

CURRICULUM VITAE AND LIST OF PUBLICATIONS

Updated: February 2, 15

1. Personal Details

Name: Friedman, Alon

Date and Place of Birth: October 9th, 1964, Yaffo, Israel.

Work address:	Department of Medical Neuroscience 5850 College Street Room 12-H Sir Charles Tupper Building PO Box 15000 Halifax, NS B3H 4R2	The Department of Physiology & Neurobiology Faculty of Health Sciences Ben-Gurion University of the Negev, Beer-Sheva, 84105 Israel
Tel:	+902 4944292	+972 54 2365002, Fax: +972 8 6479883
Email:	alon.friedman@dal.ca	alonf@bgu.ac.il
URL:		http://fohs.bgu.ac.il/neurophysio/about.shtml

2. Education

B.Sc 07/1985	Medical Sciences, Ben-Gurion University of the Negev, Beer-Sheva, Israel
M.D. 06/1991	Faculty of Health Sciences, Ben-Gurion University of the Negev, Beer-Sheva, Israel
Ph.D. 09/1991	Neuroscience. Advisor: Professor Michael J. Gutnick. Title: "Active and Passive Properties of Neocortical Neurons and their Role in Determining Neuronal Firing Pattern". summa cum laude. University of the Negev, Beer-Sheva, Israel

3. Employment History

2014-	Full Professor, Dennis Chair in epilepsy research, Faculty of Medicine, Dalhousie University, Halifax, Nova Scotia, Canada.
2012-present	Full Professor, Department of Physiology and Cell Biology, Faculty of Health Sciences, Ben-Gurion University of the Negev.
2008-12	Tenured, Associate Professor, Department of Physiology, Faculty of Health Sciences, Ben-Gurion University of the Negev.
2009-12	Visiting Professorship, Institute of Neurophysiology, Charite Medical University, Berlin
2004-08	Senior Lecturer, Department of Physiology, Faculty of Health Sciences, Ben-Gurion University of the Negev.
2003	Senior Lecturer, Departments of Neurosurgery and Physiology, Soroka University Medical

Center and Faculty of Health Sciences, Ben-Gurion University of the Negev.

7/02 – 04 Guest Scientist, Institute for Neurophysiology, Charité Medical University, Berlin.

1997 Lecturer, Departments of Neurosurgery and Physiology, Soroka University Medical Center and Faculty of Health Sciences, Ben-Gurion University of the Negev.

4. Professional Activities

(a) Positions in academic administration

2012- present Chair, Cognitive and Brain Sciences teaching program (undergraduate and graduate), Ben-Gurion University of the Negev.

2011- present Director, Zlotowski Center for Neuroscience, Ben-Gurion University of the Negev.

2007 – 2011 Associate-Chair, Department of Biomedical Engineering, Ben-Gurion University of the Negev.

(b) Professional functions outside universities/institutions

10/2004-09/2005 Senior resident, Department of Neurosurgery, Soroka University Medical Center, Beer-Sheva.

06/1996-02/2001 Residency, Department of Neurosurgery, Soroka University Medical Center, Beer-Sheva.

(c) Editor or member of editorial board of scientific or professional journal

Editorial

2010-2012 Epilepsia.

2009-present TürkiyeKlinikleri Journal of Medical Sciences.

2009-present The Open Biology Journal

2014-present Neuroimmunology and Neuroinflammation

Reviewer

Brain, Epilepsia, Epilepsy Research, FEBS Journal, GLIA, Journal of Neuroscience, Journal of Neuroscience Methods, Journal of Neurology, Neurosurgery & Psychiatry, Nature Medicine, Neurobiology of Disease, Neuroscience

Reviewer for grant agencies

Binational Israel-USA Science Foundation (BSF), French ANR, Israeli Academy of Sciences, The German-Israeli Foundation, The Psychobiology Institute, Deutsche-Forschung Gemeinschaft (DFG, German Academy of Sciences), European Union.

(d) Membership in professional/scientific societies

2004 – present International League Against Epilepsy – Israeli Chapter

- 2000 – present Federation of European Neuroscience Societies.
- 1996 – present Israeli Societies for Neuroscience
- 1996 – 2001 European Society of Clinical Neurophysiology
- 1984 – present Society for Neuroscience (USA)

(e) Additional Functions

- 2011 Invited Guest Editor, *Epilepsia* (impact factor 4.052). Special issue: "Blood-brain barrier dysfunction in epileptogenesis and epilepsy".
- 2010 Invited member of the Task Force on Basic Science, The International League Against Epilepsy.
- 2010 Invited Guest Editor (with D. Kaufer), *Cardiovascular Psychiatry and Neurology*. Special issue: "Blood-Brain Barrier Breakdown and Blood-Brain Communication in Neurological and Psychiatric Diseases".
- 2013 Invited Guest Editor, *Seminars Cell and Dev. Biology* (impact factor 6.1). Special issue: "Blood-brain barrier".
- 2014 Invited member of the working group: Translational Task Force of the Neurobiology Commission of the ILAE, Basic Science, The International League Against Epilepsy.

(f) Organization of International Meetings:

- 2013 International meeting in Epilepsy genetics and Young researcher Meeting. Sde Boker, December 12-14th, 2013.
- 2012 Blood-brain barrier dysfunction in neurological diseases: Clinical studies, underlying mechanisms and therapeutic implications. Beer-Sheva & Sde Boker.
<http://bbb2012negev.med.ad.bgu.ac.il/index.html>
- 2009 2nd International Symposium: Drug resistant Epilepsy: From Basic Science to Pharmacological and Surgical Management, Beer-Sheva.
- 2007 1st International Symposium: Drug resistant Epilepsy: From Basic Science to Pharmacological and Surgical Management, Beer-Sheva.
- 2007 Cholinergic Signaling – From Genes to Environment, Jerusalem.
- 2006 Cortical Circuitry, Rechovot

5. Educational Activities

(a) Courses taught

- 2012-present Coordinator and Teacher – Core Course in Cellular Neuroscience for undergraduate students
- 2011-present Coordinator and Teacher – Core Course in Neuroscience for graduate students
- 2009-present Teacher, Pathophysiology of Brain Disorder, Course for BsC Student, Hebrew University of Jerusalem
- 2009-present Coordinator and Teacher – Medical Problem to 4th year biomedical students.
- 2009-present Coordinator and Teacher – Advanced Imaging. Course for biomedical engineering students, Ben-Gurion University of the Negev
- 2007-present Coordinator and Teacher – Advanced Physiology, Biophysics and Electrophysiology, 2nd year course for medical students.

- 2005-present Coordinator and Teacher – Pathogenesis of Epilepsy: from Genotype to Phenotype. Course for graduate students, Ben-Gurion University of the Negev
- 2005-present Teacher: courses for basic physiology (medical and para-medical professions), Ben-Gurion University of the Negev.
- 2000-2002 Teacher – Course in Neurophysiology, 2nd year MD Program in International Health in Collaboration with Colombia University Health Sciences (lectures in English).
- 2002-2004 Coordinator and Teacher – Methodological approaches in in-vivo neurophysiology. Laboratory course for graduate students, Ben-Gurion University of the Negev
- 1998-2002 Teacher – Course in Neurophysiology, Faculty of Health Sciences, Ben-Gurion University of the Negev (4th year medical students).
- 1999-2002 Coordinator and Teacher - The Rekanati School for Community Health Professions, Faculty of Health Sciences, Ben-Gurion University of the Negev (Course in Neurophysiology for 2nd year physiotherapy students)
- 1998 Teacher - Experimental approaches for studying central nervous system disorders, Ben-Gurion University of the Negev (Course for graduate students).
- 1992-2002 Coordinator and Teacher - Neurosurgery Department, Faculty of Health Sciences, Ben-Gurion University of the Negev (5th year medical students)
- 1987-1988 Tutor - Department of Behavioral Sciences, Ben-Gurion University of the Negev (Undergraduate course in psychophysiology)
- 1985-1991 Tutor - Department of Physiology, Faculty of Health Sciences, Ben-Gurion University of the Negev (Course in physiology for 1st year medical students)

(b) Research students

Cortical electrophysiology:

2000 – 2003 MSc, Akiva Korn

1998 – 2003 PhD, Nadav Astman, Joint Supervision with Prof. Michael Gutnick

Cholinergic modifications in stress and epileptogenesis:

2006 – 2009 MSc, Yifat Bitan

2006 – 2009 MSc, Yehudit Genatek

2004 – 2007 Post-Doctorate Fellow, Naim Najami

2001 – 2006 PhD (MD-PhD tract), Ori Brown.

2000 – 2007 PhD (MD-PhD tract), Lev Pavlovsky.

Blood-brain barrier and epileptogenesis:

2014-present PhD, Udi Vazana

2012 – present PhD (MD-PhD tract), Dan Milkovsky

2012 – 2014 MsC, Udi Vazana

2010 – 2014 PhD Guy Bar-Klein

2009 – present PhD (MD-PhD tract), Itai Weisberg

2009 – present PhD (MD-PhD tract), Karl Shocknecht (Charité Medical University, Berlin)

2009 – 2011 MSc, Ayelet Peer (with Dr. Alon Monsonego)

2008 – 2010 MsC, Guy Bar-Klein

2008 – present PhD, Nitzan Levy (with Dr. Alon Monsonego)

2008 – 2011 MSc, Chen Klein (Biomed Eng.)

2007 – present PhD, Maya Ketzef (with Dr. Dani Gitler)

2007- 2014 PhD, Ofer Prager
 2007 - 2009 MSc, Haviv Levy (Biomed Eng.)
 2006 – 2011 PhD (MD-PhD tract), Yaron David
 2003 – 2006 PhD (MD-PhD tract), Sebastian Ivens (Charité Medical University, Berlin)
 2002 – 2004 PhD (MD-PhD tract), Ernst Seiffert (Charité Medical University, Berlin)

Blood-brain barrier imaging: Human studies

2011 – present PhD (MD-PhD tract), Ronel Vexler
 2005 – 2010 MSc, Asaf Kara.
 2000 – 2007 PhD (MD-PhD tract), Oren Tomkins.

Brain function in stress and modulation of emotional response: human studies

2010 – present MA, Chen Tifeeret
 2009 – present PhD, Rotem Saar
 2006 – 2008 MSc, Shy Hefetz
 2003 – 2010 PhD (MD-PhD tract), Jonathan Cohen

EEG analysis in epileptogenesis and seizures:

2009 – 2012 MSc, Netali Efrat (Biomed Eng. With Dr. Ilan Shallom)
 2009 – 2012 MSc, Lyn Kaminitzky (Biomed Eng.)
 2009 – 2012 MSc, Etti Askenazi (Biomed Eng. With Dr. Ilan Shallom)
 2006 – 2009 MSc, Merav Ben-Asher (Electrical Eng., with Prof. Amir Geva)

6. Awards and Fellowships

(a) Awards

2013 Dr. Helena Rachmanska-Putzman Chair in Neurology
 2009 The Students Excellency award for teaching, Ben-Gurion University, Beer-Sheva, Israel.
 2009 The Moritz Heinrich Romberg Visiting Professorship from the, Stroke Center, Charité Medical University, Berlin, Germany.
 2009 Mercator Program for Visiting Professorships at German Universities, Charité Medical University, Berlin, Germany.
 2007 The Michael Prize for Epilepsy Research, The Michael Stiftung, Bonn, Germany.
 2001-2002 American Physicians Fellowship for Medicine in Israel, The APS Kass Award for Medical Research
 2000 The Zigler prize for original research, The Bruce Rappaport Faculty of Medicine, Technion, Israeli Institute of Technology.
 1997 Foulkes Foundation Research Awards (London, UK) for original contribution of scientific research to medicine.
 1997 The “Teva” research prize for young investigators.
 1991 The volunteer award, The Association for Civil Rights in Israel.
 1986-1988 Goulton Award, Ben-Gurion University of the Negev, Israel. Support for graduate training.

(b) Fellowships

2002-2003 Alexander von Humboldt Fellowship, Institute for Physiology, Humboldt University, Berlin

1996-1997 The Charles Smith Post-Doctoral Fellowships

1988-1990 The Foulks Foundation Fellowship (London, UK), support for graduate training.

7. Scientific Publications

h-index (according to the web of science, April 2012) = 25

I Refereed articles in scientific journals

- (1) **Friedman, A.** and Gutnick, M.J. 1987, Low threshold calcium electrogenesis in neocortical neurons. *Neuroscience Letters*, 81: 117-122. [Impact Factor – 3.41 , Time Cited by others: 83]
- (2) **Friedman, A.** and Gutnick, M.J. 1989, Intracellular calcium and control of burst generation in neurons of guinea-pig neocortex in vitro. *The European Journal of Neuroscience*, 1: 374-381. [Impact Factor – 3.949, Time Cited by others: 61, *the journal is placed 62nd in the list of 265 journals in the field of Neuroscience*]
- (3) **Friedman, A.**, Arens J., Heinemann, U. and Gutnick, M.J. 1992, Slow depolarizing afterpotentials in neocortical neurons are sodium and calcium dependent. *Neuroscience Letters*, 135: 13-17. [Impact Factor – 3.41, Time Cited by others: 27]
- (4) Amitai, Y., **Friedman, A.**, Connors, B.W. and Gutnick, M.J. 1993, Regenerative activity in apical dendrites of pyramidal cells in neocortex. *Cerebral Cortex*, 3: 26-38. [Impact Factor – 6.187, Time Cited by others: 145, *the journal is placed 16th in the list of 265 journals in the field of Neuroscience*]
- (5) Reuveni, I., **Friedman, A.**, Amitai, Y. and Gutnick, M.J. 1993, Stepwise repolarization from Ca²⁺ plateaus in neocortical pyramidal cells: evidence for non-homogenous distribution of HVA Ca²⁺ channels in dendrites. *The Journal of Neuroscience*, 13: 4609-4622. [Impact Factor -7.506, Time Cited by others: 74, *the journal is placed 9th in the list of 265 journals in the field of Neuroscience*]
- (6) Segev I., **Friedman, A.**, White E. and Gutnick, M.J. 1995, Electrical consequences of spine dimensions: model of a cortical spiny stellate cell completely reconstructed from serial thin sections. *Journal of Computational Neuroscience*. 2: 117-130. [Impact Factor -2.359, Time Cited by others: 17, *the journal is placed 87th in the list of 265 journals in the field of Neuroscience*]
- (7) Barkai E., **Friedman, A.** Grossman, Y. and Gutnick, M.J. 1995, Laminar pattern of synaptic inhibition during convulsive activity induced by 4-aminopyridine in neocortical slices. *Journal of Neurophysiology*, 73: 1462-7. [Impact Factor -3.853 , Time Cited by others: 17, *the journal is placed 17th in the list of 265 journals in the field of Neuroscience*]
- (8) Fleidervish, I. **Friedman, A.** and Gutnick, M.J. 1996, Slow Na channel inactivation underlies cumulative slow adaptation of neuronal firing in guinea-pig and mouse neocortical slices in vitro. *Journal of Physiology (London)*, 493: 83-98.[Impact Factor -4.272, Time Cited by others: 151, *the journal is placed 15th in the list of 265 journals in the field of Neuroscience*]

- (9) **Friedman, A.**, Kaufer, D., Hendler, I., Shemer, J., Soreq, H. and Tur-Kaspa, I. 1996, Pyridostigmine brain penetration under stress enhances neuronal excitability and induces immediate transcriptional response. *Nature-Medicine*, 2: 1382-5. Accompanied by a News and Views cover page pp. 1307-1308. [Impact Factor -28.878, Time Cited by others: 260, *the journal is placed 1st in the list of 116 journals in the field of Medicine research*]
- (10) Andres, C. Beeri, R., **Friedman, A.**, Timberg, R., Shani, M. and Soreq, H. 1997, AChE transgenic mice display embryonic modulations in spinal cord CHAT and neurexin I β gene expression followed by late-onset neuromotor deterioration. *Proceedings National Academy of Sciences USA* 94: 8183-8178. [Impact Factor – 9.432, Time Cited by others: 68]
- (11) Soreq, H., Kaufer, D., Beeri R. and **Friedman, A.** 1997, Short and long-term manipulation of cholinergic functions under stress conditions and in transgenic animals. *Chemistry* 34 (Hebrew), 102-103.
- (12) Kaufer, D., **Friedman, A.**, Seidman, S. and Soreq, H. 1998, Acute stress facilitates long-lasting changes in cholinergic gene expression. *Nature*, 393: 373-377. Accompanied by a News and Views cover page pp. 308-309. [Impact Factor -29.273 , Time Cited by others: 391, *the journal is placed 3rd in the list of all journals*]
- (13) Kaufer, D., **Friedman, A.**, Seidman, S. and Soreq, H. 1998, Anticholinesterases induce multigenic transcriptional feedback response suppressing cholinergic neurotransmission, *Chemical-Biological Interactions*. 119-120: 349-360. [Impact Factor – 1.968, Time Cited by others: 65]
- (14) **Friedman, A.**, Kaufer, D., Pavlovsky, L. and Soreq, H. 1998, Cholinergic excitation induces activity-dependent electrophysiological and transcriptional responses in hippocampal slices. *Journal of Physiology (Paris)* 92: 329-336. [Impact Factor – 1.367, Time Cited by others: 9]
- (15) Kaufer, D., **Friedman, A.** and Soreq, H. 1999, The vicious circle: long-lasting transcriptional modulation of cholinergic neurotransmission following stress and anticholinesterase exposure. *The Neuroscientist* 5: 173-183. [Impact Factor - 4.458 , Time Cited by others: 14, *the journal is placed 41st in the list of 265 journals in the field of Neuroscience*]
- (16) Soreq, H., Kaufer, D. and **Friedman, A.** 2000, The Molecular Biology of Post-Traumatic Stress Disorder. *Harefuah*, 18: 57-62. [Hebrew]
- (17) Tomkins, O., Kaufer, Daniela, Shelef, I., Golan, H., Reichenthal, E., Soreq, H. and **Friedman, A.** 2001, Frequent Blood-Brain-Barrier Disruption in the Human Cerebral Cortex. *Cellular and Molecular Neurobiology*, 21:675-91. [Impact Factor -2.022 , Time Cited by others: 51].
- (18) Meshorer, E., Erb1, C., Gazit, R., Pavlovsky, L., Kaufer, D., **Friedman, A.**, Ben-Arie, N., and Soreq, H. 2002, Inter related stimulus-induced modulations in alternative splicing and neuritic mRNA translocation promote neuronal hypersensitivity. *Science*, 295:508-12. [Impact Factor – 30.927, Time Cited by others: 159, *the journal is placed 12th in the list of all journals*]
- (19) Pavlovsky, L., Browne, O. and **Friedman, A.** 2003, Pyridostigmine enhances glutamatergic transmission in hippocampal CA1 neurons. *Experimental Neurology*, 179: 181-187. [Impact Factor – 3.767, Time Cited by others: 17]
- (20) Wieser, G H.G., Ortega, A. **Friedman**, and Y. Yonekawa 2003, Long-term seizure outcome following amygdalohippocampectomy. *J. Neurosurgery*, 98:751-763. [Impact Factor -2.446, Time Cited by others: 141]
- (21) Seiffert, E., Dreier, J.P., Ivens, S., Bechmann, I., Heinemann, U. and **Friedman, A.** 2004, Focal blood-brain-barrier disruption induces epileptiform activity in the rat neocortex. *J. Neuroscience*,

- 24:7829-36.[Impact Factor – 7.506, Time Cited by others: 141, *the journal is placed 9th in the list of 265 journals in the field of Neuroscience*]
- (22) Liat Ben-Moyal-Segal, Tatiana Vander, Sagiv Shifman, Boris Bryk, Richard Ebstein, Esther-Lee Marcus, Johanan Shtassman, Ariel Darvasi, Yuval Herishanu, **Alon Friedman** and Hermona Soreq. 2005, Acetylcholinesterase/Paraoxonase interactions increase the risk of insecticide-induced Parkinson's disease. *FASEB J.*, 19:452-4. [Impact Factor -7.064 , Time Cited by others: 35, *the journal is placed 10th in the list of 94 journals in the field of Biology*]
- (23) Korn A., Golan, H., Pascual-Marqui, R and **Friedman, A.** 2005, Focal Cortical Dysfunction and Blood-Brain Barrier Disruption in Patients with Post-Concussion Syndrome, *J. Clinical Neurophysiology*, 22:1-9. [Impact Factor -1.544, Time Cited by others: 29, *the journal is placed 42nd in the list of 203 journals in the field of Clinical Neurology*]
- (24) Pavlovsky, L., Seiffert, E. Korn, A. Golan, H., Heinemann, U. and **Friedman, A.** 2005, Persistent Blood-Brain Barrier Disruption May Underlie alpha Interferon-induced Seizures, *J Neurol.* 252:42-6.[Impact Factor -2.844, Time Cited by others: 21, *the journal is placed 37th in the list of 158 journals in the field of Clinical Neurology*]
- (25) Dreier, J.P., Jurkat-Rott, K., Petzold, G.C., Tomkins, O., Klingebiel, R., Kopp, U.P., Lehmann-Horn, F., **Friedman, A.**, and Dichgans. M. 2005, Opening of the blood-brain barrier preceding cortical edema in a severe attack of FHM type II. *Neurology*, 64: 2145-7. [Impact Factor -4.947, Time Cited by others: 22, *the journal is placed 6th in the list of 158 journals in the field of Clinical Neurology*]
- (26) Behrens, C.J., van den Boom L.P., De-Hoz, L., **Friedman, A.**, and Heinemann U. 2005, Induction of sharp wave-ripple complexes in vitro and reorganization of hippocampal networks. *Nat Neurosci.* 8:1560-7. [Impact Factor -15.456, Time Cited by others: 86, *the journal is placed 7th in the list of 212 journals in the field of Neuroscience*]
- (27) Zumsteg, D., **Friedman, A.**, Wennberg, R.A. and Wieser, H.G. 2005, Source localization of mesial temporal interictal epileptiform discharges: Correlation with intracranial foramen ovale electrode recordings. *Clin Neurophysiol.* 116:2810-8.[Impact Factor -2.64 , Time Cited by others: 48, *the journal is placed 55th in the list of 158 journals in the field of Clinical Neurology*]
- (28) Zumsteg, D., **Friedman, A.**, Wieser, H.G and Wennberg, R.A. 2006, Source localization of interictal epileptiform discharges: Comparison of three different techniques to improve signal to noise ratio. *Clin Neurophysiol.* 117(3):562-71.[Impact Factor -2.64 , Time Cited by others: 11, *the journal is placed 55th in the list of 158 journals in the field of Clinical Neurology*]
- (29) Kofman, O., Berger, A, **Friedman, A.** and Abu Jaffar, A. 2006, Impairments in school-aged children following exposure to organophosphate. *Pediatr Res.* 60:88-92. [Impact Factor – 2.875, Time Cited by others: 18]
- (30) Brown, R.O., Benmoyal-Segal, L., Zumsteg, D., David, Y., Kofman, O., Berger, A., Soreq, H. and **Friedman, A.** 2006, Coding region paraoxonase polymorphisms dictate accentuated neuronal reactions in chronic, sub-threshold pesticide exposure. *FASEB J.* 20:1733-5.[Impact Factor -7.064 , Time Cited by others: 22, *the journal is placed 8th in the list of 72 journals in the field of Biology*]
- (31) Zumsteg, D., **Friedman, A.**, and Wennberg, R.A. 2006, Propagation of interictal discharges in temporal lobe epilepsy: Correlation of spatiotemporal mapping with intracranial foramen ovale electrode recordings. *Clinical Neurophysiology.* 117:2615-26.[Impact Factor-2.64, Time Cited

- by others: 31, *the journal is placed 55th in the list of 158 journals in the field of Clinical Neurology*]
- (32) Ivens, S., Kaufer, D., Seiffert, E., Bechmann, I., Tomkins, O., Heinemann, U. and **Friedman, A.** 2007, TGF β receptor mediated albumin uptake into astrocytes is involved in neocortical epileptogenesis. *Brain*, 130:535-47. [Impact Factor -7.535 , Time Cited by others:105, *the journal is placed 2nd in the list of 158 journals in the field of Clinical Neurology*]
- (33) Tomkins, O., Friedman, O., Ivens, S., Reiffurth C., Major, S., Dreier, J.P., Heinemann, U. and **Friedman, A.** 2007, Blood-brain barrier disruption results in delayed functional and structural alterations in the rat neocortex. *Neurobiology of Disease*, 25:367-77. [Impact Factor -4.048, Time Cited by others: 23, *the journal is placed 88th in the list of 212 journals in the field of Neuroscience*]
- (34) Lev Pavlovsky and **Alon Friedman.** 2007, Pathogenesis of Stress-Associated Skin Disorders: Exploring the Brain-Skin Axis. *Curr. Problems in Dermatology*, 35: 136-145. [Time Cited by others: 3]
- (35) **Alon Friedman**, Christoph J Behrens and Uwe Heinemann. 2007, Cholinergic Dysfunction in Temporal Lobe Epilepsy. *Epilepsia*. 48: 126-130. [Impact Factor -4.052, Time Cited by others: 12, *the journal is placed 18th in the list of 158 journals in the field of Clinical Neurology*]
- (36) O Tomkins, I Shelef, I Kaizerman, A Eliushin, Z Afawi, A Misk, M Gidon, A Cohen, D Zumsteg, **A Friedman.** 2008, Blood-Brain Barrier Disruption in Post-Traumatic Epilepsy. *Journal of Neurology Neurosurgery and Psychiatry*. 79: 774-779. [Impact Factor -3.122, Time Cited by others: 35, *the journal is placed 2nd in the list of 206 journals in the field of Surgery*]
- (37) Cohen J. E., Zimmerman G., **Friedman A.**, Dori A. and Soreq H. 2008, Acetylcholinesterase impairs homeostasis in mouse hippocampal granule cells. *Hippocampus*, 18:182-92. [Impact Factor -3.91, Time Cited by others: 3, *the journal is placed 24th in the list of 212 journals in the field of Neuroscience*]
- (38) Randolph Klingebiel, **Alon Friedman**, Ilan Shelef and Jens P. Dreier. 2008, Focal cortical necrosis in a patient with high-grade ICA stenosis and status auraemigraenalis. *Journal of Neurology Neurosurgery and Psychiatry*, 79:89-90. [Impact Factor -3.122, *the journal is placed 12th in the list of 158 journals in the field of Clinical Neurology*]
- (39) Merav H Shamir, Orit Chi, **Alon Friedman**, Yael Shilo, Ram Reifen, and Limor Miara. 2008, Sub-occipital craniectomy in a lion (*Panthera Leo*) with occipital bone malformation and hypovitaminosis A. *Zoo and Wild Animals Medicine. Journal of Zoo and Wildlife Medicine*, 39(3): 455-459. [Impact Factor NA]
- (40) Gabriel Zimmerman, Marleisje Njunting, Sebastian Ivens, Elsa Toner, Christopher J. Behrens, Miriam Gross, Hermona Soreq, Uwe Heinemann and **Alon Friedman**, 2008. Acetylcholine-Induced Seizure-like Activity and Cholinergic Modified Gene Expression in Chronically Epileptic Rats. *European Journal of Neuroscience*, 27(4):965-75. [Impact Factor -3.418, Time Cited by others: 9]
- (41) **Alon Friedman**, Daniela Kaufer and Uwe Heinemann, 2009. Blood-Brain Barrier Breakdown-Inducing Astrocytic Transformation: Novel Targets for the Prevention of Epilepsy. *Epilepsy research*, 85(2-3):142-9. [Impact Factor - 2.41, Time Cited by others:35]
- (42) Luisa P Cacheaux, Sebastian Ivens, Yaron David, Alexander J Lakhter, Guy Bar-Klein, Michael Shapira, Uwe Heinemann, **Alon Friedman** and Daniela Kaufer, 2009. Transcriptome profiling

- reveals TGF-beta signaling involvement in epileptogenesis. *Journal of Neuroscience*, 29(28): 8927-8935. [Impact Factor – 7.45, Time Cited by others: 37, *the journal is placed 9th in the list of 212 journals in the field of Neuroscience*]
- (43) Hadar Shalev, Yonatan Serlin and **Alon Friedman**, 2009. Breaching the Blood-Brain Barrier as a Gate to Psychiatric Disorder. *Cardiovascular Psychiatry and Neurology*. Epub Mar 30. [Impact Factor NA]
- (44) Jorks D, Milakara D, Alam M, Kang EJ, Major S, **Friedman A**, **Dreier JP**, 2011. A novel algorithm for the assessment of blood-brain barrier permeability suggests that brain topical application of endothelin-1 does not cause early opening of the barrier in rats. *Cardiovascular Psychiatry and Neurology*. Epub Mar 30. [Impact Factor NA]
- (45) Ofer Prager, Yoash Chassidim, Chen Klein, Haviv Levi, Ilan Shelef and **Alon Friedman**, 2010. Dynamic in-vivo imaging of cerebral blood flow and blood-brain barrier permeability. *Neuroimage*, 49: 337-344. [Impact Factor – 5.694, Time Cited by others: 1]
- (46) Yaron David, Luisa P Flores, Sebastian Ivens, Uwe Heinemann, Daniela Kaufer and **Alon Friedman**. 2009. Astrocytic dysfunction in epileptogenesis: consequences of altered potassium and glutamate buffering? *Journal of Neuroscience*, 29(34):10588-99. [Impact Factor – 7.45, Time Cited by others: 33, *the journal is placed 9th in the list of 212 journals in the field of Neuroscience*]
- (47) Marco Sifringer, Daniela Brait, Ulrike Weichelt, Gabriel Zimmerman, Stefanie Endesfelder, Felix Brehmer, Clarissa von Haefen, **Alon Friedman**, Hermona Soreq, Ivo Bendixg, Bettina Gerstner, Ursula Felderhoff-Muesera, 2010. Erythropoietin attenuates hyperoxia-induced oxidative stress in the developing rat brain. *Brain, behavior and immunity*, 24:792-9. [Impact Factor – 4.91, Time Cited by others: 1]
- (48) Sebastian Ivens, Szendro Gabriel, Greenberg George, **Alon Friedman** and Ilan Shelef, 2010. Blood-brain barrier breakdown as a novel mechanism underlying cerebral hyperperfusion syndrome. *Journal of Neurology*, 257: 615-620. [Impact Factor – 2.54, Time Cited by others: 5, *the journal is placed 37th in the list of 158 journals in the field of Clinical Neurology*]
- (49) Dan Shlosberg, Mony Benifla, Daniela Kaufer and **Alon Friedman**. 2010. Blood-Brain Barrier Breakdown as a Therapeutic Target in Traumatic Brain Injury. *Nature Reviews Neurology*, 6: 393-404. [Impact Factor – 6.98, Time Cited by others: 31]
- (50) Ben-David O, Pewzner-Jung Y, Brenner O, Laviad EL, Kogot-Levin A, Weissberg I, Biton IE, Pienik R, Wang E, Kelly S, Aloy J, Raas-Rothschild A, **Friedman A**, Brügger B, Merrill AH Jr, Futerman AH. 2011. Encephalopathy caused by ablation of very long acyl chain ceramide synthesis may be largely due to reduced galactosylceramide levels. *J Biol Chem*. 2011 Aug 26; 286(34):30022-33. [Impact Factor – 5.328]
- (51) Oren Tomkins, Akiva Feintuch, Moni Benifla, Avi Cohen, **Alon Friedman** and Ilan Shelef 2011. Blood-Brain Barrier Breakdown Following Traumatic Brain Injury: A Possible Role in Posttraumatic Epilepsy, *Cardiovascular Psychiatry and Neurology* Volume 2011, Article ID 765923 [Impact Factor NA]
- (52) **Alon Friedman** and Ray Dingledine. 2011 Molecular cascades that mediate the influence of inflammation on epilepsy. *Epilepsia*, 52(Suppl. 3): 33-39. [Impact Factor 4.052, Time Cited by others: 6, *the journal is placed 18th in the list of 158 journals in the field of Clinical Neurology*]
- (53) Ketzeff M., Weissberg, I., Becker, A. **Friedman, A.** and Gitler D. 2011 Compensatory network alterations upon onset of epilepsy in synapsin triple knock-out mice. *Neuroscience*. 189 :108-22

[*Impact Factor 3.292, the journal is placed 41th in the list of 303 journals in the field of Neuroscience*]

- (54) **Alon Friedman** 2011 Blood-brain barrier dysfunction, status epilepticus, seizures, and epilepsy: a puzzle of a chicken and egg? *Epilepsia*. 52 Suppl 8:19-20
- (55) Vezzani A. and **Friedman A.** 2011 Brain inflammation as a biomarker in epilepsy. *Biomark Med.* 5:607-14
- (56) Cohen Jonathan E., Shalev Hadar, Admon Roe, Hefetz Shy, Shelef Ilan, Hendler Talma and **Friedman Alon.** 2012 Emotional brain rhythms and their impairment in post-traumatic patients. *Human Brain Mapping*, Feb 14. [Epub ahead of print]. [*Impact Factor 5.107, the journal is placed 2/14 in the field of Neuroimaging, 5/111 in the field of Radiology Nuclear Medicine & Medical Imaging; 37/304 in the field of Neurosciences*]
- (57) Anna Raabe, Katharina Pernhorst, Ann Kristin Schmitz, Alexander Grote, Horst Urbach, **Alon Friedman**, Albert J. Becker, Christian E. Elger, Pitt Niehusmann. 2012. Clinico-neuropathological correlations in vascular lesions suggest astroglial albumin storage as common epileptogenic factor. *Epilepsia*, 53(3):539-48. [*Impact Factor 4.052, the journal is placed 18th in the list of 158 journals in the field of Clinical Neurology*]
- (58) Itai Weissberg, Aljoscha Reichert, Uwe Heinemann and **Alon Friedman.** 2012 Blood-Brain Barrier Dysfunction in Epileptogenesis of the Temporal Lobe (Review). *Epilepsy Research and Treatment*, Special Issue on Temporal Lobe Epilepsy. *Epub June 7.* [*Impact Factor NA*]
- (59) Danica Stanimirovic and **Alon Friedman.** 2012. Pathophysiology of the Neurovascular Unit: Disease Cause or Consequence? *Journal of Cerebral Blood Flow and Metabolism*. 32(7):1207-21. [*Impact Factor 4.522, the journal is placed 53th in the list of 237 journals in the field of Neuroscience and 27/116 in the field of Endocrinology and Metabolism*]
- (60) Zimmerman, G., Shoham, S., Cohen, J., Gasho, C.J., Shenhar, S., Shalev, H., Berliner, S.S., Shelef, I., **Friedman, A.**, Cohen, H. and Soreq, H. 2012. Post-traumatic anxiety associates with failure of the innate immune receptor TLR9 to evade the pro-inflammatory NFκB pathway. *Translational Psychiatry*. 2: 1-11, e78. [*Impact Factor NA*]
- (61) **Alon Friedman**, Daniela Kaufer and Uwe Heinemann. 2012 Blood-brain barrier dysfunction, TGF-beta signaling and astrocyte dysfunction in epilepsy. *Glia*. 60(8):1251-7. [*Impact Factor 5.186, the journal is placed 34th in the list of 237 journals in the field of Neuroscience*]
- (62) Keren Ofek, Karl Schoknecht , Naomi Melamed-Book, Uwe Heinemann, **Alon Friedman** and Hermona Soreq. 2012. Fluoxetine Induces Vasodilation of Cerebral Arterioles by Co-modulating NO/muscarinic Signaling. *Journal of Cellular and Molecular Medicine*. [June 2012, Epub ahead of print] [*Impact Factor 4.608, the journal is placed 18/106 (Medicine Research & Experimental); 59/177 (Cell Biology)*]
- (63) Yehudit Gnatek, Gabriel Zimmerman, Yael Goll, Naim Najami, Hermona Soreq and **Alon Friedman.** 2012. Acetylcholinesterase loosens the brain's cholinergic anti-inflammatory response and promotes epileptogenesis. *Frontiers in Molecular Neuroscience*, 5: 66. [*Impact Factor NA*]
- (64) Dedeurwaerdere S, **Friedman A**, Fabene PF, Mazarati A, Murashima YL, Vezzani A, Baram TZ. 2012. Finding a better drug for epilepsy: Antiinflammatory targets. *Epilepsia* 53:1113-1118. [*Impact Factor 4.052, the journal is placed 18th in the list of 158 journals in the field of Clinical Neurology*]
- (65) Haviv Levi, Karl Schoknecht, Ofer Prager, Yoash Chassidim, Itai Weissberg, Yonatan Serlin, **Alon Friedman.** 2012. Stimulation of the Sphenopalatine Ganglion Induces Reperfusion and Blood-

- Brain Barrier Protection in the Photothrombotic Stroke Model. *PlosOne Epub Jun 22*. [Impact Factor 4.092, the journal is placed 12th in the list of 85 journals in the field of Biology]
- (66) Lev Pavlovsky, Yifat Bitan, Hadar Shalev, Yonatan Serlin and **Alon Friedman**. Stress-Induced Altered Cholinergic-Glutamatergic Interactions in the Mouse Hippocampus. *Brain Research*, 1472:99-106
- (67) Lapilover EG, Lippmann K., Salar S., Maslarova, A., Dreier JP, Heinemann, U and **Friedman, A.** (2012) Peri-infarct Blood-Brain Barrier Dysfunction Facilitates Induction of Spreading Depolarization Associated with Epileptiform Discharges. *Neurobiology of Disease*, 48(3):495-506. [Impact Factor -5.403, the journal is placed 88th in the list of 212 journals in the field of Neuroscience]
- (68) Oliver Braganza, Peter Bedner, Kerstin Hüttmann, Elena von Staden, Jacqueline Trotter, **Alon Friedman**, Gerald Seifert, Christian Steinhäuser. (2012) Albumin is taken up by hippocampal NG2 cells and astrocytes and transiently decreases astrocytic gap junction coupling. *Epilepsia*, 53:1898-906. [Impact Factor 4.052, the journal is placed 18th in the list of 158 journals in the field of Clinical Neurology].
- (69) Federica Frigerio, Angelisa Frasca, Itai Weissberg, Sara Parrella, **Alon Friedman**, Annamaria Vezzani and Francesco Noe. (2012) Long lasting pro-ictogenic effects induced in vivo by rat brain exposure to serum albumin in the absence of concomitant pathology. *Epilepsia*, 53:1887-97. [Impact Factor 4.052, the journal is placed 18th in the list of 158 journals in the field of Clinical Neurology].
- (70) Joan Abbott and **Alon Friedman**. Overview and Introduction: The blood-brain barrier in health and disease'. (2012) *Epilepsia, Special Issue on Blood-brain barrier in Neurological Diseases (Editor Alon Friedman)*, 53 (S6): 1-6 [Impact Factor 4.052, the journal is placed 18th in the list of 158 journals in the field of Clinical Neurology].
- (71) Maren K. L. Winkler, Yoash Chassidim, Svetlana Lublinsky, Gajanan S. Revankar, Sebastian Major, Eun-Jeung Kang, Ana I. Oliveira-Ferreira, Johannes Woitzik, Nora Sandow, Michael Scheel, **Alon Friedman** and Jens P. Dreier. (2012). Impaired neurovascular coupling to ictal epileptic activity and spreading depolarization in a patient with subarachnoid hemorrhage: Possible link to blood-brain barrier dysfunction. *Epilepsia, Special Issue on Blood-brain barrier in Neurological Diseases (Editor Alon Friedman)*, 53 (S6): 22-30 [Impact Factor 4.052, the journal is placed 18th in the list of 158 journals in the field of Clinical Neurology].
- (72) Shoknecht, Karl, Gabi, Szendro, Eifargan, Gal, **Friedman, Alon**, and Shelef, Ilan. Detection of cerebral hyperperfusion syndrome after carotid endarterectomy with CT perfusion. *Journal of Neuroimaging, J Neuroimaging*. Nov 19.
- (73) Schmitz AK, Grote A, Raabe A, Urbach H, **Friedman A**, von Lehe M, Becker AJ, Niehusmann P. Albumin storage in neoplastic astroglial elements of gangliogliomas. *Seizure*. (2012). S1059-1311(12)
- (74) Eun-Jeung Kang, Sebastian Major, Devi Jorks, Clemens Reiffurth, Nikolas Offenhauser, **Alon Friedman**, and Jens Dreier. (2013) Blood-brain barrier opening to large molecules does not imply blood-brain barrier opening to small ions. *Neurobiol Dis*;52:204-18 [Impact Factor -5.403, the journal is placed 88th in the list of 212 journals in the field of Neuroscience]
- (75) Yoash Chassidim, Ronel Veksler, Svetlana Lublinsky, GabyS Pell, **Alon Friedman** and Ilan Shelef. (2013). Quantitative Imaging Assessment of BBB Permeability in Humans. *Fluids Barriers CNS*. 7;10(1):9.

- (76) Anna Maslarova, Seda Salar, Ezequiel Lapilover, Alon Friedman, Rüdiger W. Veh and Uwe Heinemann. (2013) Increased susceptibility to acetylcholine in the entorhinal cortex of pilocarpine-treated rats involves alterations in KCNQ channels. *Neurobiology of Disease*, Neurobiol Dis. 56:14-24. [Impact Factor -5.403, *the journal is placed 88th in the list of 212 journals in the field of Neuroscience*]
- (77) Yonatan Serlin, Geva Tal. Yoash Chassidim, Yisrael Parmet, Oren Tomkins, Boris Knyazer, **Alon Friedman***, Jaime Levy. (2013) Novel Fluorescein Angiography-Based Computer-Aided Algorithm for Assessment of Retinal Vessel Permeability. *Corresponding author. *PlosOne* 8(4) e61599.
- (78) O. Chai, A. Sommer, G. Zimmerman, H. Soreq, **A. Friedman**, T. Bdolah-Abram, I. Aroch, M.H. Shamir. (2013) Acetylcholinesterase activity in the cerebrospinal fluid of dogs with seizures. *The Veterinary Journal*. 198(1):292-4.
- (79) Fassler M, Weissberg I, Levy N, Diaz-Griffero F, Monsonogo A, **Friedman A**, Taube R. (2013) Preferential lentiviral targeting of astrocytes in the central nervous system. *PLoS One* 8(10):e76092.
- (80) Rotem Saar-Ashkenazy, Jonathan E. Cohen, Jonathan Guez, Chris Gasho, Ilan Shelef, **Alon Friedman**, and Hadar Shalev. (2014) Reduced Corpus-Callosum Volume in Posttraumatic Stress Disorder Highlights the Importance of Interhemispheric Connectivity for Associative Memory. *Journal of Traumatic Stress*, February 2014, 1-19.
- (81) Guy Bar-Klein, Luisa P. Cacheaux, Lyn Kamintsky, Ofer Prager, Itai Weissberg, Karl Schoknecht, Paul Cheng, Soo Young Kim, Lydia Wood, Uwe Heinemann, Daniela Kaufer and **Alon Friedman**. (2014) Losartan prevents acquired epilepsy via TGF- β signaling suppression. *Annals of Neurology*, 75(6):864-75
- (82) Shai Shrot, Erez Ramaty, Yoav Biala, Guy Bar-Klein, Moshe Daninos, Lyn Kamintsky, Igor Makarovsky, Liran Stadlander, Yossi Rosman, Amir Krivoy, Ophir Layon, Michael Kasirer, **Alon Friedman** and Yoel Yaari. (2014) Prevention of Organophosphate-Induced Chronic Epilepsy by Early Benzodiazepine Treatment, *Toxicology*, 2014 323:19-25
- (83) Seda Salar, Itai Weissberg, Liron Sheintuch, Anna Maslarova, Kristina Lippmann, Julia Nichtweiss, Wolfram S. Kunz, Zamir Shorer, Alon Friedman and Uwe Heinemann. (2014) Blood-brain barrier dysfunction can contribute to pharmacoresistance of seizures. *Epilepsia* 55(8):1255-63.
- (84) Yael Merbl, Adi Sommer, Orit Chai, Itamar Aroch DVM, Gabi Zimmerman PhD, **Alon Friedman**, Hermona Soreq and Merav H. Shamir . (2014) Tumor necrosis- α and interleukon-6 concentrations in Cerebro-Spinal Fluid of dogs following seizures. *Journal of Veterinary Internal Medicine* 28(6):1775-1781.
- (85) Karl Schoknecht, Ofer Prager, Udi Vazana, Lyn Kamintsky, Denise Harhausen, Marietta Zille, Lena Figge, Yoash Chassidim, Eyk Schellenberger, Richard Kovács, Uwe Heinemann, **Alon Friedman**. (2014) Monitoring stroke progression: in-vivo imaging of cortical perfusion, blood-brain barrier permeability, and cellular damage in the rat photothrombosis model. *J Cerebral Blood Flow and Metabolism*, 34:1791-801
- (86) Itai Weissberg , Ronel Veksler, Lyn Kamintsky, Rotem Saar-Ashkenazy, Dan Z Milikovsky, Ilan Shelef and Alon Friedman. (2014) Imaging Blood-Brain Barrier Dysfunction in American Football Players. *JAMA Neurology*, 71:1453-5.
- (87) Guy Bar-Klein, Evyatar Swissa, Lyn Kamintsky, Tawfeeq Shekh-Ahmad, Rotem Saar-Ashkenazy, Yechiel Hubary, Shai Shrot, Liran Stetlander, Arik Eisenkraft, **Alon Friedman**, and Meir Bialer (2014) *sec*-Butyl-propylacetamide (SPD) and two of its stereoisomers rapidly terminate paraoxon-induced status epilepticus in rats. *Epilepsia* 55: 1953–1958

- (88) **Alon Friedman**, Guy Bar-Klein, Yonatan Serlin, Yisrael Parmet, Uwe Heinemann and Daniela Kaufer. (2014) Should losartan be administered following brain injury? *Experts Rev Neurotherapeutics*, 27:1-11
- (89) Ronel Veksler, Ilan Shelef and **Alon Friedman**. (2014) Blood-Brain Barrier Imaging in Human Neuropathologies. *Archives of Medical Research*, Nov. 29, [Epub ahead of print].
- (90) **Neurocysticercosis: A natural human model of epileptogenesis**. Theodore E. Nash, Siddhartha Mahanty, Jeffrey A. Loeb, William H. Theodore, **Alon Friedman**, Josemir W. Sander, Gagandeep Singh, Esper Cavalheiro, Oscar H. Del Brutto, Osvaldo M. Takayanagui, Agnes Fleury, Manuela Verastegui, Pierre-Marie Preux, Silvia Montano, E. Javier Pretell, A. Clinton White Jr, Armando E. Gonzales, Robert H. Gilman and Hector H. Garcia *Epilepsia*, December 2014
- (91) Yonatan Serlin, Ilan Shelf, Boris Knyzer and **Alon Friedman**. Anatomy and Physiology of the Blood-Brain Barrier. *Seminars Cell. Dev. Biology, Special issue (Ed. Alon Friedman) Accepted for publication*
- (92) Daniela Kaufer and **Alon Friedman**, Blood-brain barrier in health and disease. *Seminars Cell. Dev. Biology, Special issue (Ed. Alon Friedman) Accepted for publication*
- (93) Sagy-Bross C¹, Kasianov K, Solomonov Y, Braiman A, **Friedman A**, Hadad N, Levy R. (20014) The role of Cytosolic Phospholipase A2 α in Amyloid Precursor Protein induction by amyloid beta1-42 - Implication for Neurodegeneration. *J Neurochem*. 2014 Dec 23. [Epub ahead of print]

III Books

- (1) Stress - From Molecules to Behavior: A Comprehensive Analysis of the Neurobiology of Stress Responses. Editors: Hermona Soreq, **Alon Friedman**, Daniela Kaufer, Wiley, 2009.

IV Chapters in books

- (1) Gutnick, M.J. and **Friedman, A.** 1986, Synaptic and intrinsic mechanisms of synchronization and epileptogenesis in the neocortex. *Exp. Brain Research suppl.* 14: 327-335.
- (2) Kaufer, D., **Friedman, A.**, Sternfeld, M., Seidman, S., Beeri, R. Andres, C., and Soreq, H. 1996, Central and peripheral consequences of cholinergic imbalance in Alzheimer's disease. In: *Alzheimer Disease: From Molecular Biology to Therapy*. Eds: R. Becker and E. Giacobini. Birkhauser, Boston Inc. pp. 153-158.
- (3) Soreq, H., Kaufer, D., **Friedman, A.** and Glick, D. 2000, "Blood-Brain-Barrier Modulation and Low-Level Exposure to Xenobiotics". In: *Chemical Warfare Agents: Low Level Toxicity*". S.M. Somani and J.A. Romano, Eds., CRC Press, Boca Raton, FL pp. 121-144.
- (4) Soreq, H., Kaufer, D., Shelef, I., Golan, H., Tomkins, O., Glick, D., Reichenthal, E. and **Friedman, A.** 2002, The molecular biology of Blood Brain Barrier disruption under stress. In: *Brain Disease: Therapeutic strategies and repair*. O. Abramsky, A. Miller and G. Said, Eds., Martin Dunitz, Publishers, pp. 231-238.
- (5) Avivi, E., Tomkins, O., Korn, A., Pavlovsky, L., Shelef, I. and **Friedman, A.** 2004, Persistent Blood-Brain-Barrier Disruption in Humans: A Window to Neurodegenerative Diseases, In: Silman, I., Fisher, A., Anglister, L. Michaelson, D. and Soreq, H. (eds.) *Cholinergic Mechanisms*, Taylor & Francis, London. pp. 423 – 429.

- (6) Browne, R.O., Pavlovsky, L., and **Friedman, A.** 2004, Muscarinic Neuromodulation in the Hippocampus and Parahippocampal Region. In: Silman, I., Fisher, A., Anglister, L. Michaelson, D. and Soreq, H. (eds.) *Cholinergic Mechanisms*, Taylor & Francis, London. pp. 499-507.
- (7) **Alon Friedman** and Lev Pavlovsky, 2009. The Cholinergic Model for PTSD: From acute stress to PTSD, From Neuron to Network and Behavior. In: STRESS: from molecules to behavior. A comprehensive analysis of the neurobiology of stress responses. Soreq, H., **Friedman, A.** and Kaufer. D (eds.) Chap 15. Pp. 283-296.
- (8) Jonathan E. Cohen, Gabriel Zimmermann, **Alon Friedman** and Hermona Soreq. 2012. Genomic implications of anticholinesterase sensitivities. *Anticholinesterase Pesticides: Metabolism, Neurotoxicity and Epidemiology*. Editors: Tetsuo Satoh and Ramesh C. Gupta. John Wiley, *in press*.
- (9) **Alon Friedman** and Uwe Heinemann. 2012. Role of blood-brain barrier injury in epileptogenesis. *Jasper's Basic Mechanisms of the Epilepsies*. Editors: Jeffrey L. Noebels, Massimo Avoli, Michael A. Rogawski, Richard W. Olsen and Antonio V. Delgado-Escueta, Summary published in *Epilepsia*, 51 (Suppl. 5): 34, 2010.
- (10) Yoash Hassidim, Ofer Prager, Ilan Shelf and **Alon Friedman**. 2012. Assessment of Blood-brain barrier breakdown. In: *Animal Models of Acute Neurological Injuries*. Jun Chen, Xio-Ming Xu, Zao C. Xu and John H. Zhang (Eds.) Humana Press, Colone 1, pp. 401-5.
- (11) **Alon Friedman** and Mireille Lerner-Natoli. 2012. Targtes for antiepileptogenesis: blood-brain barrier and angiogenesis. *Therapeutic targets and perspectives in the pharmacological treatment of epilepsy*. Editor: Holger Lerche and Heidrun Potschka. UNI-MED Science, *in press*.

V Unrefereed professional articles and publications

- (1) Korn, A. and **Friedman, A.** 1999, Intraoperative Monitoring: Clinical Guidelines, The Israel Society for Clinical Neurophysiology.

8. Lectures and Presentations:

I Invited lectures at conferences/meetings:

1997 The Blood-Brain Barrier and StressChronic Fatigue Syndrome, Dublin, Ireland.

1998 Molecular and Electrophysiological Modulations following Stress and Anticholinesterases, European Society for Neurochemistry, St. Petersburg, Russia.

1998 Molecular Neurophysiology of Central Cholinergic Mechanisms, Symposium on Cholinergic Mechanisms, Arcachon, France.

2001 Blood Brain-Barrier Disruption in Humans. Blood-Brain Barrier Mechanisms from Molecule to Patient, Tasmania, Australia.

2002 Blood Brain-Barrier Disruption in Humans is Associated with Abnormal Cortical Theta Rhythm Generation: The Potential Involvement of Acetylcholinesterase. XIth international symposium on cholinergic mechanisms - function and dysfunction & 2nd misrahi symposium on neurobiology, St. Moritz, Switzerland.

2002 Low-Resolution Brain Electromagnetic Tomography (LORETA): Use in Epilepsy and Related Disorders, 11th European Congress of Clinical Neurophysiology. Barcelona, Spain.

2002 Blood-Brain-Barrier Disruption in Humans: Physiological Correlates, Fifth Symposium, Signal Transduction in the Blood-Brain-Barriers, Potsdam, Berlin, Germany.

2003 Electrophysiological Responses to Cortical Blood-Brain-Barrier Disruption, Sixth Symposium, Signal Transduction in the Blood-Brain-Barriers, Szeged, Hungary.

2004 Glial-Neuronal Interactions in the Blood-Brain Barrier Disrupted Cortex. Seventh Symposium, Signal Transduction in the Blood-Brain-Barriers, Potsdam, Berlin, Germany.

2004 "Pathophysiology of the Neurovascular Unit: Lessons from Imaging". Biomillennium Conference, Cappadocia, Turkey.

2006 The role of the blood-brain barrier in epileptogenesis. 7th European congress on epileptology, Helsinki.

2006 Neuronal-Glial interactions in brain injury. 15th World Congress of Pharmacology Beijing, China.

2006 Mechanisms underlying epileptogenesis in the injured cortex. 1st North American Regional Epilepsy Congress. Annual Meetings of the American Epilepsy Society & Canadian League against Epilepsy. San Diego, California

2006 Molecular, physiological and clinical consequences of blood-brain barrier disruption. Eighth Symposium, Signal Transduction in the Blood-Brain-Barriers, June 2006, Salzburg, Austria.

2007 Altered blood-brain communication and neural dysfunction in the stressed brain. 9th Neuroscience International Winter Conference, March, 2007, Soelden, Austria.

2007 The role of the blood-brain barrier in the pathogenesis of neurological disorders: evidence from human and animal studies. CVB Meeting, June, 2007, Ottawa.

2007 Imaging the Blood-brain barrier in animals and humans. Satellite Workshop on surrogate markers of BBB disruption. CVB Meeting, June, 2007, Ottawa.

2007 Blood-brain barrier as a target for therapeutic intervention. 27th International Epilepsy Meeting, July, 2007, Singapore.

2007 The Neurovascular Unit in Epileptogenesis: From bed-side to bench and back. Michael Prize Lecture. 27th International Epilepsy Meeting, July, 2007, Singapore.

2007 The Neurovascular Unit in Epilepsy. Weitzman Institute, September, 2007, Rechovot.

2008 Identifying BBB dysfunction and leaks in patients. Blood-Brain Barrier Consortium Club Symposium : 'The Human Blood-Brain Barrier and Blood-Retinal Barriers', April 2008, Hodgkin Building, King's College Guy's Campus, London.

2008 The Blood-brain barrier during epileptogenesis. 7th Dutch Endo-Neuro-Psycho Meeting. June 2008, Doorwerth, The Netherlands.

2008 The Blood-Brain Barrier in Epileptogenesis, Advanced International Course; Bridging Basic with Clinical Epilepsy, Venice International University, July-August 2008, San-Servolo, Italy.

2008 The Neurovascular Unit in Epileptogenesis: From Bedside to the Bench and Back. The Michael Prize Symposium, European Epilepsy Meeting, September, 2008, Berlin, Germany.

2008 Astrocytic-Neuronal Interactions in Epileptogenesis, European Epilepsy Meeting, September, 2008, Berlin, Germany.

2008 The Neurovascular Unit in Epileptogenesis, The American Epilepsy Society Meeting, December, 2008, Seattle Washington.

2009 Impaired astrocytic gene expression patterns due to aberrant TGF-beta receptor signaling in neocortical epileptogenesis. 28th International epilepsy Congress, Budapest, Hungary.

2009 TGFβ signaling in epilepsy. 28th International epilepsy Congress, July 2009, Budapest, Hungary.
2009 Rationality and Neuroscience. A workshop organized by the Berlin-Brandenburg Academy and the Israel Academy. December 2009, Berlin.

2009 Hippocampal Cholinergic Dysfunction in Epilepsy: New and Classical roles for an old player? International symposium on hippocampal function and dysfunction, December, 2009, Berlin, Germany.

2010 Blood-brain barrier breakdown in neurological disorders: from bed-side to bench and back. USGEB Annual Meeting 2010 "Frontiers in Human Biology", February 2010, Palazzo Congressi, Lugano, Switzerland.

2010 Blood-brain barrier in stroke and its role in epileptogenesis. Gordon Conference, June 2010.

2010 Blood-brain barrier breakdown and brain dysfunction. 9th european congress on epileptology, June 2010, Rhodes.

2010 K⁺-buffering via Kir channels is reduced in seizure-induced blood-brain-barrier disruption. 9th european congress on epileptology, June 2010, Rhodes.

2010 Blood-brain barrier and inflammation in epileptogenesis. 1st meeting on Immunity and Inflammation in Epilepsy, September 2010, Milan.

2011 Blood-brain barrier dysfunction and epileptogenesis. 3rd London Colloquium on Status Epilepticus. April 2011, Oxford.

2011 BBB dysfunction, epileptogenesis and neurodegeneration: a puzzle of a chicken and eggs? Speaker and Chair the session on "Neurodegeneration and BBB functionality" Conference on Cerebral Vascular Biology (CVB). June 2011, Leiden.

2011 Modulating BBB permeability: Why is it that difficult and do we want it? 14th Symposium on Signal Transduction in the Blood-Brain Barriers. September 2011, Istanbul.

2011 The blood-brain barrier in health and chronic neurodegenerative disorders. 24th European College of Neuropharmacology. September 2011, Paris.

2012 The blood-brain barrier in neurological diseases. 4th France-Israel binational Conference. March 2012, Aussois, France.

2012 Blood-brain barrier failure: mechanisms and implications. Versailles International Neurointensive Care Symposium (VINCS). June 2012, Versailles, France.

2012 Blood-brain barrier and epilepsy. Swedish Epilepsy Society (Swedish chapter of ILAE) autumn course "bridging clinical and preclinical epileptology" November 2012, Lund, Sweden.

2013 10th international meeting on cerebrovascular biology (CVB). June, Montreat, Canada.

2013 30th Epileptogenesis: cells, molecules and the blood brain barrier. International Epilepsy Congress, June, Montreal, Canada.

2013 Imaging Blood-Brain Barrier in Pathology. Sixteenth International Symposium Signal Transduction in the Blood-Brain Barriers. Sümeg, Hungary.

2014 The 11th European Congress on Epileptology, Imaging blood-brain barrier dysfunction as a biomarker for epileptogenesis. July 2014, Stockholm.

2014 Blood-brain barrier dysfunction and neuronal hyper-excitability: the chicken and egg dilemma? 17th International Symposium Signal Transduction in the Blood-Brain Barriers. Dublin, Ireland.

II Selected Presentations at Meetings:

- (1) Barkai, E. **Friedman, A.**, Lobel-Yaakov, R. and Gutnick, M.J. 1985, Synchronous paroxysmal discharges in neocortical slices from chemically kindled rats. Soc. Neurosci. Abst. 11: 1314.
- (2) **Friedman, A.** and Gutnick, M.J. 1987, Burst generation in EGTA-injected neurons. Second World Congress of Neuroscience.
- (3) **Friedman, A.** and Gutnick, M.J. 1987, Role of intracellular calcium in determining the firing properties of neocortical neurons. 9th International Biophysics Congress, Jerusalem.
- (4) Gutnick, M.J. and **Friedman, A.** 1987, Intracellular injection of calcium chelators induce burst generation in neocortical neurons. Soc. Neurosci. Abst. 13.
- (5) **Friedman, A.** and Gutnick, M.J. 1989, Calcium activated, sodium dependent depolarizing after potentials in neocortical neurons. Pflug. Archive, 413: R22.
- (6) Barkai E., **Friedman, A.** and Gutnick, M.J. 1989, 4AP-induced neocortical synchronization in the presence of inhibition. Pflug. Archive, 413: R23.
- (7) **Friedman, A.** and Gutnick, M.J. 1989, Calcium-activated, sodium dependent depolarizing afterpotentials in neocortical neurons. Pflug. Archive, 413: R22.
- (8) Chagnac-Amitai, Y., **Friedman, A.**, Connors, B.W. and Gutnick, M.J. 1990, Dendritic spike generation in neocortical neurons in-vitro. 13th Annual Meeting of the European Neurosci. Assoc.
- (9) Gutnick, M.J., **Friedman, A.** White, E.L. and Segev, I. 1990, Influence of spine dimensions on synaptic processing: detailed compartmental model of an EM reconstructed spiny stellate cell in mouse barrel cortex. 13th Annual Meeting of the European Neurosci. Assoc.

- (10) Amitai, Y., **Friedman, A.**, Connors, B.W. and Gutnick, M.J. 1991, Dendriticelectrogenesis in neocortical neurons in vitro. 21st Annual Meeting of the Society for Neurosciences.
- (11) Reuveni, I., **Friedman, A.**, and Gutnick, M.J. 1992, Non-homogeneous distribution of calcium electrogenesis along the dendrites of neocortical pyramidal neurons. 22nd Annual Meeting of the Society for Neurosciences.
- (12) **Friedman, A.**, Melamed, I. and Reichenthal, E. 1993, High mental function disturbances as a first presentation of brain tumors. The second Israeli Neuroscience Meeting, Eilat. Abstracts 67.
- (13) Fleidervish, I., **Friedman, A.** and Gutnick, M.J. 1994, Slow inactivation of transient and persistent sodium currents in neocortical neurons. Soc. Neurosc. Abs. 20(1-2): 727.
- (14) Fleidervish, I., **Friedman, A.** and Gutnick, M.J. 1994, Slow Na channel inactivation underlies cumulative slow adaptation of neuronal firing in guinea-pig and mouse neocortical slices in vitro. J. Physiol. 481P:43P-44P.
- (15) Fleidervish, I., **Friedman, A.** and Gutnick, M.J. 1995, Slow inactivation of transient and persistent sodium currents in neocortical neurons. Israel J. Med. Sci. 31:
- (16) Kaufer-Nachum, D., **Friedman, A.**, Tur-Kaspa, I., Shemer, J., and Soreq, H. 1995, Ex-Vivo brain slices as a model system for molecular neurobiology-electrophysiology studies. Israel J. Med. Sci. 31: 755.
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- (27) Seiffert E., Pavlovsky L., Heinemann U., Korn A., Golan H., **Friedman, A.** 2005, Persistent blood-brain barrier disruption may underlie interferon- alpha- induced seizures. Israel Society of Neuroscience Annual Meeting, Reviews in the Neurosciences, 16(supplement 1) S57.
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- (29) David Y., Ivens S., Levy H., **Friedman, A.** 2005, Albumin induced epileptiform activity is mediated via its interactions with transforming growth factor beta receptor. Israel Society of Neuroscience Annual Meeting, Reviews in the Neurosciences, 16(supplement 1) S15.
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- (32) Friedman O, Tomkins O, Ivens, S, **Friedman, A** 2006, Anatomical Degeneration and Functional Deterioration in the Rat Epileptic Cortex. 7th European congress of epileptology, Helsinki. Presentation: p437, page 116
- (33) L.P. Flores, S. Ivens, **A. Friedman**, and D. Kaufer. Gene expression modulations underlying epileptogenesis following BBB Malfunction. Abstract presented at the American Epilepsy Society annual meeting 2006.
- (34) Jonathan Cohen, HadarShalev, Shy Hefetzl, Roee Admon, Ilan Shelef, Talma Hendler, and **Alon Friedman**. Distinct Spatio-Temporal Brain Activation in Healthy and Post Traumatic Subjects in Response to Emotional stimuli. The 4th Tel Aviv Human Brain Mapping Meeting. Tel Aviv (July 2008)
- (35) Gnatek, Y., Najami, N., and **Friedman, A**, Altered Cholinergic Gene Expression Following Status Epilepticus and its Role in Epileptogenesis. Abstract presented at the European Epilepsy Meeting, Berlin (September, 2008)
- (36) Maya Ketzef, **Alon Friedman** and Daniel Gitler. Age-Dependent Cortical Plasticity in Synapsin Knockout Epileptic Mice. Abstract presented at the European Epilepsy Meeting, Berlin (September, 2008)
- (37) M. Ketzef, I. Weissberg, A. Friedman and D. Gitler. Age-Dependent Neocortical Plasticity in Synapsin Knockout Epileptic Mice. Abstract presented at the American Neuroscience Meeting, (November, 2008)
- (38) Jonathan E. Cohen, HadarShalev, IlanShelef, Roee Admon, Talma Hendler and **Alon Friedman**. Emotional brain rhythms and their impairment in post-traumatic patients: correlative EEG-fMRI study. The Annual meeting of the Israeli Society for Neuroscience, Eilat, Nov. 2009, Published online: The Journal of Molecular Neurosciencem 39, sup. 1.
- (39) Levi H., Prager O., Chassidim Y. and **Friedman A.** A Novel method to determine dynamic changes in brain vessels diameter. The Annual meeting of the Israeli Society for Neuroscience, Eilat, 2009, Published online: The Journal of Molecular Neurosciencem 39, sup. 1.

- (40) Guy Bar-Klein, Luisa Cacheaux, Kaufer Daniela and **Alon Friedman**. Blocking TGF-beta signaling as a potential anti-epileptogenic treatment. The Annual meeting of the Israeli Society for Neuroscience, Eilat, 2009, Published online: The Journal of Molecular Neuroscience 39, sup. 1.
- (41) Ofer Prager, Yoash Chassidim, Maria Litvan-Tannenbaum, Chen Klein, Haviv Levi, Akiva Korn, Ilan Shelef and **Alon Friedman**. Dynamic in-vivo imaging of cerebral blood flow and blood-brain barrier permeability. The Annual meeting of the Israeli Society for Neuroscience, Eilat, 2009, Published online: The Journal of Molecular Neuroscience 39, sup. 1.
- (42) Efrat N., Dagan A., **Friedman A.**, Shallom I. EEG fMRI study: automatic localization of an epileptic focus based on parametric multi channel analysis and pattern recognition technologies . The Annual meeting of the Israeli Society for Neuroscience, Eilat, 2010, Published online: The Journal of Molecular Neuroscience (supplementary)
- (43) Fassler M., Weissberg I., Sharony E., **Friedman A.**, Taube R. Cell specific gene targeting to the CNS using engineered lentiviruses. The Annual meeting of the Israeli Society for Neuroscience, Eilat, 2010, Published online: The Journal of Molecular Neuroscience (supplementary)
- (44) Kamintsky L., Weissberg I., Ketzef M., Gitler D., Becker A., Zigel Y., and **Friedman A.** A Multi-Model Unbiased Algorithm for Reliable Detection of Seizures. The Annual meeting of the Israeli Society for Neuroscience, Eilat, 2010, Published online: The Journal of Molecular Neuroscience (supplementary)
- (45) Schoknecht K., David Y., Heinemann U, **Friedman A.** Blood-brain barrier dysfunction: a target to prevent secondary stroke complications? The Annual meeting of the Israeli Society for Neuroscience, Eilat, 2010, Published online: The Journal of Molecular Neuroscience (supplementary)
- (46) Weissberg I., Becker A.J, Schoknecht K., Kamintsky L, **Friedman A.** Albumin-induced model of mesial temporal lobe epilepsy in mice. The Annual meeting of the Israeli Society for Neuroscience, Eilat, 2010, Published online: The Journal of Molecular Neuroscience (supplementary)

III Seminars at universities and institutions

- 1988 Department of Neurology, Charing Cross Hospital, London University. Title: Calcium electrogenesis in neocortical neurons in-vitro.
- 1990 Department of Physiology, Cologne University. Title: Mechanisms underlying firing patterns of neocortical neurons in-vitro.
- 1999 Department of Anatomy and Neurobiology, University of Maryland, Baltimore. Title: The role of acetylcholine in hippocampal synaptic transmission: modulation by stress.
- 1999 Psychiatric Medical Center, Beersheva. Title: Mechanisms Underlying Post-Traumatic Stress Disorder.
- 2000 Department of Neurology, Cologne University Hospital. Title: Physiological and Molecular Mechanisms Associated with Cholinergic Impairments.
- 2001 Johannes Muller Institute for Physiology, Humboldt University, Berlin. Title: Cholinergic mechanisms in CNS stress responses

- 2002 Johannes Muller Institute for Physiology, Humboldt University, Berlin. Title: How stress affects your brain.
- 2003 Department of Biology, Stanford University, USA. Title: Electrophysiological responses to Blood-Brain-Barrier Disruption.
- 2003 International Graduate School for Neuroscience, Ruhr-University Bochum, Germany. Title: How stress affects your brain: a cholinergic perspective.
- 2004 Hebrew University of Jerusalem. Title: The role of the blood-brain barrier in cortical pathology.
- 2004 Toronto University Neuroscience Graduate School. Title: Epileptogenesis under Blood-brain barrier disruption.
- 2007 Institut für Biochemie (Emil-Fischer-Zentrum), University of Erlangen-Nürnberg. Title: Neurodegeneration and the blood-neuron barrier
- 2008 Tel-Aviv Medical Center, Brain Imaging Center. Title: The Neurovascular Unit in brain disorders.
- 2008 Tel-Hashomer Brain research Center. Title: The Neurovascular Unit in Epileptogenesis: From Bedside to the Bench and Back.
- 2008 The Weitzman Institute: Title: The Role of the Neurovascular Unit in Pathophysiology of Neurological Disorders.
- 2009 Dresden University, Germany. Title: Post-Traumatic Stress Disorder: From cell, to network to human disease
- 2009 UCL Institute of Neurology, Queen Square, London. Title: The blood-brain barrier and epilepsy: when the hen breaks the egg.
- 2009 UCL Institute of Neurology, Queen Square, London. Title: Imaging the blood-brain barrier: from animal experiments to clinical applications. April 2009.
- 2010 Turkish Epilepsy Society, Istanbul. Titles: (1) Mechanisms underlying epileptogenesis following brain injury. (2) Interactions within the neurovascular unit in normal and pathological plasticity. November 2010.
- 2011 Stanford University, CA, USA. Title: From status epilepticus to spontaneous seizures: a potential role for blood-brain (dis)communication in epileptogenesis. April 2011.
- 2011 Mario Negri Institute, Milan, Italy. Title: Blood-brain barrier, immune response and seizures. July 2011.

IV Lectures in international courses

- 2008 San Servolo Epilepsy Summer Course: Bridging Basic with Clinical Epileptology
- 2011 San Servolo Epilepsy Summer Course: Bridging Basic with Clinical Epileptology
- 2014 San Servolo Epilepsy Summer Course: Bridging Basic with Clinical Epileptology

2015 Latin America Summer School on Epilepsy

9. Patents

Method of Treating Neurological Disorders. International Patent Application Serial No. US09/66856 for Kaufer D., **Friedman A.** and Cacheaux L. December 2009.

System and method for analyzing imaging data. Friedman A. Yoash Chassidim, Ofer Prager and Ilan Shelef. PCT Patent Application, Identified as Agent Docket No. 47268. US Provisional Patent Application No. 61/272,111 September 2009.

A method and composition for enabling passage through the blood-brain barrier. Soreq, H., Friedman, A., Seidman, S., Kaufer, D. International patent no.: US 6,258,780 B1 WO 1998/22132

Synthetic antisense oligodeoxynucleotides and pharmaceutical compositions containing them. Soreq H, Seidman S, Eckstein, F, Friedman A., Kaufer D. International patent 1998 no:727611.

10. Competitive and Non-competitive Research Grants

- 1996 The Charles Smith Laboratory for collaborative research, The National Institute for Psychobiology in Israel. "Electrophysiological and post-transcriptional features of congenital and drug-induced cholinergic imbalance: use of mouse septo-hippocampal slices" - 5000\$
- 1998 Israel Defense Forces, Medical Corps. "Electrophysiological and molecular consequences following long-lasting cholinergic imbalance in the mouse brain" - 30,000\$
- 1998 Research Achievements Grant, The Zlotowski Center for Neuroscience, Ben-Gurion University of the Negev - 5,000\$
- 1998 United-States-Israel Binational Science Foundation. The role of Cholinergic Inputs in Cortical Development. Grant no. 97-00174, Submitted with Prof. Asaf Keller, University of Maryland. 60,000\$ for two years.
- 1998 Health Ministry. Cholinergic Transmission in the Hippocampus Following Stress. 60,000NIS
- 1999 - 2003 US Army Medical Research Grant. Genetic and Epigenetic Mechanisms Underlying Acute and Delayed Neurodegenerative Consequences of Stress and Anticholinesterase Exposure. With Prof. Hermona Soreq.
- 2002 German-Israel Foundation, Young Scientist Program. Electrophysiological Responses to Blood-Brain-Barrier Disruption in the Rat Barrel Cortex. 40,000 €
- 2004 - 2007 Israel Academy of Science (Bikura Program): Functional and anatomical correlates of fast neuronal oscillations in the human brain: simultaneous EEG and MRI based measurements. With Talma Hendler and Yaniv Assaf. Tel-Aviv Medical Center, 192,000\$.
- 2004 - 2008 German Science Foundation (DFG) - SFB TR/3 (B9, Deutsche-Forschung Gemeinschaft): Cholinergic transmission in mesial temporal lobe epilepsies. With Uwe Heinemann, Charite Medical University, Berlin. 369,400 €.
- 2005 - 2006 The Rich Foundation: Rich Initiative for Excellence in the Negev. Interactions within the neurovascular unit: towards new targets for the prevention and treatment of common

- neurological diseases. 50,000\$
- 2005 - 2008 Israeli Ministry of Sciences: Neurogenomic approach to characterize individual response to stressful life experience. With Talma Hendler, Yaniv Assaf. Tel-Aviv Medical Center, Hermona Soreq – The Hebrew University Role: Co-PI 1,500,000NIS.
- 2005 - 2008 German Science Foundation (DFG) - SFB 507 (C9, Deutsche-Forschung Gemeinschaft) The role of blood-brain barrier disruption in cerebral cortex dysfunction. With Uwe Heinemann, Charite Medical University, Berlin. Role: PI 220,500 €.
- 2006 - 2008 German-Israeli Foundation (GIF) Can spreading depression be initiated via disturbance at the blood-brain-barrier? With Jens Dreier, Berlin. Role: PI ~200,000€.
- 2007 - 2011 Israel Academy of Sciences (ISF) 566/07 Astrocytic basis of epileptogenesis: Possible role of albumin and TGF β -receptors. Role: PI ~240,000\$.
- 2008 - 2009 Citizens United for Research in Epilepsy (CURE), in partnership with the United States Department of Defense (DOD), “Prevention of epilepsy After Traumatic Brain Injury” with Daniela Kaufer, Berkeley University. Role: Co-PI ~149,000\$
- 2008 - 2012 German Science Foundation (DFG) - SFB TR/3 (C8, Deutsche-Forschung Gemeinschaft): Temporal Lobe Epileptogenesis: Role of blood-brain barrier disruption, albumin and TGF β in generation of temporal lobe epilepsy. With Uwe Heinemann, Charite Medical University, Berlin. 440,400 €. Role: PI
- 2008 - 2009 Brainsgate Company. The role of SPG stimulation on cerebral blood flow and BBB permeability, 100,000\$. Role: PI
- 2008 - 2012 Binational Israel-USA (BSF): The role of TGF β in injury-related neocortical epileptogenesis. With Daniela Kaufer, Berkeley University. Role: PI Ca. 180,000\$
- 2009 - 2010 Israel Minister of Health: Brain Processing of Emotions in Post Traumatic Stress Disorder: Correlation with Inherited, RNA-mediated and Protein Biomarkers. Role: PI ca. 22,000\$
- 2009 - 2012 National Institute of Health (NIH RO1 NS066005): TGFbeta signaling in epileptogenesis. Role: Co-PI with Daniela Kaufer. Ca. ~400,000\$
- 2010 - 2011 German Science Foundation (DFG) trilateral program: Victims of War: Contribution of the Cholinergic System to the Development of PTSD in Children and Adolescents in Palestine and Israel. With Clemens Kirschbaum (Dresden), Hadar Shalev (Beer-Sheva), Hermona Soreq (Jerusalem), Abdel Aziz Mousa Thabet (Gaza), Najah Mahmoud Al-Khatib and Mohammed A M Shaheen (Al-Quds). Role: PI Ca. ~500,000€
- 2010 Brainsway Ltd: The potential effect of transcranial magnetic stimulation on blood-brain barrier permeability. A feasibility study. Ca. ~25,000\$
- 2010 - 2012 German Science Foundation (DFG): DISCHARGE-1: Depolarisations in ischaemia after subarachnoid haemorrhage-1. Role: Co-PI (with Jens Dreier, Charite). Ca. 65,000€
- 2010–2014 German-Israeli Foundation (GIF) Neurovascular coupling in the injured brain: Does blood-brain barrier breakdown play a role in disturbed neurovascular coupling and associated damage? With Jens Dreier, Berlin. Role: PI ~192,000€.
- 2011-2014 Israel Academy of Sciences (ISF). Blood-brain barrier opening underlying neural network dysfunction: the role of TGF- β signaling in synaptic plasticity, heterosynaptic interactions and epileptogenesis. ROLE: ~PI, 240,000\$
- 2011-2012 Brainsway Ltd. The effect of transcranial magnetic stimulation on BBB permeability. Ca. 150,000\$

- 2012-2015 ERA-NET NEURON Joint Call 2011: "European Research Projects on Cerebrovascular Diseases". SDSVD: Spreading Depolarization in Small Vessel Disease. With Jens Dreier and Brian MacVicar. Role: Co-PI ~60,000€
- 2013-2015 German Science Foundation (DFG) trilateral program: Victims of War: Contribution of the Cholinergic System to the Development of PTSD in Palestine and Israel. With Clemens Kirschbaum (Dresden), HadarShalev (Beer-Sheva), Hermona Soreq (Jerusalem), and Mohammed A M Shaheen (Al-Quds). Role: PI Ca. ~300,000€
- 2013-2017 7&th Framework Programme: Collaborative Project. EPITARGET – Targets and biomarkers for antiepileptogenesis. Role: PI Ca. ~300,000€
- 2014-2016 German Science Foundation (DFG) The role of blood-brain barrier dysfunction and albumin-induced TGF-beta signaling in neuronal plasticity and associated network modifications. Role: Co-PI (with Uwe Heinemann) Ca. ~313,000€