

Asya Rolls, PhD

Dept. Of Psychiatry
1201 Welch Rd.
Stanford University, CA 94306

asyar@stanford.edu
1-650-868-3424

Personal Details

Date of Birth: 21/07/1974
Place of Birth: Russian Federation; immigrated to Israel in 1981
Marital Status: Married+ 2 children

Education and Research Experience

- 2008- present *Postdoctoral fellow*
Stanford University school of Medicine. Department of Psychiatry.
Sleep-dependent homeostasis.
Advisors: Prof. Luis de Lecea and Prof. H. Craig Heller
- 2007- 2008 *Postdoctoral fellow*
The Weizmann Institute of Science, Israel. Department of Neurobiology.
Neurogenesis in mechanosensation and pain mechanisms.
Advisor: Prof. Michal Schwartz
- 2002-2007 *Ph.D student- Esther Hellinger Memorial Prize*
The Weizmann Institute of Science, Israel. Department of Neurobiology
and Department of Immunology
Chondroitin sulfate proteoglycans and its receptors in CNS plasticity.
Supervisors: Prof. Michal Schwartz and Prof. Ofer Lider (1955-2004).
- 1999-2002 *M.Sc student in Biophysical Chemistry- Cum Laudae*
The Technion, Israel. Department of Biology.
Can *trp* repressor bind its target site based on structural parameters.
Supervisor: Dr. Tali Haran.
- 1995-1999 *B.Sc student in Biology-- Cum Laudae*
The Technion, Israel

Publications

Research papers

1. Shechter R, Baruch K, Schwartz M, Rolls A. (2010) Touch gives new life: mechanosensation modulates spinal cord adult neurogenesis (*Mol Psychiatry*. In press) Co-corresponding author.
2. Shechter, London, Varol, Cusimano, Rolls, Pluchino, Martino, Jung and Schwartz (2009) Indispensable role of infiltrating blood-borne monocytes in recovery from spinal cord injury (*PLoS Medicine* 6(7):e1000113)
3. Rolls A., Shechter R.*, London A., Segev Y., Jacob-Hirsch J., Amariglio N., Rechavi G. & Schwartz M. (2008) A dual role for chondroitin sulfate proteoglycan in spinal cord repair (*PLoS Medicine*, 5(8): e171).
4. Shechter R.*, Ronen A.*, Rolls A.*, London A., Schwartz M. (2008) Toll-like receptor 4 modulates neurogenesis in the developing eye (*Journal of Cell biology* 183(3):393-400).
5. Rolls A., Schori H., London A. and Schwartz M. (2008) Decrease in hippocampal neurogenesis during pregnancy (*Molecular Psychiatry*, 13(5):468-9)
6. Rolls A., Shechter R. *, London A., Ziv Y., Ronen A., Levy R. and Schwartz M. (2007) Toll-like receptors modulate adult hippocampal neurogenesis (*Nature Cell Biology*; 9(9):1081-8). Cover page and News and Views by Martino G and Pluchino S. and Editor's choice in Science STKE.
7. Bakalash S*, Rolls A*, Lider O., Schwartz M. (2007) Chondroitin sulfate-derived disaccharide protects retinal cells from elevated intraocular pressure in aged and immunocompromised rats. (*Invest Ophthalmol Vis Sci*. 48(3):1181-90).
8. Rolls A. Cahalon L., Bakalash S., Avidan H., Lider O., Schwartz M. (2006) A sulfated disaccharide derived from chondroitin sulfate proteoglycan protects against inflammation-associated neurodegeneration. (*FASEB J*. 20(3): 547-9).
9. Rolls A., Avidan H., Cahalon L., Schori H., Bakalash S., Litvak V., Lev S., Lider O., Schwartz M. (2004) A disaccharide derived from chondroitin sulphate proteoglycan promotes central nervous system repair in rats and mice. (*Eur J Neurosci*. 20(8):1973-83).

10. Kipnis J., Cardon M., Avidan H., Lewitus GM., Mordechay S., Rolls A., Shani Y., Schwartz M. (2004) Dopamine, through the extracellular signal-regulated kinase pathway, downregulates CD4+CD25+ regulatory T-cell activity: implications for neurodegeneration. (*J Neurosci.* 24(27):6133-43).

Research papers under review:

1. Rolls A., Colas D., Adamantidis A., Carter M., Lanre-Amos T., Heller HC, de Lecea L. (2010) Optogenetic Disruption of Sleep Continuity Impairs Memory Consolidation.

Published hypothesis reviews and book chapters:

1. Rolls A., Schaich Borg J, de Lecea L. (2010) Sleep and metabolism: Role of hypothalamic neuronal circuitry. (*Best Pract Res Clin Endocrinol Metab.* 24(5):817-28).

2. Rolls A., Shechter R, Schwartz M. (2009) The bright side of the glial scar in CNS repair. (*Nature Rev. Neuroscience*, 10(3):235-41).

3. Rolls A. and Schwartz M. (2006) Chondroitin sulfate proteoglycan and its degradation products in CNS repair. (*Advances in pharmacology*, 53;357-374.)

Awards

- 2010- NARSAD young investigator award
- 2009- ERA-Net NEURON- Excellent Paper in Neuroscience award
- 2009- Women in Science award (awarded by *The Clore Foundation*)
- 2009- EMBO long-term fellowship
- 2008- Fulbright Post-Doctoral Fellowships (awarded by the US Government)
- 2008- Rothschild postdoctoral fellowship (awarded by YAD HANADIV)
- 2008- *Esther Hellinger Memorial Prize* (awarded by the Feinberg Graduate School)
- 2006- SFN C-WIN Graduate Student Travel Award (awarded by the Society for Neuroscience and the Committee on Women in Neuroscience)
- 2003- Deans Prize for Distinguished M.Sc Students (awarded by the Technion-Israel institute of technology).
- 2002- Deans Prize for distinguished MsC research (awarded by the Technion- Israel institute of technology).
- 2000- Deans Prize for distinguished undergraduate students (awarded by the Technion- Israel institute of technology).

Grants

- 2007- Forum of European Neuroscience (FENS) - travel grant
- 2006- The Katzir-Katchalsky Student Travel Fellowship
- 2003- Travel grant awarded by ESNI (European School of Neuroimmunology).

Oral presentations:

- Annual Meeting of the Associated Professional Sleep Societies, LLC (APSS)- 2010, San Antonio, Texas.
- SFN- Neuroscience 2008, The Society for Neuroscience- Washington DC.
- The International Stem Cell Meeting, 2008- Tel Aviv, Israel.
- ISFN- The annual meeting of Israel society for neuroscience, 2007 Eilat, Israel.
- SFN- Neuroscience 2007, The Society for Neuroscience- San Diego.
- The Israel ALS Research Conference 2007, Tel Aviv, Israel.
- Neuropsychosteology conference 2007, Jerusalem, Israel.
- ISFN- The annual meeting of Israel society for neuroscience, 2006 Eilat, Israel.
- SFN- Neuroscience 2004, The Society for Neuroscience, San Diego.

Poster presentations:

- SFN- Neuroscience 2009, The Society for Neuroscience- annual meeting, Chicago, IL.
- Neurizons 2007 (Interdisciplinary Meeting on the Neurosciences) 2007, Max Planck Institute for Experimental Medicine, Geottingen, Germany.
- PENS Workshop 2007 Mechano-transduction and Nociception. Bucharest, Romania.
- The International Stem Cell Meeting, 2007- Tel Aviv.
- SFN- Neuroscience 2006, The Society for Neuroscience- annual meeting, Atlanta.
- Annual meeting of the Israeli society of Neuroimmunology 2005-Tel Aviv.
- ISFN- The annual meeting of Israel society for neuroscience, 2004 Eilat.

Patents:

- A method for treating or inhibiting the effects of injuries or diseases that result in neuronal degeneration (filed by Yeda, Weizmann institute of science).
- Chondroitin sulfate disaccharides treatment in conditions in which cell renewal is required (filed by Yeda, Weizmann institute of science).
- Proteoglycans for tissue maintenance and repair (filed by Reinhold Cohn and partners).
- Toll-like receptors modulation for cell renewal (filed by Yeda, Weizmann institute of science)