comasco E, **Nylander I**, Nilsson KW, Effect of voluntary alcohol consumption on *Maoa* expression in the mesocorticolimbic brain of adult male rats previously exposed to prolonged maternal separation. *Transl Psychiatry* (2015) 5, e690; doi:10.1038/tp.2015.186
7. Vrettou M, Granholm L, Todkar A, Nilsson KW, Wallén-Mackenzie Å, **Nylander I**, Comasco E. Ethanol affects limbic and striatal presynaptic glutamatergic and DNA methylation gene expression in outbred rats exposed to early-life stress (2015) *Addiction Biol* doi:10.1111/adb.12331
8. Engel JA, **Nylander I**, Jerlhag E. A ghrelin receptor (GHS-R1A) antagonist attenuates the rewarding properties of morphine and increases opioid peptide levels in reward areas in mice. *European Neuropsychopharmacology* (2015) 25:2364-2371
9. Comasco E, Todkar A, Granholm L, Nilsson KW, **Nylander I**. Alpha 2a-Adrenoceptor Gene Expression and Early Life Stress-Mediated Propensity to Alcohol Drinking in Outbred Rats. *Int. J. Environ. Res. Public Health* (2015) 12 7154-7171
10. Granholm L, Rowley S, Ellgren M, Segerström L, **Nylander I**. Impact of adolescent ethanol exposure and adult amphetamine self-administration on evoked striatal dopamine release in male rats. *Psychopharmacology* (2015) 232:4421-4431

## CV and publications

11. Palm S and **Nylander I**. Alcohol-induced changes in opioid peptide levels in adolescent rats are dependent on housing conditions. *Alcohol Clin Exp Res* (2015) 38 (12) 2978-2987
12. Palm S, Momeni S, Lundberg S, **Nylander I**, Roman E. Risk-assessment and risk-taking behavior predict potassium- and amphetamine-induced dopamine release in the dorsal striatum of rats. *Frontiers Behav Neurosci* (2014) 8: article 236
13. Granholm L, Roman E, **Nylander I**. Single housing during early adolescence causes time-, area- and peptide-specific alterations in endogenous opioids of rat brain. *Br J Pharmacol* (2014) DOI:10.1111/bph.12753
14. Palm S and **Nylander I**. Dopamine release dynamics change during adolescence and after voluntary alcohol intake. *Plos One* (2014) 9 (5): e96337
15. Daoura L, **Nylander I**, Roman E. Qualitative differences in pup-retrieval strategies in a maternal separation paradigm. *JBBS* (2013) 3:603-616
16. Palm S, Daoura L, Roman E, **Nylander I**. Effects of rearing conditions on behavior and endogenous opioids in rats with alcohol access during adolescence. *Plos One* (2013) 8 (10):e76591
17. **Nylander I** and Roman E. Is the rodent maternal separation model a valid and effective model for studies on the early-life impact on ethanol consumption? *Psychopharmacology* (2013) 229:555-569
18. Watanabe H, Fitting S, Hussain MZ, Kononenko O, Iatsyshyna A, Yoshitake T, Kehr J, Alkass K, Druid H, Wadensten H, Andren PE, **Nylander I**, Wedell DH, Krishtal O, Hauser KF, Nyberg F, Karpyak VM, Yakovleva T, Bakalkin G. Asymmetry of the Endogenous Opioid System in the Human Anterior Cingulate: a Putative Molecular Basis for Lateralization of Emotions and Pain. *Cerebral Cortex* (2015) 25:97-108 (advance access publ. 2013 doi: 10.1093/cercor/bht204)
19. Rosén A, Lund I, Lundeberg T, **Nylander I**. Antinociceptive effects of sensory stimulation involve dynorphin B supraspinally in rats. *Acupuncture Rel Ther* (2013) 35-41.
20. **Nylander I** and Roman E. Neuropeptides as mediators of the early-life impact on the brain; implications for alcohol use disorders. **Review article**. *Frontiers Mol Neurosci* (2012) 5:article 77
21. Palm S, Roman E, **Nylander I**. Differences in basal and ethanol-induced levels of opioid peptides in Wistar rats from five different suppliers. *Peptides* (2012) 36:1-8
22. Palm S, Hävermark Å, Meyerson B, **Nylander I**, Roman E. When is a Wistar a Wistar? Behavioral profiling of outbred Wistar rats from five different suppliers using the MCSF test. *Appl Anim Behav Sci* (2011) 135 (1-2):128-137
23. Daoura L and **Nylander I**. The response to naltrexone in ethanol-drinking rats depends on early environmental experiences. *Pharmacol Biochem Behav* (2011) 99:626-633

## CV and publications

24. Oreland S, Raudkivi K, Oreland L, Harro J, Aborelius L, **Nylander I**. Ethanol-induced effects on the dopamine and serotonin systems in adult Wistar rats are dependent on early-life experiences. *Brain Res* (2011) 1405:57-68
25. Daoura L, Haaker J, **Nylander I** Early environmental factors differentially affect voluntary ethanol consumption in adolescent and adult male rats. *Alcohol Clin Exp Res* (2011) 35 (3):506-515.
26. Palm S, Roman E, **Nylander I** Differences in voluntary ethanol consumption in Wistar rats from five different suppliers. *Alcohol* (2011) 45:607-614.
27. Stanic D, Kuteeva E, **Nylander I**, Hökfelt T. Characterization of CGRP protein expression in “satellite-like” cells and dendritic arbours of the mouse olfactory bulb. *J Comp Neurol* 518(6) (2010) 770-784.
28. Oreland S, **Nylander I**, Pickering C. Prolonged maternal separation decreases granule cell number in the dentate gyrus of 3-week-old male rats. *Int J Dev Neurosci* 28 (2010) 139-144.
29. Oreland S, Gustafsson-Ericson L, **Nylander I**. Short- and long-term consequences of different early environmental conditions on central immunoreactive oxytocin and arginine vasopressin levels in male rats. *Neuropeptides* (2010) 44:391-398.
30. Daoura L, Hjalmarsson M, Oreland S, **Nylander I**, Roman E. Postpartum behavioral profiles in Wistar rats following maternal separation - altered exploration and risk-assessment behavior in MS15 dams. *Frontiers in Behavioral Neuroscience* (2010) 4 (37) 1-7.
31. Oreland S, Daoura L, Gustafsson-Ericsson L, Damberg M, Hytiä P, Oreland L, **Nylander I**. Does the transcription factor AP2b have an impact on the genetic and early environmental influence on ethanol consumption? *J Neural transmission* (2010) 117:1077-1081.
32. Oreland S, Pickering C, Göktürk C, Oreland L, Arborelius L, **Nylander I**. Two repeated maternal separation procedures differentially affect brain 5-hydroxytryptamine transporter and receptors in young and adult female and male rats. *Brain Res* 1305 (2009) S23-S49.
33. Hammarberg A, **Nylander I**, Zhou Q, Jayaram-Lindström N, Reid MS, Franck J. The effect of acamprosate on alcohol craving and correlation with hypothalamic pituitary adrenal (HPA) axis hormones and beta-endorphin. *Brain Res* 1305 (2009) S2-S6.
34. Gustafsson L, Oreland S, Hoffmann P, **Nylander I**. The impact of postnatal environment on opioid peptides in young and adult male Wistar rats. *Neuropeptides* 42 (2008) 177-191.
35. Gustafsson L, Zhou Q, **Nylander I**. Ethanol-induced effects on opioid peptides in adult male Wistar rats are dependent on early environmental factors. *Neuroscience* 146 (2007) 1137-1149.

## CV and publications

36. Roman E, Meyerson BJ, Hyytiä P, **Nylander I**. The multivariate concentric square field test reveals different behavioral profiles in male AA and ANA rats with regard to risk taking and environmental reactivity. *Behav Brain Res* 183 (2007) 195-205.
37. Roman E, Ploj K, Gustafsson L, Meyerson BJ, **Nylander I**. Variations in opioid peptide levels during the estrous cycle in Sprague-Dawley rats. *Neuropeptides* 40 (2006) 195-206.
38. Roman E, Gustafsson L, Berg M, **Nylander I**. Behavioral profiles and stress-induced corticosteroid secretion in male Wistar rats subjected to short and prolonged periods of maternal separation. *Hormones and Behavior* 50 (2006) 736-747.
39. Gustafsson L and **Nylander I**. Time-dependent alterations in ethanol intake in male Wistar rats exposed to short and prolonged daily maternal separation in a four-bottle free choice paradigm. *Alc Clin Exp Res* 30 (2006) 2208-2016.
40. Pickering C, Gustafsson L, Cebere A, **Nylander I**, Liljequist S. Repeated maternal separation of male Wistar rats alters glutamate receptor expression in the hippocampus but not the prefrontal cortex. *Brain Res* 1099 (2006) 101-108.
41. Drakenberg K, Nikoshkov N, Horváth MC, Gharibyan A, Fagergren P, Gharibyan A, Saarelainen K, Rahman S, **Nylander I**, Bakalkin G, Rajs J, Keller E, L Hurd YL.. Mu opioid receptor A118G polymorphism in association with striatal opioid neuropeptide gene expression in heroin abusers. *PNAS* 103:20 (2006) 7883-7888.
42. Roman E, Gustafsson L, Hyytiä P, **Nylander I**. Short and prolonged periods of maternal separation and voluntary ethanol intake in male and female ethanol-preferring AA rats and ethanol-avoiding ANA rats. *Alcohol Clin Exp Res* 29 (2005) 591-601.
43. Gustafsson L, Ploj K, **Nylander I**. Effects of maternal separation on voluntary ethanol intake and brain peptide systems in female Wistar rats. *Pharmacol Biochem Behav* 81 (2005) 506-516.
44. Roman E and **Nylander I**. Review article. The impact of emotional stress early in life on adult voluntary ethanol intake – results of maternal separation. *Stress* 8 (2005) 157-174.
45. Roman E, Berg M, Hyytiä P, Meyerson BJ, **Nylander I**. The concentric square field test for monitoring behavioral profiles in AA and ANA rats. In: *Proceedings of Measuring Behavior 2005, 5<sup>th</sup> International Conference on Methods and Techniques in Behavioral Research*, LPJJ Noldus, F Grieco, LWS Loijens, PH Zimmerman (Eds) Noldus Information Technology, The Netherlands, 2005, pp 461-462.
46. Roman E, Ploj K, **Nylander I**. Maternal separation has no effect on voluntary ethanol intake in female Wistar rats. *Alcohol* 33 (2004) 31-39.
47. Marinova Z, Yakovleva T, Melzig MF, Hallberg M, Nylander I, Ray K, Rodgers DW, Hauser KF, Ekström TJ, Bakalkin G. A novel soluble protein factor with non-opioid dynorphin A-binding activity. *Biochem Biophys Res Commun* 321 (2004) 202-209.

## CV and publications

48. Marmendal M, Roman E, Eriksson PCJ, **Nylander I**, Fahlke C. Maternal separation alters maternal care, but has minor effects on behavior and brain opioid peptides in adult offspring. *Dev Psychobiol* 45 (2004) 140-152.
49. Roman E, Hyytiä P, **Nylander I**. Maternal separation alters acquisition of ethanol intake in male ethanol-preferring AA rats. *Alcohol Clin Exp Res* 27 (2003) 31-37.
50. Bergström J, Ahmed M, Kreicsbergs A, **Nylander I**. Purification and quantification of opioid peptides in bone and joint tissues – a methodological study in the rat. *J Orthopaed Res* 21 (2003) 465-469.
51. Ploj K, Roman E, **Nylander I**. Long-term effects of short and long periods of maternal separation on brain opioid peptide levels in male Wistar rats. *Neuropeptides* 37 (2003) 149-156.
52. Ploj K and **Nylander I**. Long-term effects on brain opioid and opioid receptor like-1 receptors after short periods of maternal separation in rats. *Neurosci Lett* 345 (2003) 195-197.
53. Ploj K, Roman E, **Nylander I**. Long-term effects of maternal separation on ethanol intake and brain opioid and dopamine receptors in male Wistar rats. *Neuroscience* 121 (2003) 787-799.
54. Lindholm S, Ploj K, Franck J, **Nylander I**. Nociceptin/orphanin FQ tissue concentration in the rat brain. Effects of repeated ethanol administration at various post-treatment intervals. *Progr. Neuropsychopharmacol. Biol. Psychiatr.* 26 (2002) 303-306.
55. Spetea M, Rydelius G, **Nylander I**, Ahmed M, Bileviciute-Ljungar I, Lundeberg T, Svensson S, Kreicbergs A. Alteration in endogenous systems during chronic inflammatory pain conditions. *Eur J Pharmacol* 435 (2002) 245-252.
56. Ploj K, Roman E, **Nylander I**. Effects of maternal separation on brain nociceptin/orphanin FQ peptide levels in male Wistar rats. *Pharmacol. Biochem. Behav.* 73 (2002) 123-129.
57. Ploj K, Roman E, Kask A, Hyytiä P, Schiöth HB, Wikberg JES, **Nylander I**. Effects of melanocortin receptor ligands on ethanol intake and opioid peptides in alcohol-preferring AA rats. *Brain Res Bull* 59 (2002) 97-104.
58. Tan-No K, Ohshima K, Taira A, Inoue M, Nijjima F, Nakagawasai O, Tadano T, **Nylander I**, Silberring J, Terenius L, Kisara K. Antinociceptive effect produced by intracerebroventricularly administered dynorphin A is potentiated by *p*-hydroxymercuribenzoate or phosphoramidon in the mouse formalin test. *Brain Res.* 891 (2001) 274-280.
59. Ploj K, Bergström L, Roman E, **Nylander I**. Effects of neonatal handling on nociceptin/orphanin FQ and opioid peptide levels in female rats. *Pharmacol. Biochem. Behav.* 69 (2001) 173-179.

## CV and publications

60. Ackermann PW, Spetea M, **Nylander I**, Ploj K, Ahmed M, Kreicbergs A. An opioid system in connective tissue: A study of achilles tendon in the rat. *J. Histochem. Cytochem* 49 (2001) 1387-1395.
61. Bytner B, Huang Y-H, Yu L-C, Lundeberg T, **Nylander I**, Rosén A. Nociceptin/orphanin FQ into the rat periaqueductal gray decreases the withdrawal latency to heat and loading, an effect reversed by (Nphe<sup>1</sup>)nociceptin(1-13)NH<sub>2</sub>. *Brain Research* 922 (2001) 118-124.
62. Rosén A, Lundeberg T, Bytner B, **Nylander I**. Central changes in nociceptin, dynorphin B and Met-enkephalin-Arg-Phe in different models of nociception. *Brain Res.* 857 (2000) 212-218.
63. Broberger C, **Nylander I**, Geijer T, Terenius L, Hökfelt T, Georgieva J. Differential effects of intrastrially infused fully and endcap phosphothioate antisense oligonucleotides on morphology, histochemistry and prodynorphin expression in rat brain. *Mol. Brain Res.* 75 (2000) 25-45.
64. Lindholm S, Ploj K, Franck J, **Nylander I**. Repeated ethanol administration induces short- and long-term changes in enkephalin and dynorphin tissue concentration in rat brain. *Alcohol* 22 (2000) 165-171.
65. Ploj K, Roman E, Gustafsson L, **Nylander I**. Basal levels and alcohol-induced changes in nociceptin/orphanin FQ, dynorphin and enkephalin levels in C57BL/6J mice. *Brain Res. Bull.* 53 (2000) 219-226.
66. Cappendijk SLT, Hurd Y, **Nylander I**, van Ree JM, Terenius L. A heroin-, but not a cocaine-expecting, self-administration state preferentially alters endogenous brain peptides. *Eur. J. Pharmacol.* 365 (1999) 175-182.
67. Ploj K, Pham TM, Bergström L, Mohammed AH, Henriksson B, **Nylander I**. Neonatal handling in rats induces long-term effects on dynorphin peptides. *Neuropeptides* 33 (1999) 468-474.
68. Sandin J, **Nylander I**, Georgieva J, Schött PA, Ögren S-O, Terenius L. Hippocampal dynorphin B injection impairs spatial learning in rats: A k-opioid receptor-mediated effect. *Neuroscience* 85 (1998) 375-382.
69. Sandin J, **Nylander I**, Silberring J. Metabolism of b-endorphin in plasma studied by liquid chromatography-electrospray ionization mass spectrometry. *Regulatory peptides* 73 (1998) 67-72.
70. Silberring J, Li Y-M, Terenius L, **Nylander I**. Characterization of immunoreactive dynorphin B and b-endorphin in human plasma. *Peptides* 19 (1998) 1329-1337.
71. Tan-No K, Taira A, Inoue M, Ohshima K, Sakurada T, Sakurada C, **Nylander I**, Demuth H-U, Silberring J, Terenius L, Tadano T, Kisara K. Intrathecal administration of p-hydroxymercuribenzoate or phosphoramidon/bestatin-combined induces antinociceptive effects through different opioid mechanisms. *Neuropeptides* 32 (1998) 411-415.



## CV and publications

72. Vlaskovska M, Schramm M, **Nylander I**, Kasakov L, You Z-B, Herrera-Marschitz M, Terenius L. Opioid effects on  $^{45}\text{Ca}^{2+}$  uptake and glutamate release in rat cerebral cortex in primary culture. *J. Neurochem.* 68 (1997) 517-524.
73. Tan-No K, Terenius L, Silberring J, **Nylander I**. Levels of dynorphin peptides in the central nervous system and pituitary gland of the spontaneously hypertensive rat. *Neurochem. Int.* 31 (1997) 27-32.
74. **Nylander I**, Stenfors C, Tan-No K, Mathé A, Terenius L. A comparison of microwave irradiation and decapitation. Basal levels of dynorphin and enkephalin peptides and the effect of morphine treatment on dynorphin peptides. *Neuropeptides* 31 (1997) 357-365.
75. Vlaskovska M, **Nylander I**, Schramm M, Hahne S, Kasakov L, Silberring J, Terenius L. Opiate modulation of dynorphin conversion in primary cultures of rat cerebral cortex. *Brain Res.* 760 (1997) 85-93.
76. Tan-No K, Taira A, Inoue M, Ohshima K, Sakurada T, Sakurada C, **Nylander I**, Demuth H-U, Silberring J, Terenius L, Abe Y, Tadano T, Kisara K. Comparison of cysteine and serine protease inhibitors on dynorphin B-induced antinociception in the mouse capsaicin test. *Pain Research* 12 (1997) 59-64.
77. Sandin J, Tan-No K, Kasakov L, **Nylander I**, Winter A, Silberring J, Terenius L. Differential metabolism of dynorphins in substantia nigra, striatum and hippocampus. *Peptides* 18 (1997) 949-956.
78. Tan No K, Taira A, Sakurada T, Inoue M, Sakurada S, Tadano T, Sato T, Sakurada C, **Nylander I**, Silberring J, Terenius L, Kisara K. Inhibition of dynorphin-converting enzymes prolongs the antinociceptive effect of intrathecally administered dynorphin in the mouse formalin test. *Eur. J. Pharmacology* 314 (1996) 61-67.
79. Franck J, **Nylander I**, Rosén A. Met-enkephalin inhibits 5-hydroxytryptamine release from the rat ventral spinal cord via  $\delta$  opioid receptors. *Neuropharmacology* 35 (1996) 743-748.
80. Herrera-Marschitz M, You Z-B, Goiny M, Meana JJ, Silveira R, Godukhin OV, Chen Y, Espinoza S, Pettersson E, Loidl CF, Lubec G, Andersson K, **Nylander I**, Terenius L, Ungerstedt U. On the origin of extracellular glutamate levels monitored in the basal ganglia of the rat by in vivo microdialysis. *J. Neurochem.* 66 (1996) 1726-1735.
81. You Z-B, Herrera-Marschitz M, **Nylander I**, Goiny M, Kehr J, Ungerstedt U, Terenius L. Effect of morphine on dynorphin B and GABA release in the basal ganglia of rats. *Brain Res.* 710 (1996) 241-248.
82. You Z-B, Herrera-Marschitz M, Pettersson E, **Nylander I**, Goiny M, Shou H-Z, Kehr J, Godukhin O, Hökfelt T, Terenius L, Ungerstedt U. Modulation of neurotransmitter release by cholecystinin in neostriatum and substantia nigra of the rat: regional and receptor specificity. *Neuroscience*, 74 (1996) 793-804.

## CV and publications

83. **Nylander I**, Vlaskovska M, Terenius L. The effects of morphine treatment and morphine withdrawal on the dynorphin and enkephalin systems in Sprague-Dawley rats. *Psychopharmacology*, 118 (1995) 391-400.
84. **Nylander I**, Vlaskovska M, Terenius L. Brain dynorphin and enkephalin systems in Fischer and Lewis rats: effects of morphine tolerance and withdrawal. *Brain Res.*, 683 (1995) 25-35.
85. Georgieva J, Heilig M, **Nylander I**, Herrera-Marschitz M, Terenius L. In vivo antisense inhibition of prodynorphin expression in rat striatum: dose-dependence and sequence specificity. *Neurosci. Lett.*, 192 (1995) 69-71.
86. **Nylander I**, Tan-No K, Winter A, Silberring J. Processing of prodynorphin-derived peptides in striatal extracts. Identification by electrospray ionization mass spectrometry hyphenated to size-exclusion chromatography *Life Sci.*, 57 (1995) 123-129.
87. Melzig MF, **Nylander I**, Vlaskovska M, Terenius L.  $\beta$ -endorphin stimulates proliferation of small lung carcinoma cells *in vitro* via non-opioid binding sites. *Exp. Cell Res.* 219 (1995) 471-476.
88. Castel M-N, Morino P, **Nylander I**, Terenius L, Hökfelt T. Differential dopaminergic regulation of the neurotensin striatonigral and striatopallidal pathways in the rat. *Eur. J. Pharmacol.*, 262 (1994) 1-10.
89. **Nylander I**, Hyytiä P, Forsander O, Terenius L. Differences between alcohol-preferring (AA) and alcohol-avoiding (ANA) rats, in the prodynorphin and proenkephalin systems. *Alcohol. Clin. Exp. Res.*, 18 (1994) 1272-1279.
90. You Z-B, **Nylander I**, Herrera-Marschitz M, O'Connor WT, Goiny M, Terenius L. The striatonigral dynorphin pathway of the rat studied with in vivo microdialysis. I: Effects of  $K^+$ -depolarization, lesions and peptidase inhibition. *Neuroscience*, 63 (1994) 415-425.
91. You Z-B, Herrera-Marschitz M, **Nylander I**, Goiny M, O'Connor WT, Ungerstedt U, Terenius L. The striatonigral dynorphin pathway of the rat studied with in vivo microdialysis. II: Effects of dopamine  $D_1$  and  $D_2$  receptor agonists. *Neuroscience*, 63 (1994) 427-434.
92. You Z-B, Pettersson E, Herrera-Marschitz M, Hökfelt T, Terenius L, **Nylander I**, Goiny M, Hughes J, O'Connor WT, Ungerstedt U. Modulation of striatal aspartate and dynorphin B release by cholecystokinin (CCK-8) studied in vivo with microdialysis. *NeuroReport*, 5 (1994) 2301-2304.
93. Bakalkin G, **Nylander I**, Terenius L. Endogenous opioids in opiate addiction, influence of genotype and phenotype. *Eur Neuropsychopharm* 3 (1993) 221-222.
94. **Nylander I**, Sakurada T, LeGreves P, Terenius L. Levels of dynorphin peptides, substance P and CGRP in the spinal cord after subchronic administration of morphine in the rat. *Neuropharmacology*, 30 (1991) 1219-1223.

## CV and publications

95. Liminga U, Johansson P, **Nylander I**, Gunne L-M. Intranigral infusion of enkephalins elicits dyskinetic biting in rats. *Psychopharmacology*, 99 (1989) 299-303.
96. Ceccatelli S, Hökfelt T, Hallman H, **Nylander I**, Terenius L, Elde R, Brownstein M. Immunohistochemical analysis of the effects of cysteamine on somatostatin like immunoreactivity in the rat central nervous system. *Peptides*, 8 (1987) 371-384.
97. Nyberg F, **Nylander I**. Dynorphin A immunoreactivity in human cerebrospinal fluid. *Regulatory Peptides*, 17 (1987) 159-166.
98. **Nylander I**, Terenius L. Dopamine receptors mediate alterations in striato-nigral dynorphin and substance P pathways. *Neuropharmacology*, 26 (1987) 1295-1302.
99. Nyberg F, **Nylander I**, Terenius L. Enkephalin-containing polypeptides in human cerebrospinal fluid. *Brain Res.*, 371 (1986) 278-286.
100. **Christensson-Nylander I**, Herrera-Marschitz M, Staines W, Hökfelt T, Terenius L, Ungerstedt U, Cuello C, Oertel WH, Goldstein M. Striato-nigral dynorphin and substance P pathways in the rat. I: Biochemical and immunohistochemical studies. *Exp. Brain Res.*, 64 (1986) 169-192.
101. Herrera-Marschitz M, **Christensson-Nylander I**, Sharp T, Staines W, Hökfelt T, Terenius L, Ungerstedt U. Striato-nigral dynorphin and substance P pathways in the rat. II: Functional analysis. *Exp. Brain Res.*, 64 (1986) 193-207.
102. **Nylander I**, Terenius L. Chronic haloperidol and clozapine differently affect dynorphin and substance P peptides in the basal ganglia of the rat. *Brain Res.*, 380 (1986) 34-41.
103. **Christensson-Nylander I**, Terenius L. Dynorphin peptides in the human substantia nigra. *Neuropeptides*, 6 (1985) 391-396.
104. **Christensson-Nylander I**, Nyberg F, Ragnarsson U, Terenius L. A general procedure for analysis of proenkephalin B derived opioid peptides. *Regulatory Peptides*, 11 (1985) 65-76.
105. Vincent SR, Dalsgaard CJ, Schultzberg M, Hökfelt T, **Christensson I**, Terenius L. Dynorphin immunoreactive neurons in the autonomic nervous system. *Neuroscience*, 11 (1984) 973-987.
106. Dalsgaard CJ, Vincent SR, Hökfelt T, **Christensson I**, Terenius L. Separate origins for the dynorphin and enkephalin immunoreactive fibers in the inferior mesenteric ganglion of the guinea pig. *J. Comp. Neurol.*, 221 (1983) 482-489.
107. Bergström L, **Christensson I**, Folkesson R, Stenström B, Terenius L. An ion-exchange chromatography and radioimmunoassay procedure for measuring opioid peptides and substance P. *Life Sci.*, 33 (1983) 1613-1619.
108. Vincent SR, Hökfelt T, **Christensson I**, Terenius L. Dynorphin immunoreactive neurons in the central nervous system of the rat. *Neurosci. Lett.*, 33 (1982) 185-190.

## CV and publications

109. Vincent S, Hökfelt T, **Christensson I**, Terenius L. Immunohistochemical evidence for a dynorphin immunoreactive striato-nigral pathway. *Eur. J. Pharmacol.*, 85 (1982) 251-252.

### Book chapters:

1. Palm S and **Nylander** Alcohol and endogenous opioids. In *Neuropathology of drug addictions and substance misuse. Common substances of abuse; tobacco, alcohol, cannabinoids and opioids* (Preedy VR Ed.) Volume 1, 37 (in press).
2. **Nylander I**, Silberring J. Opioid peptides in drug dependence and neurological diseases. In: *Neurochemical markers of degenerative nervous diseases and drug addiction*. Eds: Qureshi GA, Parvez H, Caudy P, Parvez S. *Progress in HPLC-HPCE Vol. 7*, VSP, Utrecht, The Netherlands, 1998.
3. Nyberg F, **Christensson-Nylander I**, Terenius L. Measurements of opioid peptides in biologic fluids by radioimmunoassay. In: *Handbook of Experimental Pharmacology*, Vol. 82, 227-253. Springer-Verlag, Berlin, Heidelberg, 1987.
4. Herrera-Marschitz M, **Nylander I**, Reid M, Sharp T, Hökfelt T, Terenius L, Ungerstedt U. Different functional roles for substance P and dynorphin in the striato-nigral pathways of the rat. In: *Substance P and Neurokinins*. Montreal, New York, Springer-Verlag, 1986.
5. Hökfelt T, Vincent SR, Dalsgaard CJ, Herrera-Marschitz M, Ungerstedt U, Schultzberg M, **Christensson I**, Terenius L. Some aspects on distribution and role of opioid peptides in the central and peripheral nervous system. In: *Central and peripheral endorphins: Basic and clinical aspects*. *Frontiers in Neuroscience*, Vol.1. Eds: Eugenio E. Muller and Andrea R. Genazzani, Raven Press, New York, 1984

### Nationella publikationer

Franck J & **Nylander I** (red.) *Beroendemedicin* 2 ed, Studentlitteratur, 2015

**Nylander I**. Beroendemekanismer, I *Beroendemedicin* 2 ed (Franck & Nylander red.), Studentlitteratur, 2015

**Nylander I**. Belöning och beroende. Effekter av missbruksdroger på hjärnan, I *Handbok i missbrukspsykologi* (Fahlke red.), 2012

Franck J & **Nylander I** (red.) *Beroendemedicin*, Studentlitteratur, 2011

**Nylander I**. Beroendemekanismer, I *Beroendemedicin* (Franck & Nylander red.), Studentlitteratur, 2011

Medverkande forskare i "Steget före" – forskare om hur framtidens vuxna mår idag. *Pocketerad populärvetenskap*, Vetenskapsrådet, 2009

**Nylander I**. Grundutbildning vid farmaceutiska fakulteten, Uppsala universitet – en kontinuerlig utveckling av internationellt konkurrenskraftiga program av hög kvalitet. I *Från grundutbildningsinstitut till akademiskt läkemedelscentrum Farmaceutiska fakulteten 40 år vid Uppsala universitet 1968-2008* (Nyberg, ansvarig utgivare; Carlsson red.). ISBN: 978-91-506-1998-0, 2008