

Jacob Vaya

Curriculum Vita

1. Date and place of birth: October 1946; Iraq

Education:

From-To	Institution	Area of specialization	Degree
68-71	Hebrew Uni. Jerusalem, Israel.	Chemistry	BSc
71-73	Hebrew Uni. Jerusalem, Israel.	Polymers	MSc
74-78	Weizman Inst. Rehovot, Israel.	b-lactam chemistry	Ph.D

Academic and professional appointments:

From-To	Institution	Research area	Title
85-Present	Migal-Galilee Technology Center	Oxidative stress, phytoestrogens, atherosclerosis, antioxidants, SAR studies.	Department of Natural Medicinal Compounds
2002-2004	Tel-Hai Academic College	Teaching and administrator	Head of the Department of Biotechnology and Environmental Science.
81-85	Teva-pharmaceutical Ind.	R&D, Jerusalem	Projects manager

Appointments at academic institutions

1978-1981: Research Associate with Prof. T. Ross Kelly, Department of Chemistry, Boston College, Boston, Mass. USA.

1998 Sabbatical, Research Associate with Profs. Lester Packer. Dept. Molecular Cell Biology at UC Berkeley.

2001- Sabbatical – Research Associate with Profs. A. Sevanian and E. Cadenas. School of Pharmacy, University of Southern California.

2005- Sabbatical – , Centre for Neurotranslational Research, McGill University and LDI for Medical Research, Jewish General Hospital – Prof. Hyman Schipper.

2003 – Received - Associate Professor

Membership in professional organizations

1990- The Israeli Society of Oxygen and Free Radicals research

1995- The International Society of Free Radicals Biology and Medicine

1996- The European Atherosclerosis Society

1997- The Israeli Atherosclerosis Society

Competitive grants (Since 2000 only)

Date	Funding agency	Research topics	Grant - US \$
2000-2003	Israeli Science Foundation	Agonist and antagonist to estradiol. SAR	135,000
2001-2002	Ministry of industry and commerce, Chief science	New Whitening agents	100,000
2001-2003	Ministry of Science Culture & Sport division for Agricultural and Environment	Development of inhibitors for tyrosinase	80,000
2004-2007	Israeli Science Foundation	The search for natural substrates of Paraoxonase	65,000
2004-2005	D-Cure	The effect of PON1 on early advances glycation products	54,000
2006-	Ministry of industry and commerce, Chief science	of protein surfaces for decreased antigenicity	130,000

Teaching at Academic institutions

1993-present: Department of Biotechnology and Environmental Science, Tel Hai Academic College, Course: Organic Chemistry.

2003-2008: Department of Biotechnology and Environmental Science,, Tel Hai Academic College, Course: Free Radicals and Oxidative Stress.

10. Supervision of Graduate Students (since 2001 only)

2001-2006. Ohad Nerya, Ph.D. student. Completed

2001-2005. Andrea Shochtman, Ph.D. student. Completed

2006- Yuval Aluf - MSc. student.

2006- Hagi Tabory- Ph.D. student.

11. Significant publications in peer review journals :

Bachi M.D., **Vaya J.** 1976. Azetidin-2-oxo-4-thiones: Novel thermolytic product of β -lactam sulfoxides. *J. Am. Chem. Soc.* 98: 7825-7826.

Kelly T.R., **Vaya J.**, Ananthasubramanian L. 1980. An efficient, regiospecific synthesis of (\pm)-daunomycinone. *J. Am. Chem. Soc.* **102**: 5983-5984.

Keinan E., Kumar S., Dangur V., **Vaya J.** 1994. Evidence for a cyclic mechanism in (η^3 -allyl) palladium chemistry. Promotion of β -hydride elimination by unsaturated organometallics. *J. Am. Chem. Soc.* **116**: 11151.

Vaya J., Belinky P., Aviram M. 1997. Antioxidant constituents from licorice roots: isolation, structure elucidation and antioxidative capacity toward LDL oxidation. *Free Radic. Biol. Med.* **23**: 302-313.

Belinky P., Aviram M., Saeed Mahmood., **Vaya J.** 1998. Structural aspects of the inhibitory effect of glabridin on LDL oxidation. *Free Radic. Biol. Med.* **24**, 1419-1429.

Rosenblat, M.; Belinky, P. A.; **Vaya, J.**; Levy, R.; Merchav, S.; Aviram, M. Macrophage enrichment with the isoflavan glabridin inhibits NADPH oxidase. *J. Biol. Chem.* 1999 May **14**;274(20):13790-9

Snait Tamir, Mark Eizenberg, Dalia Somjen., Naftali Stern, Rayah Shelach, Alvin Kaye, and **Vaya, J.**, Estrogenic and Antiproliferative Properties of Glabridin from Licorice in Human Breast Cancer Cells. *Cancer Research.* **2000**, 60, 5704-5709.

Aviram Michael and **Vaya J.**, Markers for low-density lipoprotein oxidation. *Methods Enzymol.* **2001**;335:244-256.

Rivka Ofir, Snait Tamir, Soliman Khatib, **Vaya, J.**, Inhibition of serotonin re-uptake by licorice constituents. *The Journal of Molecular Neuroscience*, (2003); 20:35-140.

Andrea Szuchman, Michael Aviram, Snait Tamir, **Vaya, J.**, The effects of oxidative stress on cholesterol, linoleic acid or tyrosine vs. their mixture. (2003). *Free Radical Research.* 37:1277-88.

Vaya, J., and Snait Tamir. The relation between the chemical structure of phytoestrogens and their estrogen-like activities (2004). *Current Medicinal Chemistry.* 11:1333-1343.

Mira Rosenblat, Leonid Gaidukov, Olga Khersonsky, **Vaya, J.**, Roni Oren, Dan S. Tawfik, and Michael Aviram. The catalytic histidine dyad Of HDL-associated serum paraoxonase 1 (PON1) is essential for PON1 - mediated inhibition of LDL oxidation and stimulation of macrophage cholesterol efflux. (2006). *J. Biol. Chem.* 281(11), 7657-7665,

Vaya, J., Wei Song, Soliman Khatib, Guoyan Geng, and Hyman M. Schipper. Effects of Heme Oxygenase-1 Expression on Sterol Homeostasis in Rat Astroglia. (2007). *Free Radicals Biology & Medicine.* 42, 864-871.

Soliman Khatib, Ohad Nerya, Ramadan Musa, Snait Tamir, Tal Peter and **Jacob Vaya**, Enhanced 2,4-substituted resorcinol hydrophobicity augments tyrosinase inhibition potency – a study relating structure to activity. (2007). *J. Medicinal Chemistry*. 50(11), 2676-2681.

Vaya, J., and Hyman M. Schipper. Oxysterols, Cholesterol Homeostasis and the Pathogenesis of Alzheimer Disease, (a review). 2007. *Journal of Neurochemistry*. In press.

Patents

1. Jacob Pitcovsky and **Vaya, J.**, *Method for obtaining modified proteins and viruses with intact native binding site*. Israeli Patent Application No. 166049, in the name of Gavish-Galilee Bio Applications Ltd. 5 January 2005. PCT WO 2006/070371 A3

2. **Vaya, J.**, The development of exogenous marker for the characterization of oxidative stress. 31.05. 2005, GAVISH-012 US PROV.

Jacob Vaya, Snait Tamir, Title: Exogenous marker for oxidative stress,

3. WO 2006/103677 A2, WO 2006/103677 A3

4. **Vaya, J.**, and Hyman Schipper. Upregulation of Heme Oxygenase-1 Expression for the Reduction of Cholesterol. GAVISH-023 US PROV. December 2006.

13. Current research

Oxidative stress and diseases –

Multifunctional substrate for early detection of oxidative stress susceptibility and application to **oxidative stress-associated diseases**.

Collaborators: Prof. John Finberg, Faculty of Medicine, Technion, Haifa.

Heme oxygenase-1/sterol interaction in **Alzheimer disease-**

Collaborators: Prof. Hyman Schipper- McGill University, Centre for Neurotranslational Research, Jewish General Hospital, Quebec, Canada.

Method for obtaining modified proteins and viruses with intact native binding site. Collaborators: Prof. Jacob Pitcovski – Migal Galilee Technology Center.

Mutual associations between **Paraoxonase-1 (PON1)** and exogenous lactones.

Collaborators: Prof. Michael Aviram, School of Medicine, Technion, Haifa.

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