

Biographical Sketch

ANGELA RUBAN		Assistant professor	
EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE	YEAR (S)	FIELD OF STUDY
<p>The Leon and Mathilda Recanati School for Community Health Professions, Faculty of Health Sciences, Ben-Gurion University of the Negev, Israel (Cum Laude).</p> <p>Clinical Pharmacology Department, Faculty of Health Sciences, Ben-Gurion University of the Negev, Beer-Sheva, Israel.</p> <p>Clinical Pharmacology Department, Faculty of Health Sciences, Ben-Gurion University of the Negev, Beer-Sheva, Israel.</p> <p>Neurobiology Department, Weizmann Institute of Science, Rehovot, Israel.</p>	B.A.	1994-1998	Nurse
	M.Sc.	1998-2001	Clinical Pharmacology and Neurobiology
	Ph.D.	2001- 2005	Clinical pharmacology: "Psychopharmacology of major depressive disorder"
	Postdoctoral Fellow	2005- 2008	Neurobiology: "Blood glutamate scavenging is a novel treatment in the prevention of CNS diseases"

A. Personal Statement

I am pursuing a career as an independent neurobiology researcher with a specific expertise in understanding the mechanism of glutamate excitotoxicity and therapeutic targeting of neurodegenerative and brain metastatic diseases. During my postdoctoral training under the mentoring of Prof. Teichberg, we developed a novel Blood Glutamate Scavenging technology for the treatment of neurotrauma and malignant diseases. My postdoctoral studies yielded 5 publications that describe the effectiveness of the technology in various animal models. The proposed study innovates by removing excess Glu from the CNS of interstitial fluids into the systemic blood circulation and decreases the excitotoxicity, inflammation, and scar formation in SCI.

Research and professional experience

Employment and Research Positions

1999 - 2000 **Lecturer**, "Innovations in Pharmacology" Course, Department of Clinical Pharmacology, Ben-Gurion University of the Negev, Israel.

2001 - 2004 **Registered Nurse**, Ministry of Health, Israel.

2002 - 2004 **Lecturer**, "Regulation of GPCRs" Course, Department of Clinical Pharmacology, Ben-Gurion University of the Negev, Israel.

2004 - 2005 **Lecturer**, "Methods for Quantitative Determination of Drugs" Course, Department of Clinical Pharmacology, Ben-Gurion University of the Negev, Israel.

2008- 2009 **Designer and Lecturer**, "Clinical Pharmacology" Course, School of Nursing, Barzilai Hospital, Ashkelon, Israel.

2007 - 2008 **Project Manager**, Braintact Ltd, Israel.

2008 - 2009 **Chief Science**, Braintact Ltd, Israel.

2009 - 2012 **Senior Research Fellow**, Neurobiology Department, Weizmann Institute of Science, Rehovot, Israel.

2013 - 2015 **Head of pre-clinical and clinical research**, Schwartz-Arad Day-Care Surgical Center, Israel

2014 - 2015 **Scientific Adviser**, Technology Transfer Units, Weizmann Institute of Science, Israel.

2015 - **Assistant Professor**, Faculty of Medicine, Tel Aviv University.

Membership in Professional/Scientific Societies

2008 - 2010 Israel Society for Neuroscience

2004 - 2010 Society for Neuroscience

2016 - 2017 American Association of Cancer Research (Active member)

2016-2017 Israel Cancer Research

Patents

Teichberg, Vivian and Ruban-Matuzany, Angela. "Methods of treating cancer of the central nervous system". WO/2009/144699; international patent number PCT/IL2008/000711, 2008.

C. Publications

1. Avissar, S, Matuzany-Ruban, A, Tzukert, K and Schreiber, G.: β -arrestin-1 levels are reduced in leukocytes of patients with depression and elevated by antidepressants in rat brain. *Am J Psychiatry*. Vol. 161; pp.2066-72, 2004.
2. Matuzany-Ruban, A, Avissar, S and Schreiber, G.: Dynamics of beta-arrestin1 protein and mRNA levels elevation by antidepressant in mononuclear leukocytes of patients with depression. *Affective dis*. Vol. 88; pp. 307-312, 2005.
3. Matuzany-Ruban, A, Schreiber, G, Farkash, P and Avissar, S.: Phosducin-like protein levels in leukocytes of patients with major depression and in rat cortex: the effect of chronic treatment with antidepressants. *Psychiatry Res*. Vol. 141(3); pp. 287-94, 2006.
4. Zlotnik, A, Gurevich, B, Cherniavsky, E, Tkachov, S, Matuzani-Ruban, A, Leon, A., Shapira, Y and Teichberg, V.: The contribution of the blood glutamate scavenging activity of pyruvate to its neuroprotective properties in a rat model of closed head injury. *Neurochem Res*. Vol. 33(6); pp. 1044-50, 2008.
5. Marosi, M, Fuzik, J, Nagy, D, Rákos, G, Kis, Z, Vécsei, L, Toldi, J, Ruban-Matuzani, A, Teichberg, VI and Farkas, T.: Oxaloacetate restores the long-term potentiation impaired in rat hippocampus CA1 region by 2-vessel occlusion. *Eur J Pharmacol*. Vol. 604(1-3); pp. 51-7, 2009.
6. Matuzany-Ruban, A, Golan, M, Miroshnik, N, Schreiber, G and Avissar, S.: Normalization of GRK2 protein and mRNA measures in patients with depression predict response to antidepressants. *Int J Neuropsychopharmacol*. Vol. 29; pp. 83-91, 2009.
7. Ruban, A, Berkutzki, T, Cooper, I, Teichberg, V and Mohar, B.: Blood glutamate scavengers prolong the survival of rats and mice with brain-implanted glioma. *Invest New Drugs*. Vol. 30(6); pp. 2226-35, 2012.
8. Pérez-Mato, M, Ramos-Cabrer, P, Sobrino, T, Blanco, M, Ruban, A, Mirelman, D, Menendez, P, Castillo, J and Campos, F.: Human recombinant glutamate oxaloacetate transaminase 1 (GOT1) supplemented with oxaloacetate induces a protective effect after cerebral ischemia. *Cell Death Dis*. Vol. 9; 5:e992, 2014.
9. Ruban, A, Mohar, B, Jona, G and Teichberg, VI.: Blood glutamate scavenging as a novel neuroprotective treatment for paraoxon intoxication. *J Cereb Blood Flow Metab*. Vol. 34(2); pp. 1-7, 2014.
10. Schwartz-Arad, D, Ofec, R, Eliyahu, G and Ruban, A, Sterer, N.: Long Term Follow-Up of Dental Implants Placed in Autologous Onlay Bone Graft. *Clin Implant Dent Rel Res*. doi: 10.1111/cid.12288; 2014.

11. Ruban, A, Biton, I, Markovich, A and Mirelman, D.: MRS of Brain Metabolite Levels Demonstrates the Ability of Scavenging of Excess Brain Glutamate to Protect against Nerve Agent Induced Seizures. *Int J Mol Sci*. Vol. 16 (2); pp. 3226-36, 2015.
12. Ruban, A, Cohen-Kashi Malina K, Cooper I, Graubardt N, Babakin L, Jona G and Teichberg V. Combined treatment of an ALS rat model with recombinant GOT1 and Oxaloacetic acid: a novel neuroprotective treatment. *Neurodegen Dis*. Vol. 15(4); pp. 233-42, 2015.
13. Schwartz-Arad, D, Ofec, R, Eliyahu, G, Sterer, N and Ruban, A. Onlay Bone Graft augmentation for the Treatment of Maxillary Atrophy: Implants long term follow-up (up to 131 months). *J Cosmetic Dentistry* Vol. 31(3); pp 76-93, 2015.
14. Goldshmit A, Jona G, Schmuklerd E, Solomond S, Pinkas-Kramarskid R and Ruban A. Blood Glutamate Scavenger as a novel neuroprotective treatment in spinal cord injury. *J Neurotrauma* Vol. 35(21); pp. 2581-2590, 2018.
15. Goldshmit Y, Banyas E, Bens N, Yakovchuk A, Ruban A. Blood glutamate scavengers and exercises as an effective neuroprotective treatment in mice with spinal cord injury. *Neurosurg Spine* Vol. 3; pp.1-13, 2020.
16. Tsivion-Visbord H, Pretes N, Bikivski L, Goldshmit Y, Ruban A, Offen D. MSCs-Derived-EVs as Potential Protection Against Behavioral and Biochemical Deficits in a Phencyclidine Model of Schizophrenia. *Biol Psychiatry* Vol. 87(9); S195, 2020.
17. Ruban A, Daya N, Schneider A.L.C., Gottesman R, Selvin E, Coresh J, Lazo M, Koton S. Liver enzymes and risk of stroke: The Atherosclerosis Risk in Communities Study (ARIC). *J Stroke* August, 2020.
18. Amit-Aharon A, Ruban A, Dubovi I. Knowledge and information credibility evaluation strategies regarding COVID-19: A cross-sectional study. 2021 January-February; 69(1): 22–31.
19. Amit-Aharon A, Dubovi I, Ruban A. Quality of Life Res Differences in mental health and health-related quality of life between Israel and Italy public sample during COVID-19 quarantine. *Quality of Life Research* Jan 14: 1–10, 2021.
20. Goldshmit Y, Perelroizen R, Yakovchuk A, Banyas E, Mayo L, David S, Benbenishty A, Blinder P, Shalom M, Ruban A. Blood glutamate scavengers increase pro-apoptotic signaling and reduce metastatic melanoma growth in-vivo. *Sci Rep*. 2021 Jul 19;11(1):14644.
21. S Poleg, Emad K'ourieh, A Ruban, G Shapira, N Shomron, B Barak and Daniel Offen . Behavioral Aspects and Neurobiological Properties Underlying Medical Cannabis Treatment in Shank3 Mouse Model of Autism Spectrum Disorder. *Transl Psychiatry* 2021 Oct 13;11(1):524.

22. Goldshmit Y, Shalom M and Ruban A. Treatment with Pulsed Extremely Low Frequency Electromagnetic Field (PELF-EMF) Exhibit Anti-Inflammatory and Neuroprotective Effect in Compression Spinal Cord Injury Model Special Issue Spinal Cord Injury: From Mechanisms to Nanotherapeutic Approache. *Biomedicines* 2022;10(2):325.