

Curriculum Vitae

Tania Rinaldi Barkat

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Research Experience

- 2008-ongoing **Harvard University** Cambridge, USA
Takao Hensch Laboratory, Department of Molecular and Cellular Biology
Junior Fellow at the Harvard Society of Fellows
Research fellow
Studies functional auditory cortex with voltage sensitive dye imaging and electrophysiological techniques in mouse acute thalamocortical slices
- 2002-2007 **Swiss Federal Institute of technology (EPFL)** Lausanne, Switzerland
Laboratory of Neural Microcircuitry, Brain Mind Institute
Research assistant, supervised by Prof. Henry Markram and Dr. Gilad Silberberg
Studied altered neocortical microcircuitry in the VPA rat model of autism
- Applied several techniques including *in vitro* electrophysiology, *in vitro* voltage-sensitive dye imaging, *in vivo* intrinsic imaging, morphological reconstruction with NeuroLucida software, western blotting, rat treatment, and computer programming for electrophysiological use
 - Participated in a European project (EUSynapse) with reputable professors including Hannah Monyer, Peter Seeburg, Erwin Neher
 - Wrote a patent application for a possible treatment for autism spectrum disorders
 - Taught undergraduate as well as graduate students
- 2002 (6 months) **University of Lausanne** Lausanne, Switzerland
Institute of Physiology
Research assistant, supervised by Prof. A. Villa
- Practiced extracellular recordings in behaving rats
- 2001 (3 months) **University of Lausanne** Lausanne, Switzerland
Institute of Animal Biology (IBA)
Laboratory assistant, supervised by Prof. B. Desvergnès
- Practiced molecular biology tools
- 2001 (2 months) **CERN** Geneva, Switzerland
ISOLDE, EP Division
Research student, supervised by Dr. U. Koster
- Studied negative surface ionization source for the production of radioactive isotope
- 2001 (6 months) **Swiss Federal Institute of technology (EPFL)** Lausanne, Switzerland
Laboratory of photonic, Physical Chemistry Department
Master student, supervised by Prof. J.-E. Moser
- Studied femtosecond spectroscopy in condensed matter
- 1998 (2 months) **Laboratoire du Musée d'Art et d'Histoire** Geneva, Switzerland
Research student, supervised by Mr. F. Schweizer
- Analysed different ways of manufacturing metallic wires decorating ancient textiles

Education

2003-2006	Swiss Federal Institute of Technology (EPFL) Lausanne, Switzerland PhD degree in the doctoral program <i>Neuroscience and the Developmental Neurobiology</i>	
July 2006	Cold Spring Harbor Laboratory Summer course <i>Schizophrenia and Related Disorders</i> (received a grant)	Cold Spring Harbor, USA
June 2005	RIKEN Brain Science Institute Summer school <i>Neurobiology of mental Disorders and the Mind</i> (received a grant)	Tokyo, Japan
April 2005	Hebrew University of Jerusalem Jerusalem Spring School of Dendrites (received a grant)	Jerusalem, Israel
1996-2001	Swiss Federal Institute of Technology (EPFL) Master of Science in chemical engineering, specialized in physical chemistry	Lausanne, Switzerland
1998-1999	McGill University Exchange student (received a grant)	Montreal, Canada
1991-1996	Collège de la Royale Abbaye High-school	St-Maurice, Switzerland

Awards

2007	Fellowship from the Harvard Society of Fellows
2007	Dimitri Chorafas Award for outstanding PhD thesis
2007	Alliance Award for the patent <i>Methods for Treating and/or Preventing Pervasive Developmental Disorders in a Subject</i> , EPFL, Switzerland
2006	Travel Award for the Cajal Centenary Conference, Barcelona, Spain
2004	Award for outstanding progress in PhD studies, BMI, EPFL, Switzerland
1998	Award for outstanding results in Quantum Physics, McGill, Montreal, Canada
1998	Louis Pelet Award for best grades at the propedeutic examinations I & II, EPFL, Switzerland

Publications

Rinaldi T; Perrodin, C; Markram, H. Hyper-connectivity and hyper-plasticity in the medial prefrontal cortex in the valproic Acid animal model of autism (2008). *Front Neural Circuits*, 2:4.

Rinaldi, T; Silberberg, G; Markram, H. Hyperconnectivity of local neocortical microcircuitry induced by prenatal exposure to valproic acid (2008). *Cerebral Cortex*, 18, 763-770.

Markram, K; **Rinaldi, T**; La Mendola, D; Sandi, C; Markram, H. Abnormal fear conditioning and amygdala processing caused by prenatal exposure to valproic acid (2008) *Neuropsychopharmacology*, 33, 901-912.

Markram, H; **Rinaldi, T**; Markram, K. The Intense World Syndrome – an alternative hypothesis for autism (2007) *Frontiers in Neuroscience*, 1, 77-96.

Rinaldi, T; Kulangara, K; Antonello, K; Markram, H. Elevated NMDA receptor levels and enhanced postsynaptic long term potentiation in an animal model of autism (2007). *Prof. Natl. Acad. Sci.*, 104:13501-6.

Rinaldi, T; Le Bé, JV; Silberberg, G; Toledo-Rodriguez, M; Markram, H. Understanding the neocortical circuitry: neurophysiological, microanatomical and genetic approaches. Submitted to *The Visual Cortex: New Perspectives*, J. Braun, C. Koch, J. Davis, Oxford University Press.

Köster, U; Bergmann, UC; Carminati, D; Catherall, J; Cederkäll, J; Correia, JG, Crepieux, B; Dietrich, M; Elder, K; Fedoseyev, VN; Fraile, L; Franchoo, S; Fynbo, H; Georg, U; Giles, T; Joinet, A; Jonsson, OC, Kirchner, R; Lau, Ch; Lettry, J; Maier, HJ; Mishin, VI; Oinonen, M; Peräjärvi, K; Ravn, HL; **Rinaldi, T;** Santana-Leitner, M; Wahl, U; Weissman, L, The ISOLDE Collaboration (2003). Oxide fiber at ISOLDE. *Nuclear Instruments and Methods in Physics Research B*, 204: 303-313.

Invited talks

Department of Molecular and Cellular Biology, Harvard Medical School (April 2007) Boston, USA

Neurobiology Lectures, IZN, University of Heidelberg (February 2007) Heidelberg, Germany

Abstracts, Posters and Presentations

Rinaldi, T; Kulangara, K; Antonello, K; Markram, H. Hyperconnectivity and altered plasticity in the neocortical microcircuitry of a rat model of autism. *3rd Annual Meeting of The Lemnanic Neuroscience Programs*, Les Diablerets, Switzerland. September 2006 (Abstract and poster)

Rinaldi, T; Kulangara, K; Antonello, K; Markram, H. Hyperconnectivity and altered plasticity in the neocortical microcircuitry of a rat model of autism. *5th Forum of European Neuroscience*, Vienna, Austria. July 2006 (Abstract and poster)

Ueno, Y; **Rinaldi, T;** Mattson, B; Markram, H. Electrophysiological and morphological classification of layer 1 neocortical somatosensory neurons. *5th Forum of European Neuroscience*, Vienna, Austria. July 2006 (Abstract and poster)

Rinaldi, T; Kulangara, K; Antonello, K; Markram, H. Hyperconnectivity and altered plasticity in the neocortical microcircuitry of a rat model of autism. *The Cajal Centenary Conference on the Cerebral Cortex*, Barcelona, Spain. April 2006 (Abstract and poster)

Markram, K; **Rinaldi, T;** Sandi, C; Markram, H. Hyper-fear, reduced fear extinction and weakened inhibition in the amygdala in an animal model of autism. *The Cajal Centenary Conference on the Cerebral Cortex*, Barcelona, Spain. April 2006 (Abstract and poster)

Rinaldi, T; Silberberg, G; Markram, H. Autism as a hyperconnectivity disorder with enhanced plasticity. *Workshop "Current trends in biomedicine" of the International University of Andalusia*, Dec 2005 (Abstract and poster).

Rinaldi, T; Silberberg, G; Markram, H. Autism as a hyperconnectivity disorder with enhanced plasticity. *Society for Neuroscience 35th Annual Meeting*, Washington, USA. Nov 2005 (Abstract and poster).

Rinaldi, T; Silberberg, G; Markram, H. Enhanced mono-synaptic and di-synaptic connectivity in the neocortical microcircuitry of an animal model of autism. *Society for Neuroscience 35th Annual Meeting*, Washington, USA. Nov 2005 (Abstract and poster).

Markram, K; La Mendola, D; **Rinaldi, T;** Sandi, C; Markram, H. Enhanced fear memory and reduced fear extinction in an animal model of autism. *Society for Neuroscience 35th Annual Meeting*, Washington, USA. Nov 2005 (Abstract and poster).

Garcia-Alvarez, S; Mattson, BJ; **Rinaldi, T**; Buhl, D; Markram, H. Quantification of neocortical neuronal subpopulations in an animal model of autism. *Society for Neuroscience 35th Annual Meeting*, Washington, USA. Nov 2005 (Abstract and poster).

Toledo-Rodriguez, M; Antoniello, K; **Rinaldi, T**; Markram, H. Gene expression in an animal model of autism using DNA microarrays. *Society for Neuroscience 35th Annual Meeting*, Washington, USA. Nov 2005 (Abstract and poster).

Mattson, BJ; Kulangara, K; **Rinaldi, T**; Antoniello, K; Martinez, K; Hirling, H; Markram, H. Glutamatergic signal transduction in an animal model of autism.. *Society for Neuroscience 35th Annual Meeting*, Washington, USA. Nov 2005 (Abstract and poster).

Rinaldi, T; Silberberg, G; Markram, H. Autism as a disorder of hyperconnectivity of local microcircuitry. *Lemanic Neuroscience Meeting*, Les Diablerets, Switzerland. Sept 2005 (Abstract, poster and datablitz presentation).

Rinaldi, T; Silberberg, G; Monier, C; Markram, H. Altered neocortical microcircuitry in an animal model of autism. *RIKEN Summer School Lecture course*, Tokyo, Japan. July 2005 (Abstract and poster).

Rinaldi, T; Silberberg, G; Monier, C; Markram, H. Altered neocortical microcircuitry in an animal model of autism. *13th Jerusalem Spring School in Life Sciences*, Jerusalem, Israel. April 2005 (Poster).

Rinaldi, T; Silberberg, G; Monier, C; Markram, H. Altered neocortical microcircuitry in an animal model of autism. *Swiss Society of Neuroscience Meeting*, Zürich, Switzerland. Feb 2005 (Abstract and poster).

Rinaldi, T; Silberberg, G; Monier, C; Markram, H. Altered neocortical microcircuitry in an animal model of autism. *Lemanic Neuroscience Meeting*, Les Diablerets, Switzerland. Sept 2004 (Abstract, poster and datablitz presentation).

Holzer, R; **Rinaldi, T**; Heuschel, M; Markram, H. Simultaneous MEA stimulation combined with patch-clamp recording. *4th international meeting of Substrate-Integrated MicroElectrodeArrays*, Germany. July 2004 (Poster).

Language

French and Danish	bilingual
English	fluent
German	working knowledge

Interests

Travelling, mountaineering, music, reading

References – contact details and recommendation letters available upon request

Prof. Takao Hensch	Professor at the Department of Molecular and Cellular Biology, Harvard University, Cambridge, USA
Prof. Henry Markram	Professor at the Brain Mind Institute, EPFL, Lausanne, Switzerland
Prof. Misha Tsodyks	Professor at the Weizmann Institute of Science, Rehovot, Israel
Dr. Gilad Silberberg	Postdoctoral fellow at the Karolinska Institute, Stockholm, Sweden