ZNZ Zentrum für Neurowissenschaften Zürich
Neuroscience Center Zurich

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ZNZ SYMPOSIUM 2010

17 September 2010

08.30 – 18.15

ETHZ-Hauptgebäude

Rämistrasse 101

8092 Zürich

OVERVIEW of the POSTER ABSTRACTS (listed by topics)

NEURAL BASIS OF BEHAVIOR

Group Leader

COGNITIVE NEUROSCIENCE AND NEUROPSYCHOLOGY

Group Leader

AGING AND DISORDERS OF THE NERVOUS SYSTEM

Poster Abstract number(s)

Group Leader

COMPUTATION AND MODELING

Group Leader

BIOMEDICAL TECHNOLOGY AND IMAGING

Group Leader

POSTER ABSTRACTS

DEVELOPMENT AND REGENERATION

Group Leader: REBECCA ELSÄSSER

1 The role of microvillar cells as a linker between degenerating sensory neurons and stem cells: S. Pfister, J.-M. Fritschy, R. Elsaesser

Group Leader: MICHAEL HENGARTNER

2 ZFP-1/AF10 acts in parallel to HSPGs in the control of axon guidance during *C. elegans* nervous system development: S. Gysi, R. Egli, M. Hengartner

Group Leader: MARTIN E. SCHWAB

3 Back seat driving: anatomical substrates of spontaneous functional recovery from forelimb stroke: M.L. Starkey, C. Bleul, M. Gullo, B. Zörner, N. Lindau, T. Mueggler, A. Ghosh, M. Rudin, M.E. Schwab

Group Leader: ESTHER STOECKLI

4 Comparative analysis of the molecular mechanisms causing fetal alcohol syndrome (FAS) and CRASH syndrome: L. Weber, E.T. Stoeckli

Group Leader: UELI SUTER

5 Does ß1-integrin pathway control adult neurogenesis?: C. Porcheri, S. Jessberger, U. Suter

SYNAPTIC TRANSMISSION AND PLASTICITY

Group Leader: URS GERBER

6 A novel mechanism mediated by Group II mGluRs in the inhibition of hippocampal mossy fiber transmission: J. Ster, C. Corti, M.A. Corsi, F Ferraguti, U. Gerber

Group Leader: KEVAN MARTIN

7 Dopamine innervation in macaque prefrontal cortex: the view from the neuropil: I.A. Spühler, R. Bopp, K. Martin

Group Leader: PETER SONDEREGGER

8 Rapid and reversible spine head filopodia formation in response to muscarinic receptor activation: P. Schätzle, J. Ster, U. Gerber, P. Sonderegger, J. María Mateos

Group Leader: HANNS ULRICH ZEILHOFER

9 Endocannabinoid modulation of glycine receptors: structure-activity profiles and modulatory sites within the receptor topology: G.E. Yévenes, H.U. Zeilhofer

10 Molecular organization of $GABA_A$ receptor subtypes in the spinal cord dorsal horn: J. Paul, J.-M. Fritschy, H.U. Zeilhofer

MOLECULAR AND CELLULAR NEUROSCIENCE

Group Leader: HELMUT BERTALANFFY

11 Downregulation in the expression pattern of claudin-5, occludin and glucose transporter 1 in endothelial cells of human cerebral cavernous malformations (CCMs): H. Schneider, N.H. Ulrich, K. Frei, H. Bertalanffy

Group Leader: STEVEN A. BROWN

12 Light can epigenetically reprogram the circadian clock: A. Azzi, A. Casserly, S.A. Brown

13 Molecular biomarkers for human inter-individual differences: L. Cuninkova, E. Moriggi, S.A. Brown

Group Leader: JEAN-MARC FRITSCHY

14 Role of $GABA_A$ receptors in regulating adult hippocampal neurogenesis: Tonic and phasic inhibition distinctly regulate migration and differentiation of newborn dentate gyrus granule cells: V. Duveau, J.-M. Fritschy

15 SUMO pathway regulates inhibitory synapses by acting on gephyrin: H. Ghosh, S. Messner, M. Hottiger, J.-M. Fritschy, S.K. Tyagarajan

Group Leader: SEBASTIAN JESSBERGER

16 Molecular mechanisms underlying neuronal differentiation and integration of adult-born hippocampal neurons: O. Karalay, F.K. Borgmann, K. Vadodaria, S. Jessberger

17 Identification of novel pathways regulating adult neurogenesis using transcriptome analysis: O. Bracko, S. Braun, L. Zurkirchen, M. Knobloch, S. Jessberger

Group Leader: HANS-PETER LIPP

18 Sustained pool of hippocampal neurogenic precursor cells in senescent p66Shc-/- mice: F. Klaus, S. Nötzli, A. Berry, F. Cirulli, M. Giorgio, P.G. Pelicci, H.-P Lipp, I. Amrein

Group Leader: MARTIN E. SCHWAB

19 Pincher-mediated Nogo-A signaling: A. Joset, D.A. Dodd, S. Halegoua, M.E. Schwab

Group Leader: SUSANNE WALITZA
(ZNZ Associate, Department of Child and Adolescent Psychiatry, UZH)

20 Effects of d/l threo-Methylphenidate enantiomers on catecholaminergic enzyme activities: E. Grünblatt, J. Bartl, S. Hofmann, A. Borst, P. Riederer, S. Walitza

21 Gene expression profiling in brains of prenatal-stressed mice: E. Grünblatt, H. Bielas, C. Brünahl, P. Arck, S. Walitza

Group Leader: KATHRIN ZAUGG
(ZNZ Associate, Department of Radiation Oncology, USZ)

22 The CPT1C 5'UTR contains a repressing upstream open reading frame that is regulated by cellular energy availability and AMPK: I. Lohse, J. Feng, U.M. Lütolf, T.W. Mak, K. Zaugg

23 CPT1C promotes invasion as well as sensitivity to metabolic stress in tumour cells: I. Lohse, J. Feng, U.M. Lütolf, T.W. Mak, K. Zaugg

SENSORY SYSTEMS

Group Leader: ARMIN CURT

24 Segmental sensory assessment reveals topographic differences in cervical and trunk dermatomes: J. Haefeli, J. Blum, A. Curt

Group Leader: BJÖRN KAMPA

25 Learning at the movies: how repeated presentations of natural movies increase the response reliability of neurons in mouse visual cortex: P. Molina-Luna, F. Helmchen, B.M. Kampa

Group Leader: SHIH-CHII LIU

26 Event-based 64-channel binaural silicon cochlea with Q enhancement mechanisms: S.-C Liu, A. van Schaik, B. Minch, R. Berner, T. Delbruck

Group Leader: KEVAN MARTIN

27 Bouton clusters of pyramidal neurons: E. Rüsch, S. Roth, K. Martin

28 Heterogeneity in responses of neighboring neurons in cat primary visual cortex: S. Schröder, K. Martin

Group Leader: STEPHAN NEUHAUSS

29 Expressional and functional analysis of mGluR6 in the zebrafish retina: M. Haug, Y.-Y. Huang, M. Gesemann, S. Neuhauss

Group Leader: DOMINIK STRAUMANN

30 Investigation of the influence of gaze position on human rotational vestibulo-ocular reflex in darkness: E. Khojasteh, C.J. Bockisch, D. Straumann, S. Hegemann

MOTOR SYSTEMS

Group Leader: GRÉGOIRE COURTINE

31 Non-human primates show extensive functional recovery compared to rats after partial spinal cord injuries: L. Friedli, E.S. Rosenzweig, D. Jendrich, S.C. Strand, A.R. Ferguson, P. Musienko, R.R. Roy, H. Zhong, M.S. Beattie, J.C. Bresnahan, M.H. Tuszynski, V.R. Edgerton, G. Courtin

32 Neurorehabilitative interventions restore voluntary locomotor activities following severe spinal cord injury: R. van den Brand, J. Heutschi, L. Friedli, M. Hürlimann, N. Kaufmann, K. Bartholdi, M. Roth, N. Dominici, P. Musienko, G. Courtine

Group Leader: VOLKER DIETZ

33 Locomotion in stroke subjects: interaction between unaffected and affected side: E. Kloter, M. Wirz, V. Dietz

Group Leader: HUUB VAN HEDEL

34 Is automated locomotor training better than strength training after incomplete spinal cord injury?: R. Labruyère, H. van Hedel

Group Leader: ANDREAS MEYER-HEIM

35 Immediate effects of a robotic assisted gait training on balance skills in children with cerebral palsy: E. Keller, T. Schuler, R. Müller, A. Meyer-Heim

36 Clinical evaluation of virtual reality based Paediatric Interactive Therapy System (PITS) for neurorehabilitation of children with cerebral palsy: K. Wick, A. Spack, K. Eng, L. Holper, D. Kiper, E. Chevrier, P. Pyk, L. Jäncke, A. Meyer-Heim

Group Leader: ROBERT RIENER

37 Changes in heart rate, blood pressure and respiration in vegetative state patients during therapy on the dynamic tilt table Erigo: L. Bütler, M. Wieser, R. Riener

Group Leader: DOMINIK STRAUMANN

38 Zebrafish as a behavioural model for infantile nystagmus syndrome: M.Ying-Yu Huang, S. Neuhauss, D. Straumann

NEURAL BASIS OF BEHAVIOR

Group Leader: RICHARD HAHNLOSER

39 Involvement of auditory association areas in zebra finch song restoration: A. Canopoli, J.A. Herbst, R. Hahnloser

40 Influence of chronic HVC stimulation on song development in juvenile zebra finch: A. Vyssotski, J. Herbst, A. Kotowicz, R. Hahnloser

Group Leader: FRITJOF HELMCHEN

41 Chronic two-photon imaging of barrel cortex population activity in awake head-fixed mice: D.J. Margolis, K. Schulz, I. Schrepfer, H. Lütcke, S. Kügler, M.T. Hasan, F. Helmchen

Group Leader: STEPHAN NEUHAUSS

42 Automated method for testing visual and cognitive function of adult zebrafish: K.P. Mueller, S. Neuhauss

Group Leader: FRANZ VOLLENWEIDER

43 Nonconscious and conscious emotional face processing in the 5-HT_{2A} model of altered states of consciousness using event-related potentials (ERPs): A. Schmidt, M. Kometer, P.A. Csomor, R. Bachmann, F.X. Vollenweider

Group Leader: BENJAMIN YEE

44 Increased neural proliferation and modification of hippocampus-dependent classical conditioning by forebrain neuronal glycine transporter 1 deletion: S. Dubroqua, P. Singer, R. Fiorelli, D. Boison, O. Raineteau, J. Feldon, B.K. Yee

COGNITIVE NEUROSCIENCE AND NEUROPSYCHOLOGY

Group Leader: DANIEL BRANDEIS

45 EEG-BOLD coupling of the adolescent brain: R. Lüchinger, L. Michels, E. Martin, D. Brandeis

46 Preliminary tomographic neurofeedback results from children with ADHD: S. Maurizio, M. Liechti, H. Heinrich, G. Thalmann, L. Meier, Y. Schwitter, L. Valko, M. Döhnert, M. Mächler, U. Maurer, S. Walitza, H.-C. Steinhausen, L. Jäncke, R. Drechsler, D. Brandeis

Group Leader: PETER BRUGGER

47 Amputation desire: no alleviation by caloric vestibular stimulation: L.M. Hilti, C. Tamagni, A. Palla, P. Brugger

Group Leader: LUTZ JÄNCKE

48 Functional brain network efficiency predicts intelligence: N. Langer, A. Pedroni, L.R.R. Gianotti, J. Hänggi, D. Knoch, L. Jäncke

Group Leader: HENNRIC JOKEIT

49 Association between structural abnormalities and fMRI response in the amygdala in patients with temporal lobe epilepsy: S. Broicher, G. Kuchukhidze, T. Grunwald, G. Krämer, M. Kurthen, E. Trinka, H. Jokeit

Group Leader: SPYROS KOLLIAS

50 Neural correlates of lexical and figural ambiguity processing: B. v Keisker, S. Cappa, S. Kollias, M. Tettamanti

Group Leader: DIETRICH LEHMANN

51 Subjectively experienced quality of breath counting and EEG LORETA lagged coherence: P. Milz, P. Faber, R: Pascual-Marqui, K. Kochi, D. Lehmann

52 Correlation between regional brain activity and belief in paranormal phenomena: F. Schlegel, P. Faber, R. Pascual-Marqui, K. Kochi, D. Lehmann

53 Believers in paranormal phenomena show opposite temporal pattern than skeptics in the syntax of EEG microstates: F. Schlegel, P. Faber, P. Milz, K. Kochi, D. Lehmann,

Group Leader: HANS-PETER LIPP

54 Testing cognitive navigation: Homing pigeons fly to two different goals: N. Blaser, G. Dell'Omo, J. Nair, V. Meskenaite, H.-P. Lipp

Group Leader: BORIS B. QUEDNOW

55 Impaired joint attention in cocaine users: K. Preller, L. Hulka, D. Jenni, B.B. Quednow

56 Social decision-making and impulsivity in recreational and dependent cocaine users: L. Hulka, C. Eisenegger, D. Jenni, K. Preller, B.B. Quednow

Group Leader: ROBERT RIENER

57 Cognimat – A virtual reality device for cognitive rehabilitation of dementia: B. Buss, D. Kiper, C. Hock, R.M. Nitsch, R. Riener

Group Leader: MARTIN WOLF

58 fNIRS: inverse oxygenation in response to motor imagery: L. Holper, D. Shalom, M. Sigman, M. Wolf

Group Leader: FRANZ VOLLENWEIDER

59 Impact of neurochemical manipulation on sensory gating in healthy subjects with low gating levels: P.A. Csomor, F.X. Vollenweider

Group Leader: BENJAMIN YEE

60 Effects on spatial learning and memory by genetic modification of adenosine kinase expression: P. Singer, S. McGarrity, P. Svrckova, J. Feldon, D. Boison, B.K. Yee

AGING AND DISORDERS OF THE NERVOUS SYSTEM

Group Leader: ADRIANO AGUZZI

61 Luminescent conjugated polymers: a new prion-interacting scaffold: I. Margalith, S. Hornamann, J. Falsig, P. Nilsson, C. Suter, P. Schwarz, A. Aguzzi

Group Leader: BURKHARD BECHER

62 Il-12 family cytokines in rejection of experimental glioma: J. vom Berg, A. Haimovici, S. Haller, B. Becher

Group Leader: MARTIN KECK

63 The Zurich algorithm-guided treatment trial: Comparison of a stepwise drug treatment algorithm and treatment as usual in patients suffering from depression: T. Montani, A. Zumstein, C. Lengen, R. Bachmann, T. Ingenbleek, M. Pitterl, M. Adli, G. Berger, H.-J. Haug, M.E. Keck

Group Leader: IRENE KNÜSEL

64 The effect of combined pre- and postnatal viral infection on AD-like neuropathology in wild-type mice: A. Manalastas, M. Hilfiker, I. Knuesel

65 Localization of Reelin in the postmortem human hippocampal formation: T. Notter, J. Doehner, J.-M. Fritschy, I. Knuesel

Group Leader: UWE KONIETZKO

66 Nuclear signaling by the APP family members: U. Konietzko, Z.V. Goodger, A. Trutzel, R.M. Nitsch

67 Analysis of Aß-mediated disruption of synaptic plasticity in transgenic arcAß mice: A. Trutzel, M. Knobloch, R.M. Nitsch, U. Konietzko

Group Leader: ULRICH MEHNERT
(ZNZ associate, University Clinic Balgrist)

68 Is EEG a feasible method to investigate cortical activation due to intravesical electric and S3 dermatome heat stimulation?: F. Gregorini, J. Wöllner, U. Mehnert

69 The cortical substrate of bladder control in SCI and the effect of peripheral dorsal genital nerve stimulation: U. Mehnert, L. Michels, M.-Z. Zempleni, B. Schurch, S. Kollias

Group Leader: ROGER M. NITSCH

70 Targeted drug delivery against beta-amyloidosis in Alzheimer's disease mouse models by using focused ultrasound technology: L. Strobel, Z. Kovacs; B. Werner; R.M. Nitsch

71 Reduced B-cell memory for Abeta correlates with cognitive deficits in Alzheimer's disease: A. Szodorai, C. Marty, C. Hock, R.M. Nitsch

protecting factor against the development or the progression of brain beta-amyloidosis in AD

72 In vitro selection of Abeta-binding molecules: M.l. Hanenberg, M.l. Maier, P. Parizek, F. Wirth, A. Plückthun, R.M. Nitsch

Group Leader: LAWRENCE RAJENDRAN

73 Mapping the membrane trafficking pathways involved in the production of Alzheimer's disease β-amyloid peptide: B. Felmy, L. Rajendran

74 **Cell biology of non-amyloid substrates of BACE1:** S. Ben Halima, M. Willem, S. Mishra, A. Caflisch, C. Haass, L. Rajendran

Group Leader: HANS STASSEN

75 **Polypharmacy in psychiatry: Clinical practice versus empirical evidence:** K. Lötscher, I.G. Anghelescu, S. Braun, R. Bridler, H.H. Stassen

76 **Characteristic sleep disturbance patterns in depression:** S. Braun, I.G. Anghelescu, H. Böker, K. Lötscher, D. Rujescu, C. Scharfetter, D. Riemann, A. Szegedi, H.H Stassen

Group Leader: GHAZALEH TABATABAI

77 **Accumulation of ceramide sensitizes glioma cells to irradiation and alkylating chemotherapy *in vitro*:** D. Gramatzki, C. Herrmann, M.Weller, G.Tabatabai

78 **Real-time monitoring glioma-mediated attraction of bone marrow-derived hematopoietic progenitor cells *in vivo:*** K. Hasenbach, S. Wiehr, C. Herrmann, T. Bolmont, S. Grathwohl, M.Jucker, M.Weller, C. Lengerke, B. Pichler, G.Tabatabai

Group Leader: NICOLAS TRICAUD

79 **Stop rolling now! : Mammalian Disc-Large 1 interacts with PTEN to curb myelination in peripheral nerves:** L. Cotter, M. Oezcelik, C. Jacob, J. Pereira, R. Baumann, V. Locher, J. Relvas, U. Suter, N. Tricaud

Group Leader: BEAT THÖNY

80 **Atypical autism associated with the heterozygous Gly56Ala allele of the *SLC6A4* serotonin transporter gene and low serotonin turnover in the CNS:** D. Adamsen, D. Meili, N. Blau, V. Ramaekers, B. Thöny

81 **A murine *Pts* model to study its role in BH_4 deficiency and monoamine neurotransmitter function and contribution to human disease:** D. Adamsen, B. Ledermann, R. Scavelli, N. Blau, B. Thöny

Group Leader: MICHAEL WELLER

82 **Mechanisms of neuroprotection in ischemic tolerance – the role of inhibition:** J. Artmann, M. Rudin, S. Wegener

83 The integrin inhibitor cilengitide interferes with TGF-β signalling in malignant glioma cells: M. Silginer, I. Tritschler, P. Roth, M. Weller

84 Acquired resistance to temozolomide in glioma cells is mediated by different mechanisms: C. Happold, P. Roth, M. Weller

85 Immunological characterization of glioma stem-like cells: F. Wolpert, G. Eisele, P. Roth, G. Tabatabai, K. Frei, M. Weller

COMPUTATION AND MODELING

Group Leader: RODNEY DOUGLAS

86 A reward-modulated Hebbian learning rule for decision making: M. Pfeiffer, R. Douglas

87 Maze navigation using factor graphs: D. Goehlsdorf, M. Cook

88 Belief-propagation as an implicit meta-phenomenon of spike-based processing: A. Steimer, R. Douglas

Group Leader: GIACOMO INDIVERI

89 Methods and tools for developing distributed multi-chip neuromorphic systems: E. Neftci, D. Fasnacht, S. Sheik, F. Stefanini, S. Moradi, E. Chicca, G. Indiveri

90 Neural computational models uising distributed multi-chip neuromorphic systems: F. Stefanini, E. Neftci, G. Vijeo, M. Beyeler, R. Von Rohr, E. Chicca, G. Indiveri

Group Leader: KLAAS E. STEPHAN

91 Mismatch negativity indexes generative learning: F. Lieder, K.J. Friston, M.I. Garrido, K.E. Stephan

92 Model-based inference on subject-specific mechanisms of (mal)adaptive learning and decision-making: S. Iglesias, K.H. Brodersen, L. Kasper, C. Mathys, M. Piccirelli, K.E. Stephan

BIOMEDICAL TECHNOLOGY AND IMAGING

Group Leader: SIMON AMETAMEY

93 PET tracer accumulation in the eye region of rodents: M.I. Kehl, M. Honer, P.A. Schubiger, S.M. Ametamey

Group Leader: BURKHARD BECHER

94 A new mouse model to quantify *in vivo* demyelination and remyelination: G. Locatelli, T. Buch, A. Baggiolini, B. Becher

Group Leader: KYNAN ENG

95 Control of ownership and immersion in virtual reality: N. Kobashi, J. Spillmann, L. Holper, P. Pyk, D. Kiper, K. Eng

96 Virtual reality for motor rehabilitation and functional pain treatment in iSCI patients: M. Villiger, J. Spillmann, B. Meilick, P. Pyk, N. Estevez, M.-C. Hepp-Reymond, A. Curt, D. Kiper, S. Kollias, S. Hotz-Boendermaker, K. Eng

Group Leader: FRITJOF HELMCHEN

97 Imaging across the scales: simultaneous measurement of fMRI BOLD and neuronal Ca^{2+} signals in rat neocortex: K. Schulz, E. Sydekum, C.J. Engelbrecht, M. Rudin, F. Helmchen

Group Leader: SPYROS KOLLIAS

98 Assessment of arm related brain activity using an MR-compatible manipulandum: N. Estévez, V. Klamroth-Marganska, N. Yu, M. Brügger, M. Villiger, M.-C. Hepp-Reymond, R. Riener, S. Kollias

Group Leader: MARKUS RUDIN

99 Magnetic Resonance Spectroscopy for metabolic profiling in animal models of psychiatric disease: A. Seuwen, C.F. Schmidt, M. Rudin

100 Manganese-enhanced MRI to study Calcium homeostasis in a mouse model of cerebral amyloid angiopathy: J. Grandjean, J. Klohs, M. Rudin

101 Functional magnetic resonance imaging of nociception in mouse brain and spinal cord: A. Schröter, J. Yankam Njiwa, M. Rudin

Group Leader: MARTIN WOLF

102 A new method to extract evoked hemodynamic responses from near-infrared neuroimaging data using ensemble empirical mode decomposition (EEMD): F. Scholkmann, S. Spichtig, I. Trajkovic, M. Biallas, M. Wolf

ZNZ GROUP LEADERS (in alphabetic order and with poster numbers)