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RESUME

1. PERSONAL DETAILS

MICHAEL AVIRAM

Professor, Head of the Lipid Research Laboratory, Technion Faculty of Medicine, Rappaport Institute for Research in the Medical Sciences and Rambam Medical Center, Haifa, Israel

<http://www.aviramlipids.com>

<http://md.technion.ac.il>

<http://www.rambam.org.il>

<http://www.technion.ac.il/~rapinst>

<http://www.bio-rap.com>

Date & Place of Birth: December 7, 1948, Kfar Kish, Israel.
(ID # 00557978-4, SSN - 026586008).

Marital status: Married to Bruria, 3 children (Amitai / Amy -Maya, Yotvat, and Rohtem).

Work Address: Lipid Research Laboratory, Technion Faculty of Medicine,
and Rambam Medical Center, Haifa, Israel 31096

Tel: 972-4-8542970 Fax: 972-4-8542130 E mail: aviram@tx.technion.ac.il

Home address: 57 Svedia St., Haifa, 34980, Israel. (Tel: 972-4-8251369).

2. ACADEMIC DEGREES

1975-1978 **Doctorate Studies**, Clinical Biochemistry, Faculty of Medicine, Technion - Israel Institute of Technology, Haifa, Israel.

D.Sc. (Supervisor: Nobel Prize Laureate Prof. Avram Hershko).

1973-1975 **Graduate Studies**, Clinical Biochemistry, Faculty of Medicine, Technion -Israel, Institute of Technology, Haifa, Israel.

M.Sc. (Supervisor: Nobel Prize Laureate Prof. Avram Hershko).

1966-1970 **Undergraduate Studies**, Chemistry, Technion-Israel Institute of Technology, Haifa, Israel, **B.Sc.**

1978- 1980 **Postdoctoral Fellow:** Arteriosclerosis Center, Massachusetts Institute of Technology (M.I.T), Cambridge, MA, U.S.A.

3. ACADEMIC APPOINTMENTS

- 2008- present **Director**, Legacy Heritage Clinical Research Institute at Rambam (LHCRIR).
- 2007 – present **Bernice R. and Joseph Tanenbaum Chair in Preventive Medicine**.
- 2004 – present **Professor of Biochemistry**, Technion Faculty of Medicine, Haifa, Israel.
- 2008-2009 **Professor (Visiting), Department of Food Science and Human Nutrition, University of Illinois, Urbana - Champaign, U.S.A.** "Paraoxonase regulation by arachidonic acid derived prostaglandins".
- 1991- 2004 **Associate Professor of Biochemistry**, Technion Faculty of Medicine, Haifa.
- 1997-1998 **Professor (Visiting), University of Michigan, Ann Arbor, MI, U.S.A.**
 "Paraoxonase, lipid peroxidation, and macrophage cholesterol accumulation: molecular and cellular biology" (with Prof. Bert La Du).
- 1991-present **Member**, The Rappaport Institute for Research in the Medical Sciences, Haifa.
- 1994-2000 **Deputy Director**, The Rappaport Institute for Research in the Medical Sciences.
- 1987-1988 **Associate Professor (Visiting), Division of Metabolism, Department of Medicine, University of Washington, Seattle, WA, U.S.A.** "Lipase-modified LDL and macrophage cholesterol metabolism" (with Prof. Edwin Bierman and Prof. Alan Chait).
- 1986-1987 **Visiting Scientist, Specialized Center of Research (SCOR) in Atherosclerosis, Department of Medicine, Columbia University, New York, NY, U.S.A.** "Lipoprotein lipids modifications and macrophage cholesterol accumulation". (with Prof. Richard Deckelbaum).
- 1989-1997 **Adjunct Associate Professor**, Department of Food Engineering and Biotechnology, Technion, Haifa, Israel.
- 1985-1989 **Adjunct Assistant Professor**, Department of Food Engineering and Biotechnology, Technion, Haifa, Israel.
- 1984 **Visiting Scientist, Institute of Clinical Medicine, University of Tromso, Tromso, Norway** (3 months) "Dietary fatty acids, lipoproteins, and endothelial cell function". (with Prof. Arne Nordoy).
- 1983 **Visiting Scientist, Institute of Pharmacology, University of Milano, Milano, Italy.** "Plasma lipoproteins and platelet prostaglandins". (with Prof. Cesare Sirtori).
- 1973-1978 **Instructor**, Clinical Biochemistry, Faculty of Medicine Technion - Israel Institute of Technology, Haifa, Israel.
- 1975-1978 **Doctoral Studies**, "Turnover of the enzyme tyrosine-aminotransferase". Clinical Biochemistry, Faculty of Medicine, Technion-Israel Institute of Technology, Haifa, Israel. (Supervisor: Nobel Prize Laureate Prof. Avram Hershko).
- 1973-1975 **Graduate Studies**, "Degradation of RNA in cultured hepatoma cells". Clinical Biochemistry, Faculty of Medicine, Technion - Israel Institute of Technology, Haifa, Israel. (Supervisor: Nobel Prize Laureate Prof. Avram Hershko).
- 1966-1970 **Undergraduate Studies**, Faculty of Chemistry, Technion - Israel Institute of Technology, Haifa, Israel.

4. PROFESSIONAL EXPERIENCE AND DUTIES

Technion and Rambam Medical Center Activities

- 1980-present Head, Lipid Research Laboratory, Technion Faculty of Medicine, Rappaport Institute for Research in the Medical Sciences, and Rambam Medical Center
- 1984-present Head, Chemistry and Stat Laboratories, Rambam Medical Center
- 2008- present Director, Legacy Heritage Clinical Research Institute at Rambam (LHCRIR).
- 2009- present Member, Rambam Medical Center Executive Management.
- 2008-present Member of the Board, Technion Alumni.
- 2010-2012 Member of the Technion Committee for Academic development.
- 2010-2012 Member of the Technion Senate
- 2001-2010 Director, Department of Laboratory Medicine, Rambam Medical Center.
- 2008–2009 Member, Rambam Medical Center Management.
- 2005-2008 Member of the Technion's Senate Standing Committee and the Elected Senate.
- 2005-2008 Member of the Technion Academic Council for Continuous and External Studies.
- 2004–2006 Member of the Technion's Senate Committee for Research.
- 2006- 2007 Member of the Technion's Senate Harvey Prize Committee.
- 1994-2005 Chief Scientific Advisor, Rambam Medical Center.
- 1993-2001 Member, Committee for Human Resources, Rambam Medical Center.
- 1994-2000 Deputy Director, Rappaport Institute for Research in the Medical Sciences.
- 1994-1997 Head, Committee for Teaching and Curriculum, Technion Faculty of Medicine.
- 1993-1996 Chairman, The Technion Committee for Promotion of Laboratory Technicians.
- 1994-1996 Member, Committee for Graduate Studies, Technion Faculty of Medicine.
- 1993-1994 Deputy Head, Committee for Research, Technion Faculty of Medicine.
- 1993-1994 Deputy Head, Committee for Teaching, Technion Faculty of Medicine.
- 1991-1994 Member, the Secretariat, Board of Medical Research, Israel Ministry of Health.

International and National Activities

- 2008- 2011 Honorary Member of the Editorial Board, International journal of Wine Research.
- 2004-2007 Member of the Scientific Advisory Board, D- CURE, a non-profit Diabetes Research Organization.
- 2004-2007 Member of the Executive Board of Governors, D- CURE, a non-profit Diabetes Research Organization.
- 2006-2007 Israel Science Foundation (ISF) Centers of Excellence Committee.
- 2004-2007 Member, the Editorial Advisory Board, *Drug Design Reviews – Online*.
- 2004-2007 Member, the Editorial Board, *Medicinal Chemistry Reviews*.
- 2004-2007 Member, the Editorial Board, *Israel Medical Association Journal*.
- 2004-2005 Guest Editor for the Paraoxonases Serial Reviews: Free Radical Biology & Medicine.
- 2002-2005 Member, Committee of Process for the assessment of Scientific support for Claims on Food (PASSCLAIM, Group on Diet related atherosclerosis).
- 2001-2002 Member, the Ministry of Health Committee for Continuous Education Reward (Gemul Hishtalmut).
- 2001-2005 Member, the Scientific Advisory Board, Lycopin Fourm. Germany
- 2000-2005 Scientific Advisor, Roche Diagnostics GmbH, Penzberg, Germany.

- 2000-2005 Member, the Scientific Advisory Board (SAB), Molecutec and PharmaVitae, Molecular Technology Corporation, New York, NY, USA.
- 2000-2005 Member, the Scientific Advisory Board (SAB), Esperion Therapeutics, Ann Arbor, MI, USA.
- 2000-2005 Member, the Scientific Advisory Board (SAB), BioPreventive, Noninvasive Biomedical Diagnostic Tools, Migdal-Haemek, Israel.
- 2000-2005 Member, the Scientific Advisory Board (SAB), Profile Advanced Technologies (PAT), Jerusalem, Israel.
- 2000-2008 Member, the Editorial Board, *Current Medicinal Chemistry*.
- 1998-2009 Member, the Scientific Advisory Board (SAB) ROLL International, PomWonderful, LA, CA, USA.
- 1996-2007 Member, the Editorial Board, *Czynniki Rzyzka*.
- 1985-1989 Editor-in-Chief, Israel Journal of Clinical Biochemistry and Laboratory Sciences.
- 1981-1993 Member, the Secretariat, Israel Society for Clinical Biochemistry (ISCB).
- 1981-1986 Member, the Secretariat, Israel Biochemical and Microbiological Union (IBMU).
- 1980-1986 Member, the Secretariat, Israel Biochemical Society (IBS).

*** Israel Defense Forces (1970-1973, final rank in the Reserve – Lieutenant Colonel)**

*** REVIEWER FOR ALL MAJOR INTERNATIONAL JOURNALS ON ATHEROSCLEROSIS.**

5. RESEARCH INTERESTS

General Goal: Studies of the Mechanisms involved in Macrophage Cholesterol accumulation and Foam Cell formation under Oxidative Stress during Atherogenesis: Role of Dietary Antioxidants and of Paraoxonases (PONs).

Specific Areas of Research:

1. Lipoproteins Oxidation and Atherosclerosis (1980 – present)

Macrophage – mediated oxidation of LDL and foam cell formation are the hallmark of early atherogenesis. We were the first to demonstrate the role of cellular oxygenases (such as NADPH oxidase) and of antioxidants (such as the glutathione system) in cell - mediated LDL oxidation and in atherosclerotic lesion development.

2. Dietary Antioxidants and Atherosclerosis (1990 – present)

We have provided evidence, for the first time, that the inhibitory effect of some flavonoid antioxidants on macrophage – mediated LDL oxidation (and on atherosclerosis development) is related to the polyphenols interaction with the lipoprotein directly, as well as to their accumulation in arterial macrophages.

3. Paraoxonases, Lipid Peroxidation and Atherosclerosis (1997 – present)

Recently, we provided evidence that HDL- associated Paraoxonase can hydrolyze oxidized lipids in oxidized lipoproteins, macrophages, and in atherosclerotic lesions. Paraoxonase thus may act as a second line of defense against oxidative stress and atherosclerosis development.

6. TEACHING EXPERIENCE

2002-present Technion Permanent (more than ten successive years) Distinguished Lecturer.

BASIC COURSES

Chairing and teaching **Basic Courses** to Medical Students.

1. Chair and lecturer: **Biochemistry** to Medical Students (Course # 274226). Every year since 1993.
2. Chair and lecturer: **Biochemistry - American Program** to Medical Students (Courses # 274126 and # 274303). Since 2006.
3. Chair: **General Biochemistry Laboratory** (Course # 274227). Every year since 1993.
4. Lecturer: **Clinical Biochemistry** to Medical Students (Course # 276310). Every year since 1993.

ELECTIVE COURSES

Chairing and teaching in **Elective Courses** to Medical and Graduate Students:

1. **Lipoproteins and Atherosclerosis** (Course # 277426). Every year since 1988.
2. **Lipids and Lipoprotein Metabolism** (Course # 068318). Every year since 1983.

* **Clinical Biochemistry – Lipids and atherosclerosis** to undergraduate students, Faculty of Life Sciences, Bar Ilan University, Ramat-Gan, Israel (1992-1999).

7. MEMBERSHIP IN PROFESSIONAL SOCIETIES

National

Israel Society for Atherosclerosis.

Israel Society for Diabetes.

Israel Society for Laboratory Medicine (previously - Clinical Biochemistry).

Israel Biochemical Society.

Israel Society for Oxygen and Free Radical Research.

International

American Society for Biochemistry and Molecular Biology (ASBMB).

Academy of Clinical Laboratory, Physicians and Scientists.

American Heart Association, Council on Arteriosclerosis.

American Association for Clinical Chemistry.

American Federation for Clinical Research.

Biochemical Society.

European Society for Clinical Investigation.

European Atherosclerosis Society.
 European Lipoprotein Club.
 International Atherosclerosis Society.
 International Society for the study of Fatty acids and Lipids (ISSFAL).
 International Society for Free Radical Research (ISFRR).
 International Society on Thrombosis and Haemostasis.

8. HONORS

2008 – George A. Miller Visiting Professor, University of Illinois at Urbana Champaign (UIUC).
 2007 – Bernice R. and Joseph Tanenbaum Chair in Preventive Medicine.
 2007 – Hershel Rich Technion Innovation Award.
 2007 – Honorary Member, Romanian Academy / Society for Cell Biology.
 2002 - Technion Permanent (ten successive years) Distinguished Lecturer Award.
 Outstanding teacher, Faculty of Medicine every year since 1993. Muriel and David Jacknow Award for Excellence in teaching-2000.
 1998 - Pfizer Lecturer Award, Clinical Research Institute of Montreal, Canada (“LDL oxidation and atherosclerosis”).
 1998 - NIH, Office of Alternative Medicine (OAM), Symposium Award (“Antioxidants, LDL oxidation and atherosclerosis”).
 1994 - Senior Investigator International Prize for Research on Oxidation of Lipoproteins: The ARCOL Prize, Pasture Institute, Lille, France (“Macrophage-mediated oxidation of LDL”).
 1993 - Server Investigator Award for Research on Antioxidants. European Society on Free Radicals Research, Valencia, Spain.
 1987 - Fogarty International Fellowship (Seattle, WA, USA. "Lipids-modified LDL").

9. STUDENTS INSTRUCTION

D.Sc. / Ph. D. Theses

1. Bianca Fuhrman: "Platelet secretory products and macrophage lipoprotein metabolism". 1988-1992.
2. Melia Paizi: "The possible role of fibronectin in plasma cell dyscrasia related problems." 1986-1990 (Co- supervisor with Prof. G. Spira).
3. Qianmei Li: "Macrophage metabolism of the fatty acids in the LDL cholesteryl ester". 1993-1995.
4. Paula Belinky: "Licorice as an inhibitor of LDL oxidation". 1994-1998.
5. Irit Maor: “Relationships between oxidation and aggregation processes in LDL derived from apolipoprotein E-deficient mice during atherogenesis”. 1995-1999.
6. Marielle Kaplan: “Proteoglycans and macrophage uptake of oxidized LDL” 1996-2000.
7. Andrea Szuchman: “Chemical markers for oxidative stress in biological systems”. 2001-2005.
8. Orit Rosenberg (Grunfeld): “Paraoxonase 1 over expression and protection against atherosclerosis” 2003-2006.

9. Maayan Sheiner (Ben-dor): "Paraoxonase 2 regulation in macrophages: signal transduction and transcription factor pathways" 2004-2007.
10. Hagai Tavori : "Paraoxonase protection against oxidative stress". 2007-2010.
11. Adi Haber: "Corrole interactions with lipoproteins and macrophages". 2007 – 2010.

M.Sc. Theses

1. Yaakov Berkovitz: "Platelet adhesion in whole blood". 1979-1981 (Co-supervisors: Profs Marmur and Brook).
2. Idit Bornstein: "Platelet adhesion". 1981-1983 (Co-supervisors: Profs Marmur and Brook).
3. Bianca Fuhrman: "The effect of chylomicrons on platelet function". 1983-1985 (Co-supervisor: Prof. Brook).
4. Nechama Segal: "Surfactants and platelet aggregation". 1984-1986 (Co-supervisors: Profs Marmur and Brook).
5. Edna Hochgraff: "The effect of lovastatin on platelet function, composition and fluidity in hypercholesterolemic patients". 1988-1990 (Co-supervisor: Prof. Cogan).
6. Irit Maor: "Platelet secretory products and macrophage cholesterol metabolism". 1990-1992.
7. Judith Oiknine: "The effect of macrophage activation on the uptake of LDL". 1991-1993.
8. Mira Rosenblat: "Macrophage oxidation of LDL". 1993-1995.
9. Limor Ben Yaish: "The effect of lycopene on macrophage cholesterol metabolism". 1995-1997.
10. Orit Grunfeld: "Paraoxonase and macrophage foam cell formation". 2000-2002.
11. Anat Katzir: "Oxidized LDL and macrophage MAP kinase signal transduction". 2000-2002 (Co-supervisor: Prof. Polack).
12. Maayan Ben-Dor: "Macrophage maturation and foam cell formation". 2002-2004.
13. Michal Efrat : "HDL phospholipids and paraoxonase 1 activities". 2006 – 2008.

Undergraduate Students

1. Nir Lubetchky - "Macrophage lipid peroxidation". 1992-1993.
2. Limor Ben Yaish - "Cell membrane lipid peroxidation in macrophages". 1994-1995.
3. Shlomi Buch - "Antioxidative properties of Licorice against LDL oxidation". 1994-1996.
4. Beha Francis - "Macrophage foam cell formation under oxidative stress". 1999-2000.
5. Ayelet Partush – " Acetyl Choline Esterase hydrolyzes lipid peroxides". 2004-2005.
6. Yasmin Chativ – "Macrophage paraoxonase 2 (PON2) regulation by the urokinase plasminogen activator (uPA) system". 2005-2006.
7. Orly Sapir – "Glucose destabilizes HDL – associated paraoxonase1 (PON1); implications to Diabetes". 2006-2007.

M.D. Theses

1. Roni Diukman: "The effect of soy protein diet on plasma lipoproteins in rabbits". 1977-1978.
2. David Ron: "HDL in the elderly". 1978-1979.
3. Ema Shilansky: "HDL in atherosclerotic patients". 1978-1979.

4. Michael Lanchet: "HDL in young males after myocardial infarction". 1979-1980.
5. Yitzchak Sarugo: "The effect of HDL on platelet function". 1980-1982.
6. Arthur Veschler: "The effect of carnitine on platelet function and plasma lipoproteins in patients with chronic renal failure on hemodialysis". 1980-1982.
7. Asher Shmulevitz: "Platelets LDL receptor". 1982-1983.
8. Eyal Herzog: "saturated fat rich diet on platelet function". 1982-1984.
9. Ron Hoffman: "Plasma lipoproteins in celiac disease". 1987-1988.
10. Eias Kasem: "Dietary olive oil and LDL oxidation in humans". 1991-1992.
11. Danniell Karter: "Macrophage-lipid peroxidation by PMA". 1994-1996.
12. Lena Koren: "Monocyte-macrophage differentiation under oxidative stress". 1999-2000.
13. Nir Shimoni : "High serum HDL and cardiovascular diseases". 2001-2002.
14. Ayelet Partush : "Oxidized LDL and macrophage foam cell formation". 2005-2006.
15. Rony Oren : "Lysophosphatidylcholine and macrophage –mediated oxidation of LDL". 2006-2007 .

Residents (Basic Science)

1. Gideon Derayfus- Carmel Hospital, Haifa: "The effect of dietary vegetarian proteins on plasma lipoproteins in rabbits". 1979-1980.
2. Ruth Baruch (Gershoni)- Rambam Hospital, Haifa: Plasma lipoprotein pattern in young children 1980-1981.
3. Jacob Baruch-Rambam Hospital, Haifa: Dyslipoproteinemia in primary biliary cirrhosis". 1980-1981.
4. Avi Viener-Rambam Hospital, Haifa: "The effect of plasma lipoproteins on platelet function in hypercholesterolemic patients". 1981-1982.
5. Giora Winterstein- Rambam Hospital, Haifa: "Prostaglandin pathway and platelet function in hypercholesterolemia". 1982-1983.
6. Nassara Chalil- Ziv Hospital, Zefat: "Plasma fatty acid after fat rich meal". 1983-1984.
7. Efrat Wolfovitz - Rambam Hospital, Haifa, "Macrophage lipid metabolism". 1984-1985.
8. Mondir Boulos - Rambam Hospital, Haifa: "The effect of plasma lipoproteins derived from hypercholesterolemic patients on macrophage cholesterol content". 1985-1986.
9. Lavi Klein-Rambam Hospital, Haifa: "Plasma lipoprotein fluidity in hypercholesterolemic patients". 1987-1988.
10. Ron Hoffman - Rambam Hospital, Haifa: "Anti oxidation properties of hypocholesterolemic drugs". 1990-1991.
11. Rafi Azugi - Ziv Hospital, Zefat: Effect of estrogen on plasma lipoprotein pattern. 1990-1991.
12. Osamah Hussein - Ziv Hospital, Zefat: "The effect of platelet secretory products on macrophage cholesterol metabolism in mouse peritoneum". 1990-1991.
13. Peter Barta - Rambam Hospital, Haifa: "Myocardial infarction and plasma lipid peroxidation". 1993-1994.
14. Yanir Kashif - Naharia Hospital, Naharia: "Xanthelasma and oxidized lipids". 1993-1994.
14. Sorina Schlesinger - Ziv Hospital, Zefat: "Fluvastatin and LDL oxidation". 1995-1996.
15. Gavriella Friedman-Ziv Hospital, Zefat: "Cholestyramine and LDL oxidation: 1995-1996.
16. Imad Sachnin: "Angiotensin II and macrophage cholesterol metabolism". 1998-1999.

17. Ayelet Raz – “Regression of atherosclerosis in apo E deficient mice by treatment with ACE inhibitors” – 1999-2000.
18. Shadi Hammood: “Effect of ACE inhibitors on oxidative stress are atherosclerosis in E⁰ mice”. 2001-2002.
19. Chitam Hussein – “Paraonase 2 in macrophages from hypercholesterolemic patients; effect of statin therapy”. 2003-2004.
20. Alex Strizevski – “Human monocyte-macrophage ACE2 expression in hypertensive patients” 2004-2005.
21. Ronnen Saltz – “Macrophage atherogenicity in diabetes” 2004-2005.
22. Orna Nitzan – “Monocyte-macrophage differentiation under oxidative stress”. 2005-2006.
23. Ido Bogner - "HDL composition affects its biological function and atherosclerosis ". 2006-2007.
25. Wasseem Rock – "HDL-association with paraonase under Diabetic oxidative stress". 2007-2008.
26. Riyad Mahameed – " Diabetes and the RAAS (rennin, angiotensin, aldosterone system)". 2008-2009.

Collaborating Senior Physicians

1. Shlomo Keidar, M.D.: “Angiotensin II, LDL oxidation and atherosclerosis”. Rambam Medical Center, Haifa, 1988 - present.
2. Tony Hayek, M.D.: The atherosclerotic apolipoprotein E-knockout mice as a model to study lipoprotein modifications in atherosclerosis”Rambam Medical Center, Haifa, 1993 - present.
3. Osamah Hussein, M.D.: “Antioxidants against LDL oxidation and atherosclerosis”. Ziv Hospital, Zefat, 1993 - present.
4. Raanan Shamir : “Intestinal paraonases”. Rambam Medical Center, Haifa, 2001-2004.
5. Alexandra Lavy, M.D.: “Lipoprotein oxidation in atherosclerotic patients”. Bnei Zion Hospital, Haifa, 1988 - 2000.
6. Yishai Levy, M.D.: “Carotenoids as antiatherogenic agents”, Rambam Medical Center, Haifa, 1988 - 2000.
7. Avishay Elis, M.D.:“The effect of lycopene on macrophage cholesterol metabolism and atherosclerosis”. Meir Medical Center, Kefar-Saba, 1996 - 2001.
8. Hanna Mandel, M.D.: “Peroxisomes and cholesterol metabolism” Rambam Medical Center, Haifa 1991-2000.
9. Reuven Bergman, M.D.: “Xanthelasma, Xanthogranulomatosis and cholesterol metabolism”. Rambam Medical Center, Haifa, 1993 - 2000.
10. Daiana Gaitini, M.D. : Intima-Media Thickness (IMT) in atherosclerotic patients: effect of dietary antioxidants”. Rambam Medical Center, Haifa, 2000-2004.
11. Mazen Elias, M.D. : “ Oxidative stress and antioxidants in cardiovascular patients”.

10. RESEARCH GRANTS

Academic Grants

- 2009-2011 **Israel – Ukraine Ministry of Science and Technology** – “Biomimetic chromatic platforms for analysis of membrane – associated oxidative stress processes and diseases diagnosis” - \$100,000 (together with Prop. Raz Jelinek, Ben Gurion University at Beer Seva).
- 2009-2011 **Rappaport Institute Research Grant** - " Paraoxonases (PONs) and cardiovascular diseases". - \$90,000
- 2009-2014 **NIH Grant** – "The oxidation hypothesis revisited: Haptoglobin genotype and diabetic atherosclerosis" (Cooperating Investigator. PI - Dr. A. Levy).
- 2007-2009 **Israel Ministry of Science and Technology** – “Natural healthy compounds in strawberries”- NIS100,000 (together with Dr Dai Nir, Volcani Institute).
- 2005-2008 **Rappaport Institute Research Grant** - " Paraoxonases (PONs), Oxidized lipids and foam cell formation". - \$60,000
- 2005-2008 **Israel Ministry of Science and Technology** – “Metabolic networks in pomegranate fruit: an analytical platform for food functionality” - \$200,000 (together with Dr. Holland D., Neve Yaar Research Center and Amir R., MIGAL Research Center).
- 2004-2007 **The Israel Science Foundation (ISF, The Israel Academy of Sciences and Humanities)** – “The search for endogenous substrates of paraoxonase” - \$90,000 (together with Dr J. Vaya., MIGAL Research Center).
- 2004-2006 **D-Cure Diabetes Research Grant** -“Paraoxonase (PON) substrates metabolic pathways under oxidative stress: studies under the diatetic environment” - \$130,000 (together with Dr J. Vaya., MIGAL Research Center).
- 2004-2006 **The Niedersachsischen Ministeriums fur Wissenschaft and Kultur** - “Regulation of urokinase plasminogen activator (uPA) expression in monocytes during their differentiation into macrophages: consequences on atherogenesis in relation to macrophage-foam cell formation and to vascular smooth muscle cells migration and proliferation”. – EU 100,000.
- 2005-2006 **Israel Ministry of Health** – “Paraoxonase in hypercholesterolemic patients” – \$20,000.
- 2004-2007 **The Israel Science Foundation (ISF, The Israel Academy of Sciences and Humanities)** – “Regulation of macrophage atherogenicity by the haptoglobin polymorphism”. - \$200,000 (Cooperating Investigator. PI - Dr. A. Levy).
- 2002-2004 **Rappaport Institute Research Grant** - " Paraoxonases, Oxidized lipids and foam cell formation". - \$75,000.
- 2001-2004 **Michigan Life Science Corridor Grant** -“Can Paraoxonase be used to treat Endotoxemia and Sepsis?” - \$1,740,000 (PI – Dr. Bert La Du Aviram’s part - \$30,000, acting as an advisor to the University of Michigan, Department of Pharmacology Research Team.).
- 2000-2002 **The Niedersachsischen Ministeriums fur Wissenschaft and Kultur** – “Role of angiotensin II in macrophage cholesterol accumulation, foam cell formation and the induction of cytokines, in the progression of atherogenesis”. – DM 200,000.
- 1998-2000 **Rappaport Institute Research Grant** - "Oxidized LDL and foam cell formation". - \$120,000.

- 1997-2000 **The Israel Science Foundation (ISF , The Israel Academy of Sciences and Humanities)** - "Coronary heart disease: genetic, environmental and behavioral determinants. - \$ 100,000 (PI - Dr. Jeremy Kark).
- 1995-1998 **The Israel Science Foundation (The Israel Academy of Sciences and Humanities)-** "Proteoglycans and macrophage uptake of oxidized LDL- \$ 150,000.
- 1995-1997 **Rappaport Institute Research Grant** - "Oxidized LDL and foam cell formation". - \$120,000.
- 1993-1995 **Israel Ministry of Health** "Macrophage lipids peroxidation " - \$ 35,000.
- 1991-1994 **Rappaport Institute Research Grant-** "Oxidized LDL and foam cell formation". - \$ 120,000.
- 1991-1994 **German (BMFT) - Israel Binational Grant.** "Platelet secretory products and macrophage cholesterol metabolism". - DM 250,000 (Co-PI with Dr. J.G. Brook).
- 1989-1991 **Israel Ministry of Health** - "LDL-platelet interaction" - \$ 25,000.
- 1987-1988 **Fogarty International Fellowship** (Seattle, WA, USA). "Lipids - modified LDL". - \$ 40,000.
- 1984-1987 **GSF, German (BMFT) - Israel Binational Grant.** "Platelet-modified LDL". - DM 200,000 (Co-PI with Dr. J.G. Brook).
- 1983-1985 **Israel Ministry of Health** "Lipoprotein-platelet interactions" - \$ 25,000.
- 1984 **Norway - Israel Fellowship.** "Prostaglandin - lipoprotein interactions".
- 1983 **Italian - Israel Fellowship.** "Platelet prostaglandins and lipoproteins".
- 1981-1983 **Israel Ministry of Health** "Triglyceride and platelet function" - \$20,000.
- 1978-1980 **Israel Ministry of Health** "Lipoprotein abnormality in atherosclerosis" - \$20,000.

Commercial Grants

- 1998-2009 **Roll International Ltd.** – "Nutritional antioxidants, LDL oxidation and atherosclerosis" - \$ 350,000.
- 2007-2009 **ARDOM** (Arava Deromit) R&D - "Marula fruit anti –atherogenesis" - \$35,000.
- 2008 -2009 **Diklayim** (Israeli Dates growers) – "Dates cardiovascular protection" - \$50,000.
- 2007-2008 **Ortho-Clinical Diagnostics (OCDUS) / Johnson & Johnson** – " Development of new serum paraoxonase (PON1) tests for atherosclerosis" - \$156,000 (CO-PI with Dr D. Tawfik).
- 2006-2007 **"Your Energy Systems" / Gerzberg Family Fund** – "Liposomal Glutathione and atherosclerosis"- \$70,000.
- 2006-2007 **Goya Holding S.A. (Genius s.r.l.)** – " Polyphenols enriched olive oil"- \$ 15,000.
- 2001-2005 **Roche Diagnostics GmbH** – "Serum paraoxonase and atherosclerosis" – DM 300,000.
- 2001-2003 **Pharmacia**– "Aldosterone, oxidative stress and atherosclerosis" - \$ 75,000.
- 2000- 2004 **Abramovitz Family Fund** – Nutritional antioxidants and atherosclerosis - \$100,000.
- 1995-2001 **Lycored (Makhteshim)**- "Lycopene and LDL oxidation." \$ 180,000.
- 1998-1999 **Transphyto Ltd.** - "Dietary antioxidants and atherosclerosis" – FF 120,000.
- 1997-1998 **Dalidar Pharma Ltd.** "Ginger-derived polyphenols and atherosclerosis"- \$ 50,000.
- 1995-1997 **Sandoz Pharma AG.** - "HMGCoA reductase inhibitors". - \$ 50,000.
- 1994-1997 **Fertilizers and Chemicals** - "Licorice as an antioxidant". - \$100,000.
- 1991-1993 **Bristol-Myers Squibb Grant.** "Hypocholesterolemic therapy and lipoprotein oxidation". - \$50,000 (Co-PI with Dr. J.G. Brook).

1990– 1992 **Merck, Sharp and Dohme Grant.** "Lipid-modified LDL and hypocholesterolemic drugs". - \$ 80,000 (Co-PI with Dr. J.G. Brook).

Technion Research grants

1994-present Mechanisms of lipoproteins atherogenicity- \$2500-\$5000/year.

11. CONFERENCES - International (as Invited Speaker)

2010

Aviram M. "The paraoxonases (PONs)". Bert La Du Memorial Lecture. The 4th International Conference on Paraoxonases. September 7-10, **Reus (Catalunya), Spain.**

2009-

Aviram M. " Paraoxonases (PONs) protection against atherosclerosis development". 8th Touro University annual research day , March 13. **Valejo, CA, USA.**

Aviram M. " Dietary antioxidants and paraoxonases (PONs) protection against atherosclerosis development". April 16, **Nashville, Vanderbilt University , TN, USA.**

Aviram M. "Paraoxonase protection against lipoprotein – mediated macrophage foam cell formation". Lipid Disorders; the Way Ahead. April 21-22, **Manchester, UK.**

Aviram M. " Pomegranate cardio protection – the scientific background". USA Federal Trade Commission (FTC). June 2. **Washington DC, USA.**

Aviram M. "HDL-associated paraoxonase 1 (PON1) hydrolyzing activity protects against oxidative stress and macrophage foam cell formation". The XV International symposium on atherosclerosis. June 14-18 , **Boston, MA, USA.**

Aviram M. "HDL – associated paraoxonase 1 (PON1) regulation by oxidative stress and by polyphenolic antioxidants". Frontiers in cardiovascular science, October 15-18, **Eilat, Israel.**

Aviram M. "Mechanisms of action of dietary polyphenols: the cardiovascular example". Malta Polyphenols 2009: bridging bioefficacy to innovation & applications, October 29, **Malta.**

Aviram M. "Pomegranate antioxidant polyphenols in human health". Pomegranate extracts: clinical & nutraceutical applications, October 30, **Malta.**

Aviram M. “Oxidized cholesterol and antioxidants; the paraoxonase1 connection”. S. Neeman Institute and BioNorth initiative on Novel research on cholesterol and cardiovascular diseases, November 25, **Haifa, Israel** (Speaker and Organizer).

2008-

Aviram M. Organizer, Technion Landmarks in Science Nobel Laureates Symposium: Sixty years of Science in the State of Israel. May 19, **Haifa, Israel.**

Aviram M. "Paraoxonases in Diabetes". The 3rd International Conference on Paraoxonases. September 7-10, **Los Angeles, CA, USA.**

2007-

Aviram M. “Pomegranate protects against cardiovascular diseases”. POM Wonderful Research Summit. February 7, **Los Angeles, U.S.A.**

Aviram M. “Dietary antioxidants and paraoxonases against macrophage foam cell formation and atherosclerosis”. From Basic Science to therapeutic applications. June 7-10. **Buckarest, Romania.**

Aviram M. “Oxidative stress markers”, European Atherosclerosis Society (EAS), 76th Annual EAS Congress, June 10-13, 2007, **Helsinki, Finland.**

Aviram M. "Oxidative stress induced atherosclerosis: protective role for antioxidants and for paraoxonases". 3rd International symposium of the collaborative research center (SFB) and 12th NO Forum of the German speaking countries. October 4-6.2007, **Mainz, Germany.**

Aviram M. "Molecular mechanisms for the anti - atherogenicity of pomegranate anti – oxidant polyphenols". Frontiers in cardiovascular science, October 18-21, **Eilat, Israel.**

Aviram M. "Natural antioxidants against atherosclerosis development". The 4th International conference of Nutraceuticals (ICMAN 4), October 21-24. **Tel-Aviv, Israel.**

2006-

Aviram M. “Wine flavonoids, LDL cholesterol oxidation and atherosclerosis” The Universe of Win and Health, March 9-12, **Firenze, Italy.**

Aviram M. “Paraoxonase 1 (PON1) attenuates, macrophage foam cells formation”. Paraoxonases and oxidative stress. University of Mainz, March 13, **Mainz, Germany.**

Aviram M. “Dietary antioxidants protects against cardiovascular diseases: the pomegranate example” International Congress on Thrombosis, May 14-16, **Tel Aviv, Israel.**

Aviram M. "How could the Technion recruite excellent graduate students?". Special meeting of the Technion Senate. May 28 ,**Haifa, Israel.** Organizer and moderator.

Aviram M. “Atherosclerosis, diabetes and its complications” June 7-10, **Iasi, Romania.**

Aviram M. “HDL-associated paraoxonase 1 (PON1) attenuates lipoprotein oxidation, macrophage foam cells formation and atherosclerosis development” International Symposium on Atherosclerosis, June 18-22, **Rome, Italy.**

Aviram M. “Paraoxonase and macrophage foam cell formation” Second International Conference on Paraoxonases, September 7-10, **Debrecen, Hungary.**

Aviram M. "Pomegranate and Cardiovascular health". 6th International Phytochemical Conference Themes and Topics Phytochemicals: Aging and Health". October 16-17, **Buena Park, CA, USA.**

Aviram M. “Antioxidant properties of olive oil against LDL oxidation and atherosclerosis development”. 28th ESPEN Congress Clinical Nutrition and Metabolism. October 19-22, **Istanbul, Turkey.**

Aviram M. “Nutritional antioxidants protect against atherosclerosis: role for HDL-associated paraoxonase” Fourth international conference on mechanisms of action of nutraceuticals (ICMAN 4), October 29- November 1, **Tel –Aviv, Israel.**

Aviram M. “Dietary antioxidants and paraoxonase attenuate macrophage foam cell formation and atherosclerosis development” Nutrition, Lipids and Atherosclerosis. November 17-18, **Madrid, Spain.**

2005-

Aviram M. “Dietary tomato’s lycopene reduces heart diseases” International Conference on Antioxidant and Lycopene, March 16, **London.**

Aviram M. “Macrophage NADPH oxidase and foam cell formation: Anti-atherosclerotic role for dietary antioxidants and for paraoxonase”, Workshop on “new insights in mechanisms of vascular diseases”, May 20-21, **Baveno, Maggiore Lake, Italy.**

Aviram M. “Oxidative stress and cardiovascular diseases: protective role of dietary antioxidants”. Visual Function – Insights from the revolution in biology at the molecular level”. June 14-16, **Tel Aviv, Israel.**

Aviram M. and Fuhrman B. “Pomegranate and CVD: pomegranate juice polyphenolic antioxidants protect against oxidative stress and atherosclerosis development”, Symposium on Human Health effect of Fruits and Vegetables, August 18-20, **Quebec City, Canada.**

2004-

Aviram M. “Paraoxonases protective mechanisms against oxidative stress, macrophage foam cell formation and atherosclerosis development”. The 74th EAS Congress. April 17-20, **Seville, Spain** (Speaker and Organizer).

Aviram M. “Paraoxonase (PON1) protects against lipids peroxidation and attenuates atherosclerosis development”. The First International Meeting on Paraoxonases – Basic and Clinical Directions of Current Research. April 23-24, **Ann Arbor, MI, USA** (Speaker and Organizer).

Aviram M. “HDL-associated paraoxonase1 (PON1) antioxidant and anti-inflammatory properties: PON1 protection against macrophage foam cell formation and atherosclerosis development”. September 2-6, HDL Workshop. **Heraklion, Crete, Greece.**

Aviram M. “Paraoxonases and macrophage foam cells formation”. Frontiers in Cardiovascular Science, October 14-17, **Eilat, Israel.**

Aviram M. “Paraoxonases and diabetes”. The Russell Berrie 1st international Diabetes Symposium. October 17-19, **Jerusalem, Israel.**

Aviram M. “Dietary antioxidants and paraoxonases: protection against cardiovascular diseases”. International Conference on Mechanisms of action of Nutraceuticals (ICMAN). November 12-14, **Waynesville, Haywood County, Western North Carolina, U.S.A.** (Speaker and Organizer).

2003-

Aviram M. “Mediterranean dietary antioxidants inhibit macrophage foam cell formation”. September 20-23, **Cannes, France** (Speaker and Organizer).

Aviram M. “Molecular pharmacology of herbal medicine and botanical products in the treatment of vascular disease: the pomegranate example”. Traditional herb medicines in Atherosclerosis Symposium. September 24-27, **Taipei, Taiwan.**

Aviram M. “Flavonoids-rich nutrients with potent antioxidant activity prevent atherosclerosis development”. The XIIIth International Symposium on Atherosclerosis. September 28- October 2, **Kyoto, Japan** (Speaker and Organizer).

Aviram M. “Paraoxonases protects against oxidative stress and atherosclerosis progression at the humeral and cellular levels”. Frontiers in Cardiovascular Science, October 23-26, **Eilat** (Speaker and Organizer).

2002-

Aviram M. “Oxysterols induce macrophage NADPH oxidase activation”. XIth Biennial Meeting of the Society for Free Radical Research International: Role of free radicals, oxidants and

antioxidants, in molecular and cell biology and life processes: New developments and techniques". July 16-20, **Paris, France**.

Aviram M. 1st Plenary Meeting, EC Concerted Action on Process for the Assessment of Scientific Support for Claims on Foods – PASSCLAIM. September 4-6, **Berlin, Germany**(Advisory Board member).

Aviram M. "Paraoxonase and Atherosclerosis". XIII Lipid-Meeting, Leipzig", September 30th – October 2nd, **Leipzig, Germany**.

Aviram M. "Paraoxonase protects against oxidative stress and atherosclerosis progression". Frontiers in Cardiovascular Science, October 3-6 , **Eilat** (Speaker and Organizer).

Aviram M. "Oxidative stress, macrophage foam cell formation and Atherosclerosis". European Community Center of Excellence Workshop on: "Cardiovascular dysfunctions in hyperlipidemia and diabetes". October 9-13, **Buckarest, Romania**.

Aviram M. "Wine flavonoid antioxidant against LDL oxidation". Vinsalude 2002 Chile: Wine and Health International Congress, October 20-23, **Santiago, Chile** (Speaker and Organizer).

Aviram M. "Macrophage, Foam Cell formation and Atherosclerosis under Oxidative Stress: studies in the apolipoprotein E deficient mice". Biocenter Oulu Graduate School Advance Course: From cells to tissues: signaling and mechanisms, December 3, **Oulu, Finland**.

2001-

Aviram M. "New Avenues in Atherosclerosis Research: Genomics and New Therapeutical Perspectives". March 14-15, **Montreal, Canada**.

Aviram M. "Wine polyphenols, LDL oxidation and atherosclerosis", "Conference on Wine and Alcohol in Health and Disease". April 26-29, **Palo Alto, California, USA**.

Aviram M. "Dietary antioxidants and cardiovascular diseases" International Conference on Mechanisms of action of Nutraceuticals (ICMAN). October 10-14, **Dubrovnik, Croatia**.

2000-

Aviram M. "Anti-atherogenicity of the licorice derived isoflavane glabiridin: inhibitory role in LDL oxidation and macrophage foam cell formation". The Oxygen Club of California, 2000 world Congress, March 1-4, **Santa Barbara, California, USA**.

Aviram M. "Role of angiotensin II in lipoprotein oxidation and cholesterol metabolism in the vascular wall". The 15th American Society of Hypertension (ASH) meeting. May 15-19, **New York, NY, USA**.

Aviram M. “Polyphenols inhibit LDL Oxidation and Atherosclerosis”. XXth International Conference on Polyphenols, September 11-15, **Freising, Germany.**

Aviram M. “Antioxidant activity of statins as well as of pomegranate juice”, PTBNM Polish society for atherosclerosis research MEM, October, 23-26 in **Krag Castle, Koszalin, Poland.**

1999-

Aviram M. “Paraoxonase, LDL Oxidation and Macrophage Foam Cell Formation”. The 2nd Rappaport – Mayo Symposium on vascular biology: therapeutic horizons in cardiovascular disease. May 23-27, **Rochester, MN, USA.**

Aviram M. “Review of Human Studies related to vascular function”. ILSI Europe Workshop on Markers of Oxidative Damage and Antioxidant protection. June, 28-30, **Prague, Czech Republic.**

Aviram M. “Functional Ingredients in Wine”. 4th Karlsruhe Nutrition Symposium on Vegetables and Fruit for better Nutrition and Health: Scientific evidence and Practical Experiences. October, 10-12, **Karlsruhe, Germany.**

Aviram M. “Oxidized LDL and Atherosclerosis: Role of Antioxidants and Paraoxonase” 10th International Dresden Symposium on Lipoproteins and Atherosclerosis. December, 9-11, **Dresden, Germany.**

1998-

Aviram M. “LDL oxidation in athpatients and the effect of drug therapy”. The Pfizer Lecture, February 9, **Montreal, Canada.**

Aviram M. “LDL oxidation and atherosclerosis: antiatherogenicity of antioxidants”. The first regional meeting on medical science-The roles of free radicals in health and disease” March 22-27, **Jerusalem-Amman, Israel-Jordan (Speaker and Organizer).**

Aviram M. “Anti-atherogenicity of antioxidants against LDL oxidation” The Second International Conference on Natural Antioxidants and Anticarcinogens in Nutrition, Health and Disease (NAHD). June 24-27, **Helsinki, Finland.**

Aviram M. “Tomato’s lycopene and β -carotene inhibit LDL oxidation. Nutracon, July 20-22, **San Antonio, Texas.**

Aviram M. “Paraoxonase reduces lipoprotein oxidation: a possible role for its per-like activity”. The European Atherosclerosis Society, 70 EAS Meeting, September 6-9, **Geneva, Switzerland.**

Aviram M. “Human serum paraoxonase, lipoprotein oxidation and atherosclerosis”. The 5th International Union of Biochemistry and Molecular Biology (IUBMB) Conference on the Biochemistry of Health and Diseases. October, 18-22, **Jerusalem, Israel.**

Aviram M. “Dietary antioxidants against LDL oxidation in cardiovascular diseases”. American College for advancement in Medicine, November 20-22, **Phoenix, Arizona.**

1997-

Aviram M. “Macrophage-mediated oxidation of LDL” - The first joint meeting of the Rappaport Institute and the University of Dundee. January 26-28, **Dundee, Scotland, U.K.**

Aviram M. “LDL oxidation by macrophages”. The first international workshop on molecular biology of mononuclear phagocyte differentiation and activation. **Advisory Board Expert.** May 2-3, **Regensburg, Germany.**

Aviram M. “Inhibition of LDL oxidation by macrophage - and by LDL - associated antioxidants” - The 68th meeting of the European Atherosclerosis Society (EAS): Molecular Cell Biology and Atherosclerosis. May 7-10, **Brugge, Belgium.**

Aviram M. “Antiatherogenicity of statin therapy in hypercholesterolemic patients: effects on platelet activation and on LDL oxidation”. The 29th annual meeting of Japan Atherosclerosis Society (JAS). June 5-6, **Tokyo, Japan.**

Aviram M. “Dietary antioxidants and LDL oxidation”. The 2nd world conference of the international society for molecular nutrition and therapy. August 2-4, **Winnipeg, Canada.**

Aviram M. “Lipoprotein oxidation and atherosclerosis”- **Chairman of the workshop.** 11th International Symposium on Atherosclerosis. October 5-9, **Paris, France.**

Aviram M. “Macrophage -mediated oxidation of LDL and atherosclerosis”. The First Rappaport-Mayo Symposium on Vascular Biology. December 1, **Haifa, Israel.**

1996-

Aviram M. “Role of oxidized LDL in the development of atherosclerosis”. The Menarini Series on Cardiovascular Diseases: Advances in Cardiovascular Pathology. January 26-27, **Florence, Italy.**

Aviram M. “Antioxidants against LDL oxidation and Atherosclerosis”. March 1st, **Naarden, The Netherlands.**

Aviram M. “Lycopene and Atherosclerosis”. BioMed, Inaugural Lecture Program, March 2nd, **Birmingham, U.K.**

Aviram M. “Interrelationship among platelet activation, LDL oxidation and foam cell formation in hypercholesterolemic patients: antiatherogenic effects of statin therapy”. Asian-Pacific Congress on Vascular Diseases. March 11-15, **Singapore.**

Aviram M. “Macrophage relevance in the atherome plaque formation. Effects of pravastatin in the inhibition of cellular cholesterol synthesis and increase of LDL receptor activity in macrophages”. International Symposium on Coronary Prevention and Lipid Control: Physiopathology basis and new Therapeutic Consensus. Laboratories Dr. Estevez. S.A., April 19-20, **Barcelona, Spain.**

Aviram M. “Oxidative modification of LDL and Atherosclerosis”. V Simposio International Sorbe, Alimentation, Lipidos Y Atherosclerosis. May 30- June 1, **Madrid, Spain.**

Aviram M. “Macrophage-mediated oxidation of LDL depends on the balance between cellular oxygenases and antioxidants”. 66th Congress of the European Atherosclerosis Society, July 13-17, **Florence, Italy.**

Aviram M. “Interrelationship among platelet activation, LDL oxidation and foam cell formation in hypercholesterolemic patients: antiatherogenic effects of statin therapy” 66th Congress of the European Atherosclerosis Society, July 13-17, **Florence, Italy.**

Aviram M. “LDL enrichment with tomato’s lycopene increases its resistance to oxidation in the atherosclerotic, apolipoprotein E deficient transgenic mice” 11th International symposium on Carotenoids. August 18-23, **Leiden, The Netherlands.**

Aviram M. “Macrophage-mediated oxidation of LDL: role of cellular-and lipoprotein-associated antioxidants”. 2nd International Conference on Lipoprotein Oxidation and Atherosclerosis: Biological and Clinical Aspects. September, 12-14, **Pavia, Italy.**

Aviram M. “Inhibition of LDL oxidation by macrophage-and LDL-associated antioxidants”. **Chairman of the Symposium.** International Symposium on vitamins and antiproliferative agents in prevention of atherosclerosis. The 4th Congress of the Polish Society for Atherosclerosis Research. October 3-6, **Zokopane, Poland.**

Aviram M. “Red wine quercetin inhibits LDL oxidation and aggregation in the atherosclerotic, apolipoprotein E deficient, transgenic mice”. The First Workshop on Wine and Human Health. October 9-11, **Udine, Italy.**

Aviram M. “Macrophage proteoglycans contribute to the binding and uptake of oxidized low density lipoprotein (Ox-LDL). The 69th Scientific Sessions, American Heart Association (AHA), November 10-13, **New Orleans, Louisiana, U.S.A.**

1995-

Aviram M. “Macrophage uptake of oxidized LDL inhibits lysosomal sphingomyelinase, thus causing the accumulation of unesterified cholesterol”. 5th Rappaport Symposium: Modified Lipoproteins, Antioxidants and Atherosclerosis. **Chairman of the Symposium.** May, 8-12, **Shavei Zion, Israel.**

Aviram M. "Oxidative stress affects LDL-platelet interactions and induce foam cell formation". XVth Congress of the International Society on Thrombosis and Haemostasis. June 11-16, Jerusalem, **Israel**.

Aviram M. "Platelet activation, LDL oxidation and foam cell formation". 1st International Meeting on Interventional Cardiology. June 18-23, **Jerusalem, Israel**.

Aviram M. "Platelets and macrophage cholesterol accumulation". 11th IFCC European Congress of Clinical Chemistry. July 2-7, **Tampere, Finland**.

Aviram M. "Oxidized LDL and macrophage accumulation of unesterified cholesterol". Third Scientific Meeting of the Polish Society for Atherosclerosis Research. October 5-8, 1995, **Cracow, Poland**.

Aviram M. "Dietary Antioxidants against LDL oxidation and atherosclerosis". Annual Meeting of the Indian Society for Atherosclerosis Research. December 8-10. **New Delhi, India**.

Aviram M. "Inhibition of LDL oxidation by carotenoids: a comparative study of lycopene and β -carotene". International Conference of Food Factors. December, 10-15. **Hamamatsu, Japan**.

1994-

Aviram M. "Macrophage-mediated modification of LDL and atherosclerosis". IV International Symposium on Lipids and Atherosclerosis. May 5-7. **Madrid, Spain**.

Aviram M. "Oxidized LDL and Atherosclerosis". Senior Investigator Arcol Prize laureate. Hundred years celebration to Pasteur Institute. June 2-4. **Lille, France**.

Aviram M. "LDL lipid modifications increases its Atherogenicity". Second Congress of the Polish Society for Atherosclerosis Research. June 4-7. **Szczecin, Poland**.

Aviram M. "phospholipase-modified LDL and Atherogenesis". 8th International Dresden Lipid Symposium. June 10-12. **Dresden, Germany**.

Aviram M. "Macrophage-mediated Oxidation of LDL and Atherosclerosis". Society for Free Radical Research. September 16-18. **Pavia, Italy**.

1993-

Aviram M. "Dietary olive oil decrease LDL atherogenicity. The VII Creteil Symposium on Nutrition, Lipids and Lipoproteins". February 12. **Paris, France**.

Aviram M. "Beyond cholesterol: Modification of lipoproteins and increased atherogenicity". International symposium on Atherosclerosis, Inflammation and Thrombosis". March 21-24, **Florence, Italy.**

Aviram M. and Rosenblat M. "Macrophage-mediated oxidamodification of LDL". Joint Meeting of the German and Societies for Cell Biology (DGX and NVVC), March 28-31. **Munster, Germany.**

Aviram M. "LDL lipids modifications and increased atherogenicity". 62nd European atherosclerosis Society. September 5-9. **Jerusalem, Israel.**

Aviram M. "Antioxidant mediated inhibition of LDL-modifications reduces its atherogenicity". International SFRR symposium on Antioxidants, Inflammation, Cardiovascular and Ophthalmic disease. Server Award. September 30 - October 2. **Valencia, Spain.**

1992-

Aviram M. "Serotonin increased macrophage uptake of oxidized low density lipoprotein". XI International Symposium on Drugs affecting Lipid Metabolism, May 13-16. **Florence, Italy.**

Aviram M. "Increased susceptibility to activation and increased uptake of low density lipoprotein by cholesloaded macrophages". 59 European Atherosclerosis Society Congress. May 17-21. **Nice, France.**

Aviram M. "Lipids and platelet function in the development of atherosclerosis in diabetes". The Second International Symposium on Diabetes and Atherosclerosis, September 5-7. **Carlsbad, Czechoslovakia.**

Aviram M. "Macrophage-mediated LDL oxidation required LDL binding to the LDL receptor". 33rd International conference on the Biochemistry of Lipids (ICBL). September 7-10. **Lyon, France.**

Aviram M. "Phospholipase D-modified low-density lipoprotein is taken up by macrophages at an increased rate: A possible role for phosphatidic acid". 65th Scientific Sessions, American Heart Association (AHA), November 16-19. **New Orleans, LA, U.S.A.**

1991-

Aviram M. "Platelet mediated cholesterol accumulation in macrophages". 9th International Symposium on Atherosclerosis. October 6-11. **Chicago, (Rosemont) IL, U.S.A.**

1990-

Aviram M. "Platelet enhancement of macrophage cholesterol accumulation: a novel mechanism for atherogenesis". 2nd Mediterranean Congress of Angiology. September 16-22.

Antalya, Turkey.

Aviram M. "Platelet enhancement of macrophage cholesterol accumulation: A novel mechanism for atherogenesis". European Lipoprotein Club Meeting. September 17-20.

Tutzing, Germany.

Aviram M. "Platelet enhancement of macrophage cholesterol accumulation: A novel mechanism for atherogenesis". 63rd Scientific Sessions, American Heart Association.

November 12, 1990, **Dallas, TX, U.S.A.**

1989-

Aviram M. "Lipase modified LDL and macrophage cholesterol accumulation". International Meeting on atherosclerosis (EAS). April 20-22. **Wien, Austria.**

Aviram M. "Macrophage uptake of oxidized LDL is increased by platelet secretory products". European Lipoprotein Meeting September 11-14. **Tutzing, Germany.**

Aviram M. "Lovastatin inhibits LDL oxidation". International symposium on drugs affecting lipid metabolism. November 8-11. **Houston, TX, U.S.A.**

Aviram M. "Macrophage uptake of oxidized LDL is increased by platelet secretory products". 62nd Scientific Sessions of the American Heart Association. November 13-16. **New Orleans, LA, U.S.A.**

1988-

Aviram M. "Lipase-modified LDL results in cholesterol accumulation in macrophages". American Federation for Clinical Research (AFCR), Western Section. February 16-19. **Carmel, CA, U.S.A.**

Aviram M. "Low density lipoprotein triglyceride content determines its interaction with cells". 8th International Symposium on Atherosclerosis. October 9-13. **Rome, Italy.**

Aviram M. "Triglyceride content of LDL affects the interaction of apo B with cells". 61st Scientific Sessions, American Heart Association, November. **Washington, D.C., U.S.A.**

1987-

Aviram M. "Intralipid infusion abolishes the ability of human serum to cholesterol load cultured macrophages". 60th Scientific Sessions, American Heart Association. November 16-19. **Anaheim, CA, U.S.A.**

1985-

Aviram M. "Antithrombotic effect of plasma chylomicrons on endothelial cells: differences between dietary cream and cod liver oil". Seventh International Symposium on Atherosclerosis. October 6-10. **Melbourne, Australia.**

1984-

Aviram M. "Chylomicron atherogenicity: Plasma chylomicrons decrease platelet function". Seventh Annual Conference on Lipoproteins. The European Lipoprotein Club. September 10-13. **Tutzing, Germany.**

1980-

Aviram M. "Low-density lipoprotein receptors on human platelets". American Federation for Clinical Research (AFCR). February 10-15. **Washington D.C. U.S.A.**

PUBLICATIONS

Theses

1. M.Sc. thesis: "Energy requirement for the intracellular breakdown of ribonucleic acid".
2. D.Sc. thesis: "Turnover of tyrosine-aminotransferase in hepatoma tissue culture cells".

Refereed Papers in Professional Journals

1. Tal M., **M. Aviram**, A. Kanarek, and A. Weiss. Polyuridylic acid binding and translating by Escherichia coli ribosomes: stimulation by protein I, inhibition by aurointricarboxylic acid. *Biochim Biophys Acta* **281**: 381-392 (1972).
2. **Aviram M.**, and A. Hershko. Influence of ATP depletion on the degradation of rapidly labeled RNA in cultured hepatoma cells. *Biochem Biophys Res Commun* **65**: 1303-1310 (1975).
3. **Aviram M.**, and A. Hershko. Interconversion of multiple forms of tyrosine aminotransferase in vitro and in vivo in cultured hepatoma cells. *Biochim Biophys Acta* **498**: 83-90 (1977).
4. Rapoport J., **M. Aviram**, C. Chaimovitz, and J.G. Brook. Defective high-density lipoprotein composition in patients on chronic hemodialysis. A possible mechanism for accelerated atherosclerosis. *N Engl J Med* **299**: 1326-1329 (1978).
5. Brook J.G., A. Lavy, **M. Aviram**, and O. Zinder. The concentration of high density lipoprotein in patients with type IV hyperlipoproteinemia and the effect of clofibrate. *Atherosclerosis* **36**: 461-469 (1980).
6. **Aviram M.**, Brook J.G., Lees A.M., and Lees R. S. Low density lipoprotein binding to human platelets: role of charge and of specific amino acids. *Biochem Biophys Res Commun* **99**: 308-318 (1981).
7. Brook J.G., **M. Aviram**, R. Luboshitzky and D. Barzilai. High density lipoprotein and arteriosclerosis. Different patterns in primary hypothyroidism and type IIa hyperlipoproteinemia. *Isr J Med Sci* **17**: 318-322 (1981).
8. **Aviram M.**, and J.G. Brook. The effect of human plasma on platelet function in familial hypercholesterolemia. *Thromb Res* **26**: 101-109 (1982).

9. Brook J.G., **M. Aviram**, A. Viener, E. Shilansky, and W. Markiewicz. High-density lipoprotein subfractions in normolipidemic patients with coronary atherosclerosis. *Circulation* **66**: 923-926 (1982).
10. **Aviram M.**, R. Luboshitzky, and J.G. Brook. Lipid and lipoprotein pattern in thyroid dysfunction and the effect of therapy. *Clin Biochem* **15**: 62-66 (1982).
11. **Aviram M.**, Z. Blumenfeld, J.G. Brook, A. Levy and J. Brandes. High-density lipoprotein and its subfractions in cord blood. *Singapore J Obstet Gynecol* **13**: 107-114 (1982).
12. **Aviram M.**, J.G. Brook, S. Mokady, R. Diukman, B. Fogel and U. Cogan. Changes in rabbits' plasma lipoprotein pattern induced by substituting soybean protein for dietary animal protein. *Nutr Rep Intern* **26**: 569-579 (1982).
13. Brook J.G., **M. Aviram**, M. Oettinger and M. Sharf. The effect of oestrogen implants on high density lipoproteins and its subfractions in women in their pre-mature menopause. *Maturitas* **4**: 257- 265 (1982).
14. Ron D., I. Oren, **M. Aviram**, O.S.Better, and J.G. Brook. Accumulation of lipoprotein remnants in patients with chronic renal failure. *Atherosclerosis* **46**: 67-75 (1983).
15. **Aviram M.**, and J.G. Brook. Platelet interaction with high and low density lipoproteins. *Atherosclerosis* **46**: 259-268 (1983).
16. Brook J.G., G. Winterstein, and **M. Aviram**. Platelet function and lipoprotein levels after plasma-exchange in patients with familial hypercholesterolaemia. *Clin Sci* **64**: 637-642 (1983).
17. **Aviram M.** Plasma lipoprotein separation by discontinuous density gradient ultracentrifugation in hyperlipoproteinemic patients. *Biochem Med* **30**:111-118 (1983).
18. Blumenfeld Z., **M. Aviram**, J.G. Brook, and J.M. Brandes. Changes in lipoproteins and subfractions following oophorectomy and oestrogen replacement in peri-menopausal women. *Maturitas* **5**:77-84 (1983).
19. **Aviram M.**, and J.G. Brook. The effect of blood constituents on platelet function: role of blood cells and plasma lipoproteins. *Artery* **11**: 297-305 (1983).
20. Ron D., **M. Aviram**, and J.G. Brook. High density lipoprotein in octogenarians. *Biochem Med* **30**:253-260 (1983).
21. Markel A., J.G. Brook, Y. Levy, **M. Aviram**, and M.B.H. Youdim. Increased platelet adhesion and aggregation in hypertensive patients: effect of atenolol. *Br J Clin Pharmacol* **16**:663-668 (1983).

22. **Aviram M.**, and J.G. Brook. Characterization of the effect of plasma lipoproteins on platelet function in vitro. *Haemostasis* **13**:344-350 (1983).
23. Mokady S., U.Cogan, G. Dreifus, **M. Aviram** and J.G. Brook. Plasma lipids and lipoproteins in normo- and hyperlipidemic rabbits fed plant protein diets. *Nutr Res* **4**:897-902 (1984).
24. Baruch Y., J.G. Brook, S. Eidelman, and **M. Aviram**. Increased concentration of high density lipoprotein in plasma and decreased platelet aggregation in primary biliary cirrhosis. *Atherosclerosis* **53**:151-162 (1984).
25. Viener A., J.G. Brook, and **M. Aviram**. Abnormal plasma lipoprotein composition in hypercholesterolaemic patients induces platelet activation. *Eur J Clin Invest* **14**: 207-213 (1984).
26. Shmulewitz A., J.G. Brook, and **M. Aviram**. Native and modified low-density-lipoprotein interaction with human platelets in normal and homozygous familial-hypercholesterolaemic subjects. *Biochem J* **224**: 13-20 (1984).
27. **Aviram M.**, and J.G. Brook. Selective release from platelet granules induced by plasma lipoproteins. *Biochem Med* **32**: 30-33 (1984).
28. Levy Y., **M. Aviram**, G. Spira, I. Tatarsky, J.G. Brook, and A. Carter. Plasma cholesterol concentration and extra lipid band in monoclonal gammopathies. *Postgrad Med J* **60**:449-453 (1984).
29. Haim S., J.G. Brook, A. Gilhar, R. Friedman-Birnbaum, A. Markel, **M. Aviram**, A. Marmur, and M.B.H. Youdim. Platelet function in Behçet's disease. *J Dermatol* **11**:117-120 (1984).
30. Weschler A., **M. Aviram**, M. Levin, O.S. Better, and J.G. Brook. High dose of L-carnitine increases platelet aggregation and plasma triglyceride levels in uremic patients on hemodialysis. *Nephron* **38**: 120-124 (1984).
31. Berkovitch Y., A. Marmur, J.G. Brook, and **M. Aviram**. Platelet adhesion determination in whole blood using a simple stagnation flow method. *Ann Biomed Eng* **12**:335-346 (1984).
32. **Aviram M.**, B. Fuhrman, and J.G. Brook. Chylomicrons from patients with type V hyperlipoproteinemia inhibit platelet function. *Atherosclerosis* **56**: 157-167 (1985).
33. **Aviram M.**, G. Winterstein, and J.G. Brook. Differential effect of platelet inhibitors in normal and in hypercholesterolaemic subjects. *Br J Clin Pharmacol* **19**: 715-719 (1985).
34. **Aviram M.**, R.J. Deckelbaum, and J.G. Brook. Platelet function in a case with abetalipoproteinemia. *Atherosclerosis* **57**:313-323 (1985).

35. Markel A., J.G. Brook, and **M. Aviram**. Increased plasma triglycerides, cholesterol and apolipoprotein E during prolonged fasting in normal subjects. *Postgrad Med J* **61**:395-400 (1985).
36. Marmur A., E. Braunstein, J.G. Brook, and **M. Aviram**. Sedimentation and adhesion of blood platelets under centrifugal force. *J Colloid Interface Sci* **104**: 390-397 (1985).
37. **Aviram M.**, Y. Schechter, and J.G. Brook. Chylomicron-like particles in severe hypertriglyceridemia. *Lipids* **20**: 211-215 (1985).
38. **Aviram M.**, C.R. Sirtori, S. Colli, P. Maderna, G. Morazzoni, and E. Tremoli. Plasma lipoproteins affect platelet malondialdehyde and thromboxane B2 production. *Biochem Med* **34**:29-36 (1985).
39. **Aviram M.**, A. Carter, J.G. Brook, and I. Tatarsky. Chylomicronaemia in multiple myeloma.. *Scand J Haematol* **34**: 436-441 (1985).
40. **Aviram M.**, A. Carter, I. Tatarsky, Y. Levy, and J.G. Brook. Increased platelet aggregation following splenectomy in patients with myeloproliferative disease. *Isr J Med Sci* **21**:415-417(1985).
41. Lorber M., **M. Aviram**, S. Linn, Y. Scharf, and J.G. Brook. Hypocholesterolaemia and abnormal high-density lipoprotein in rheumatoid arthritis. *Br J Rheumatol* **24**:250-255 (1985).
42. **Aviram M.**, and J.G. Brook. Plasma lipoprotein pattern and decreased platelet function in type V hyperlipoproteinemia. *Isr J Med Sci* **21**:898-904 (1985).
43. Brook J.G., A. Marmur, Y. Berkovitz, and **M. Aviram**. Platelet adhesion in hyperlipidemic and hypertensive patients. *Haemostasis* **15**:371-376 (1985).
44. Manaster J., **M. Aviram**, I. Silvian, J. Chezar, and G. Spira. Serum immunoglobulin-lipid complexes in plasma cell dyscrasia. *Scand J Immunol* **22**:425-431 (1985).
45. **Aviram M.**, J. Brox, and A. Nordoy. Effects of postprandial plasma and chylomicrons on endothelial cells. Differences between dietary cream and cod liver oil. *Acta Med Scand* **219**: 341-348 (1986).
46. Brook J.G., S. Linn, and **M. Aviram**. Dietary soya lecithin decreases plasma triglyceride levels and inhibits collagen- and ADP-induced platelet aggregation. *Biochem Med Metab Biol* **35**: 31-39 (1986).
47. **Aviram M.**, J.G. Brook, I. Tatarsky, Y. Levy, and A. Carter. Increased low-density lipoprotein levels after splenectomy: a role for the spleen in cholesterol metabolism in myeloproliferative disorders. *Am J Med Sci* **291**: 25-28 (1986).

48. Brook J.G., E. Herzog, and **M. Aviram**. The acute effects of high cholesterol and saturated fat diet on plasma lipoproteins and on platelet aggregation in normolipidemic subjects. *Nutr Rep Int* **33**: 129-138 (1986).
49. Viener A., **M. Aviram**, O.S. Better, and J.G. Brook. Enhanced in vitro platelet aggregation in hemodialysis patients. *Nephron* **43**:139-143 (1986).
50. **Aviram M.**, M. Rosenblat, M. Potesman, G. Dankner and J.G. Brook. Plasma lipoprotein and platelet function after heparin injection: studies in normal fasted and postprandial and in type V hyperlipoproteinemic subjects. *Biochem Med Metab Biol* **35**:279-292 (1986).
51. Brook J.G., B. Fuhrman and **M. Aviram**. Dietary fats, plasma lipoproteins and platelet function. *The physician India* **3**:250-257 (1986).
52. **Aviram M.**, J. Brox, and A. Nordoy. Acute effects of dietary cod liver oil and cream on plasma lipoproteins. *Ann Nutr Metab* **30**:143-148 (1986).
53. Fuhrman B., J.G. Brook, and **M. Aviram**. Increased platelet aggregation during alimentary hyperlipemia in normal and hypertriglyceridemic subjects. *Ann Nutr Metab* **30**:250-260 (1986).
54. **Aviram M.**, B. Fuhrman, and J.G. Brook. Postprandial plasma lipoproteins in normal and hypertriglyceridaemic subjects and their in vitro effect on platelet activity: differences between saturated and polyunsaturated fats. *Scand J Clin Lab Invest* **46**: 571-579 (1986).
55. Winterstein G., J.G. Brook, Pillar T, and **M. Aviram**. Plasma lipoproteins and platelet aggregation during alimentary lipemia. Decreased atherogenic pattern in the elderly. *J Am Geriatr Soc* **34**: 569-572 (1986).
56. Yeshurun D., **M. Aviram**, C. Barak, Y. Baruch, and J.G. Brook. Effects of prolonged fasting on lipids and lipoprotein concentrations in markedly obese patients. *Nutr Rep Int* **34**:613-619 (1986).
57. **Aviram M.** and J.G. Brook. Dysbetalipoproteinemia associated with apolipoprotein E2-4 phenotype. *The Physician India* **3**: 490-493 (1986).
58. **Aviram M.** Platelet-modified low-density lipoproteins: studies in normal subjects and in patients with homozygous familial hypercholesterolemia. *Clin Biochem* **29**: 91-95 (1987).
59. **Aviram M.**, B. Fuhrman, M. Boulos, H. Ginsburg, and J.G. Brook. Effect of plasma lipoproteins on cholesterol accumulation in macrophages: comparison of lipoproteins from normal and homozygous familial hypercholesterolemic subjects. *Atherosclerosis* **65**:207-214 (1987).

60. **Aviram M.**, A. Viener, and J.G. Brook. Reduced plasma high-density lipoprotein and increased platelet activity in arterial versus venous blood. *Postgrad Med J* **63**:91-94 (1987).
61. **Aviram M.** Lipoprotein secretion by human monocyte derived macrophages. *Biochem Biophys Res Commun* **154**: 572-577 (1988).
62. **Aviram M.**, K.J. Williams, and R.J. Deckelbaum. Macrophage cholesterol removal by triglyceride-phospholipid emulsions. *Biochem Biophys Res Commun* **155**: 709-713 (1988).
63. **Aviram M.**, E.L., Bierman, and A. Chait. Modification of low density lipoprotein by lipoprotein lipase or hepatic lipase induces enhanced uptake and cholesterol accumulation in cells. *J Biol Chem* **263**:15416-15422 (1988).
64. **Aviram M.**, S. Lund-Katz, M. Phillips, and A. Chait. The influence of the triglyceride content of low density lipoprotein on the interaction of apolipoprotein B-100 with cells. *J Biol Chem* **263**: 16842-16848 (1988).
65. **Aviram M.**, I. Maor, M. Rosenblat, G. Dankner, and J.G. Brook. Platelet-modified lipoprotein induced by thrombin: effect of whole blood and plasma. *Isr J Med Sci* **24**: 193-200 (1988).
66. **Aviram M.** Low-density lipoprotein and scavenger receptor activities are modulated by secretory products derived from cells of the arterial wall. *Metabolism* **38**: 445-449 (1989).
67. **Aviram M.**, K.J. Williams, R.A., McIntosh, Y.A. Carpentier, A.R. Tall, and R.J. Deckelbaum. Intralipid infusion abolishes ability of human serum to cholesterol-load cultured macrophages. *Arteriosclerosis* **9**:67-75 (1989).
68. **Aviram M.**, and R.J. Deckelbaum. Intralipid infusion into humans reduces in vitro platelet aggregation and alters platelet lipid composition. *Metabolism* **38**:343-347 (1989).
69. **Aviram M.**, E.L. Bierman, and J.F. Oram. High density lipoprotein stimulates sterol translocation between intracellular and plasma membrane pools in human monocyte-derived macrophages. *J Lipid Res* **30**: 65-76 (1989).
70. **Aviram M.**, B. Fuhrman, S. Keidar, I. Maor, M. Rosenblat, G. Dankner, and J.G. Brook. Platelet-modified low density lipoprotein induces macrophage cholesterol accumulation and platelet activation. *J Clin Chem Clin Biochem* **27**:3-12 (1989).
71. **Aviram M.** Platelet secretory products enhance LDL receptor activity and inhibit scavenger receptor activity in human monocyte derived macrophages. *Metabolism* **38**: 425-430 (1989).

72. Suits A.G., A. Chait, **M. Aviram**, and J.W. Heinecke. Phagocytosis of aggregated lipoprotein by macrophages: low density lipoprotein receptor-dependent foam-cell formation. *Proc Natl Acad Sci USA* **86**: 2713-2717 (1989).
73. Keidar S., **M. Aviram**, E. Grenadier., W. Markiewich, and J.G. Brook. Arterial blood derived low density lipoprotein increases platelet aggregation and macrophage cholesterol content in comparison to lipoprotein derived from venous blood. *Artery* **16**:62-71 (1989).
74. **Aviram M.** Modified forms of low density lipoprotein affect platelet aggregation in vitro. *Thromb Res* **53**: 561-567 (1989).
75. Fuhrman B., I. Maor, M. Rosenblat, G. Dankner, **M. Aviram**, and J.G. Brook. Modification of LDL by platelet secretory products induces enhanced uptake and cholesterol accumulation in macrophages. *Biochem Med Metab Biol* **42**: 9-20 (1989).
76. Keidar S., **M. Aviram**, E. Grenadier, W. Markiewicz, and J.G. Brook. Low-density lipoprotein derived from atherosclerotic patients enhances macrophage cholesterol accumulation and in vitro platelet aggregation. *Biochem Med Metab Biol* **41**:117-124 (1989).
77. **Aviram M.**, S. Mokady, and U. Cogan. An effective method for plasma lipoprotein separation: studies of various animal species. *Comp Biochem Physiol B* **93**: 279-282 (1989).
78. Brook G.J., S. Keidar, M. Boulos, E. Grenadier, A. Wiener, N. Shehada, W. Markiewicz, A. Benderle, and **M. Aviram**. Familial homozygous hypercholesterolemia: clinical and cardiovascular features in 18 patients. *Clin Cardiol* **12**:333-338 (1989).
79. Hayek T., B. Fuhrman, Y. Levy, **M. Aviram**, and J.G. Brook. Intralipid infusion in patients with familial hypercholesterolemia. Effect of serum and plasma lipoproteins on platelet aggregation and on macrophage cholesterol metabolism. *Atherosclerosis* **81**:61-69 (1990).
80. **Aviram M.** Malondialdehyde affects the physico-chemical and biological characteristics of oxidized low density lipoprotein. *Atherosclerosis* **84**: 141-143 (1990).
81. **Aviram. M.**, G. Dankner, and J.G. Brook. Platelet secretory products increase low density lipoprotein oxidation, enhance its uptake by macrophages, and reduce its fluidity. *Arteriosclerosis* **10**: 559-563 (1990).
82. Youdim M.B.H., M. Gavish, S. Marmur, and **M. Aviram**. The inhibition of platelet 5-HT release by 5-HT agonists and the binding of 3[H]-8-OH-DPTA to platelet membranes. *Biogenic Amines* **7**:11-18 (1990).
83. Keidar S., A. Etzioni, J.G. Brook, R. Gershoni-Baruch, and **M. Aviram**. Compound heterozygosity for abetalipoproteinaemia and familial hypobetalipoproteinaemia. *J Med Genet* **27**: 133-134 (1990).

84. Rosenthal E., R. Hoffman, **M. Aviram**, A. Benderly, P. Erde, and J.G. Brook. Serum lipoprotein profile in children with celiac disease. *J Pediat Gastroenterol Nutr* **11**: 58-62 (1990).
85. Bergman R., R. Friedman-Birnbaum, **M. Aviram**, I. Katz I.H. Kerner, and J.G. Brook. Adult xanthogranulomatosis associated with abnormal plasma apolipoprotein levels. *Clin Exp Dermatol* **15**:372-375 (1990).
86. Mokady S., U. Cogan, and **M. Aviram**. Dietary tryptophan enhances platelet aggregation in rats. *J Nutr Sci Vitaminol* **36** (Suppl):2 , S 177-180 (1990).
87. **Aviram M.**, and D. Presser. Platelet secretory substances enhance in vitro plasma coagulation. *Isr J Med Sci* **26**: 585-587 (1990).
88. Fuhrman B., G.J. Brook, and **M. Aviram**. Lipid-protein particles secret from activated platelets reduce macrophage uptake of low density lipoprotein. *Atherosclerosis* **89**: 163-173 (1991).
89. **Aviram M.** The contribution of the macrophage receptor for oxidized LDL to its cellular uptake. *Biochem Biophys Res Commun* **179**: 359-365 (1991).
90. **Aviram M.**, S. Keidar, and G.J. Brook. Dual effect of lovastatin and simvastatin on LDL-macrophage interaction. *Eur J Clin Chem Clin Biochem* **29**: 657-664 (1991).
91. **Aviram M.**, U. Cogan, and S. Mokady. Excessive dietary tryptophan enhances plasma lipid peroxidation in rats. *Atherosclerosis* **88**: 29-34 (1991).
92. **Aviram M.**, M. Rosenblat, and J.G. Brook. Secretory products from human monocyte-derived macrophages enhance platelet aggregation. *Metabolism* **40**: 270-274 (1991).
93. **Aviram M.**, S. Keidar, M. Rosenblat and G.J. Brook. Reduced uptake of cholesterol esterase-modified low density lipoprotein by macrophages. *J Biol Chem* **266**: 11567-11574 (1991).
94. Maor I., G.J. Brook, and **M. Aviram**. Platelet secreted lipoprotein-like particle is taken up by the macrophage scavenger receptor and enhances cellular cholesterol accumulation. *Atherosclerosis* **88**:163-174 (1991).
95. Lavy A., G.J. Brook, G. Dankner, A. Ben Amotz, and **M. Aviram**. Enhanced in vitro oxidation of plasma lipoproteins derived from hypercholesterolemic patients. *Metabolism* **40**: 794-799 (1991).
96. Fuhrman B., G.J. Brook and **M. Aviram**. Activated platelets secrete a protein-like factor that stimulates oxidized-LDL receptor activity in macrophages. *J Lipid Res* **32**: 1113-1123 (1991).

97. Heinecke J.W., A.G. Suits, **M. Aviram** and A. Chait. Phagocytosis of lipase-aggregated low density lipoprotein promotes macrophage foam cell formation. Sequential morphological and biochemical events. *Arterioscler Thromb* **11**: 1643-1651 (1991).
98. Bergman R., **M. Aviram.**, O. Bitterman-Deutsch, J. Oiknine, A. Shemer, A. Srebnik, J.G. Brook, and R. Friedman-Birnbaum. Neutral lipid storage disease with ichthyosis: serum apolipoprotein levels and cholesterol metabolism in monocyte-derived macrophages. *J Inherit Metab Dis* **14**: 241-246 (1991).
99. **Aviram M.**, and D. Presser. Oxidized low-density lipoprotein reduces plasma coagulation in vitro. *Scand J Clin Lab Invest* **51**: 17-21 (1991).
100. Klein L., **M. Aviram**, G.J. Brook, S. Mokady, and U. Cogan. Decreased very low density lipoprotein fluidity in familial hypercholesterolemia. *Isr J Med Sci* **27**: 70-74 (1991).
101. **Aviram M.** and Maor I. Phospholipase A2-modified LDL is taken up at enhanced rate by macrophages. *Biochem Biophys Res Commun* **185**: 465-472 (1992).
102. Zambon S., Brazg R., **Aviram M.**, Oram J.F. and Bierman E.L. The effect of probucol on HDL-mediated sterol translocation and efflux from cells. *Atherosclerosis* **94**: 51-60 (1992).
103. **Aviram M.** Low density lipoprotein modification by cholesterol oxidase induces enhanced uptake and cholesterol accumulation in cells. *J Biol Chem* **267**:218-225 (1992).
104. Fuhrman B., G.J. Brook, and **M. Aviram**. Proteins derived from platelet alpha granules modulate the uptake of oxidized low density lipoprotein by macrophages. *Biochim Biophys Acta* **1127**:15-21 (1992).
105. **Aviram M.**, G. Dankner, U. Cogan, E. Hochgraf, and J.G. Brook. Lovastatin inhibits low-density lipoprotein oxidation and alters its fluidity and uptake by macrophages: in vitro and in vivo studies. *Metabolism* **4**: 229-235 (1992).
106. **Aviram M.**, B. Fuhrman, I. Maor and G.J. Brook. Serotonin increases macrophage uptake of oxidized low density lipoprotein. *Eur J Clin Chem Clin Biochem* **30**: 55-61 (1992).
107. Keidar S., J.G. Brook, M. Rosenblat., B. Fuhrman, G. Dankner, and **M. Aviram**. Involvement of the macrophage low density lipoprotein receptor-binding domains in the uptake of oxidized low density lipoprotein. *Arterioscler Thromb* **12**: 484-493 (1992).
108. Oiknine J. and **M. Aviram**. Increased susceptibility to activation and increased uptake of low density lipoprotein by cholesterol-loaded macrophages. *Arterioscler Thromb* **12**:745-753 (1992).

109. Hoffman R., G.J. Brook, and **M. Aviram**. Hypolipidemic drugs reduce lipoprotein susceptibility to undergo lipid peroxidation: in vitro and ex vivo studies. *Atherosclerosis* **93**:105-113 (1992).
110. Keidar S., M. Kaplan, M. Rosenblat, G.J. Brook, and **M. Aviram**. Apolipoprotein E and lipoprotein lipase reduce macrophage degradation of oxidized very-low-density lipoprotein (VLDL), but increase cellular degradation of native VLDL. *Metabolism* **41**: 1185-1192 (1992).
111. Levy Y., **M. Aviram**, E. Hochgraf, G.J. Brook and U. Cogan. A sex-dependent effect of aspirin on platelet membrane fluidity. *Platelets* **3**: 57-59 (1992).
112. Mandel H., M. Berant, D. Meiron, A. Aizin, J. Oiknine, J.G. Brook, and **M. Aviram**. Plasma lipoproteins and monocyte-macrophages in a peroxisome-deficient system: study of a patient with infantile refsum disease. *J Inheri Metab Dis* **15**: 774-784 (1992).
113. Hochberg Z. Hertz P., Maor G., Oiknine J. and **Aviram M**. Growth hormone and insulin-like growth factor-I increase macrophage uptake and degradation of low density lipoprotein. *Endocrinology* **131**:430- 435 (1992).
114. Levy Y., R. Leibowitz, **M. Aviram**, J.G. Brook and U. Cogan. Reduction of plasma cholesterol by lovastatin normalizes erythrocyte membrane fluidity in patients with severe hypercholesterolaemia. *Br J Clin Pharmacol* **34**:427-430 (1992).
115. Levy Y., L. Klein, **M. Aviram**, J.G. Brook and U. Cogan. Effect of lovastatin on lipoprotein fluidity in patients with hypercholesterolaemia. *Scand J Clin Lab Invest* **52**: 671-677 (1992).
116. Azugui G., Ben-Shlomo I., Zohar S., Kook A. Presser D. and **Aviram M**. High density lipoprotein concentration is increased during the ovulatory phase of the menstrual cycle in healthy young women. *Gynecological Endocrinol* **6**: 253-257 (1992).
117. **Aviram M**. and I. Maor. Phospholipase D-modified low density lipoprotein is taken up by macrophages at increased rate. A possible role for phosphatidic acid. *J Clin Invest* **91**:1942-1952 (1993).
118. Lavy A., A. Ben Amotz and **M. Aviram**. Preferential inhibition of LDL oxidation by the all-trans isomer of beta-carotene in comparison with 9-cis beta-carotene. *Eur J Clin Chem Clin Biochem* **31**: 83-90 (1993).
119. **Aviram M**. and K. Eias. Dietary olive oil reduces low-density lipoprotein uptake by macrophages and decreases the susceptibility of the lipoprotein to undergo lipid peroxidation. *Ann Nutr Metabol* **37**:75-84 (1993).
120. Lavy A., A. Ben Amotz and **M. Aviram**. Increased susceptibility to undergo lipid peroxidation of chylomicrons and low-density lipoprotein in celiac disease. *Ann Nutr Metab* **37**: 68-74 (1993).

121. Hussein O., G.J. Brook and **M. Aviram**. Intraperitoneal injection of platelet secretory products into mice increases macrophage uptake of oxidized low density lipoprotein. *Isr J Med Sci* **29**: 453-459 (1993).
122. Bergman R., **Aviram M.**, Shemer A., Oiknine J. Vardi D.A. and R. Birnbaum-Friedman. Enhanced low-density lipoprotein degradation and cholesterol synthesis in monocyte-derived macrophages of patients with adult xanthogranulomatosis. *J Invest Dermatol* **101**: 880-882 (1993).
123. Keidar S., A. Gilhar, M. Kaplan, J.G. Brook and **M. Aviram**. Enhanced degradation of high density lipoprotein by peritoneal macrophages from nude mice is attenuated by interleukin-1. *Artery* **20**:268-279 (1993).
124. Levy Y., A. Ben Amotz, G. Dankner, J.G. Brook and **M. Aviram**. Enhanced lipid peroxidation of low density lipoprotein by fish oil. *J Optimol Nutr* **2**: 6-9 (1993).
125. Hochgraf E., Y. Levy, **M. Aviram**, J.G. Brook, and U. Cogan. Lovastatin decreases plasma and platelet cholesterol levels and normalizes elevated platelet fluidity and aggregation in hypercholesterolemic patients. *Metabolism* **43**: 11-17 (1994).
126. Hayek T., J. Oiknine, J.G. Brook and **M. Aviram**. Increased plasma and lipoprotein lipid peroxidation in apo E-deficient mice. *Biochem Biophys Res Commun* **201**:1567-1574 (1994).
127. **Aviram M.** and M. Rosenblat. Macrophage-mediated oxidation of extracellular low density lipoprotein requires an initial binding of the lipoprotein to its receptor. *J Lipid Res* **35**: 385-398 (1994).
128. Maor I. and **M. Aviram**. Oxidized low density lipoprotein leads to macrophage accumulation of unesterified cholesterol as a result of lysosomal trapping of the lipoprotein hydrolyzed cholesteryl ester. *J Lipid Res* **35**: 803-819 (1994).
129. Keidar S., M. Kaplan, H. Shapira, J.G. Brook, and **M. Aviram**. Low density lipoprotein isolated from patients with essential hypertension exhibits increased propensity for oxidation and enhanced uptake by macrophages: a possible role for angiotensin II. *Atherosclerosis* **104**:71-84 (1994).
130. Fuhrman B., J. Oiknine and **M. Aviram**. Iron induces lipid peroxidation in cultured macrophages, increases their ability to oxidatively modify LDL, and affects their secretory properties. *Atherosclerosis* **111**: 65-78 (1994).
131. Hayek T., Oiknine J., Brook J.G. and **Aviram M.** Role of HDL apolipoprotein E in cellular cholesterol efflux: studies in apo E knockout transgenic mice. *Biochem Biophys Res Commun* **205**: 1072-1078 (1994).

132. **Aviram M.** and Oiknine J. Involvement of second messengers in lipopolysaccharide stimulation of low density lipoprotein uptake by macrophages. *Isr J Med Sci* **30**: 503-506 (1994).
133. Keidar S., **M. Aviram**, I. Maor, J. Oiknine and J.G. Brook. Pravastatin inhibits cellular cholesterol synthesis and increases low density lipoprotein receptor activity in macrophages: in vitro and in vivo studies. *Br J Clin Pharmacol* **38**: 513-519 (1994).
134. Lavy A., Fuhrman B., Markel A., Dankner G., Ben-Amotz A., Presser D. and **Aviram M.** Effect of dietary supplementation of red or white wine on human blood chemistry, hematology and coagulation: favorable effect of red wine on plasma high-density lipoprotein. *Ann Nutr Metabol* **38**: 287-294 (1994).
135. Lavy A., G. Dankner and **M. Aviram**. Beta-Galactosidase-modified low density lipoprotein demonstrates increased susceptibility to lipid peroxidation and enhanced uptake by macrophages. *Isr J Med Sci* **30**: 905-907 (1994).
136. Mandel H., M. Getsis, M. Rosenblat, M. Berant and **M. Aviram**. Reduced cellular cholesterol content in peroxisome-deficient fibroblasts is associated with impaired uptake of the patient's low density lipoprotein and with reduced cholesterol synthesis. *J Lipid Res* **36**:1385-1391 (1995).
137. Keidar S., M. Kaplan, A. Hoffman, and **M. Aviram**. Angiotensin II stimulates macrophage-mediated oxidation of low density lipoproteins. *Atherosclerosis* **115**: 201-215 (1995)
138. Fuhrman B., A. Lavy and **M. Aviram**. Consumption of red wine with meals reduces the susceptibility of human plasma and low-density lipoprotein to lipid peroxidation. *Am J Clin Nutr* **61**: 549-554 (1995).
139. **Aviram M.**, M. Bar and I. Maor. Macrophage localization of unesterified cholesterol affects cellular cholesterol regulation and its cytotoxicity: atherogenicity of excess plasma membrane cholesterol. *Bull Mol Biol Med* **20**: 49-54 (1995).
140. Maor I., H. Mandel and **M. Aviram**. Macrophage uptake of oxidized LDL inhibits lysosomal sphingomyelinase, thus causing the accumulation of unesterified cholesterol-sphingomyelin-rich particles in the lysosomes. A possible role for 7-Ketocholesterol. *Arterioscler Thromb Vasc Biol* **15**: 1378-1387 (1995).
141. **Aviram M.**, Maor I., Keidar S., Hayek T., Oiknine J., Bar-El Y., Adler Z., Kertzman V. and Milo S. Lesioned low density lipoprotein in atherosclerotic apolipoprotein E-deficient transgenic mice and in humans is oxidized and aggregated. *Biochem Biophys Res Commun* **216**: 501-513 (1995).
142. Levy Y., A. Ben-Amotz and **M. Aviram**. Effect of dietary supplementation of different β -carotene isomers on lipoprotein oxidative modification. *J Nutr Envir Med* **5**: 13-22 (1995).

143. Wolfovitz E., **M. Aviram.**, J.G. Brook., I. Tatarsky and N. Lanir. Protective effect of low concentrations of oxidized low-density lipoprotein on endothelial cell integrity. *J Cardiovasc Risk* **2**: 57-62 (1995).
144. Li Q., B. Fuhrman and **M. Aviram.** Low density lipoprotein-cholesteryl ester-derived linoleic acid is mainly incorporated into the phospholipid component of the macrophages. *Isr J Med Sci* **31**: 474-478 (1995).
145. Hayek T., Oiknine J., Dankner G., Brook J.G. and **Aviram M.** HDL apolipoprotein A-I attenuates oxidative modification of low density lipoprotein: studies in transgenic mice. *Eur J Clin Chem Clin Biochem* **33**: 721-725 (1995).
146. Fuhrman B. and **Aviram M.** White wine reduces the susceptibility of low density lipoprotein to oxidation. *Am J Clin Nutr* **63**: 403-404 (1996).
147. Hayek T., Rosenblat M. and **Aviram M.** Increased platelet activation in the atherosclerotic, apolipoprotein E-deficient transgenic mouse: role of plasma lipoprotein and platelet composition. *Eur J Lab Med* **4**: 79-84 (1996).
148. Ljubuncic P., Fuhrman B., Oiknine J., **Aviram M.**, Bomzon A. Effect of deoxycholic acid and ursodeoxycholic acid on lipid peroxidation in cultured macrophages. *Gut* **39**: 475-478 (1996).
149. Mandel H., Getsis M., Rosenblat M., Berant M. and **Aviram M.** Impaired cholesterol synthesis rate in fibroblasts and reduced cellular uptake of LDLs derived from peroxisome-deficient patients cause cellular cholesterol deficiency in peroxisome-deficient fibroblasts. *Ann N Y Acad Sci* **804**:752-755, (1996).
150. Keidar S., Kaplan M. and **Aviram M.** Angiotensin II-modified LDL is taken up by macrophages via the scavenger receptor, leading to cellular cholesterol accumulation. *Arterioscler Thromb Vasc Biol* **16**: 97-105 (1996).
151. **Aviram M.**, Rosenblat M., Etzioni A. and Levy R. Activation of NADPH oxidase required for macrophage-mediated oxidation of low-density lipoprotein. *Metabolism* **45**:1069-1079 (1996).
152. Bergman R., Kasif Y., **Aviram M.**, Maor I., Ullman Y., Gdal-On M. and Friedman-Birnbaum R. Normolipidemic xanthelasma palpebrarum: lipid composition, cholesterol metabolism in monocyte-derived macrophages, and plasma lipid peroxidation. *Acta Derm Venereol* **76**: 107-110 (1996).
153. Keidar S, Oiknine J, Leiba A, Shapira C, Leiba M, and **Aviram M.** Fosinopril reduces ADP-induced platelet aggregation in hypertensive patients. *J Cardiovasc Pharmacol* **27**: 183-186 (1996).

154. Levy Y., Kaplan M., Ben Amotz A. and **Aviram M.** Effect of dietary supplementation of beta-carotene on human monocyte-macrophage-mediated oxidation of low density lipoprotein. *Isr J Med Sci* **32**: 473-478 (1996).
155. Carter D., B. Fuhrman and **M. Aviram.** Macrophage activation with phorbol myristate acetate is associated with cellular lipid peroxidation. *Isr J Med Sci* **32**: 479-485 (1996).
156. **Aviram M.** and M. Rosenblat. Phospholipase A2 and phospholipase D are involved in macrophage NADPH oxidase-mediated oxidation of low density lipoprotein. *Isr J Med Sci* **32**: 749-756 (1996).
157. Pipek R., Dankner G., Ben-Amotz A., **Aviram M.**, and Levy Y. Increased plasma oxidizability in subjects with severe obesity. *J Nutr Environ Med* **6**: 267-272 (1996).
158. Levy Y., Maor I, Presser D. and **Aviram M.** Consumption of eggs with meals increases the susceptibility of human plasma and low-density lipoprotein to lipid peroxidation. *Ann Nutr Metab* **40**: 243-251 (1996).
159. Bar J., Schoenfeld A., Hod M., Rabinerson D., Marmur A., Brook G.J, and **Aviram M.** The effects of time interval after venipuncture and of anticoagulation on platelet adhesion and aggregation. *Clin Lab Haematol* **18**:281-284 (1996).
160. Hussein O., Rosenblat M., Refael G. and **Aviram M.** Dietary selenium increases cellular glutathione peroxidase activity and reduces the enhanced susceptibility to lipid peroxidation of plasma and low-density lipoprotein in kidney transplant recipients. *Transplantation* **63**: 679-685 (1997).
161. Vaya J., Belinky P. and **Aviram M.** Antioxidant constituents from licorice roots: isolation, structure elucidation and antioxidative capacity toward LDL oxidation. *Free Radic Biol Med* **23**:302-313 (1997).
162. Hochberg Z., **Aviram M.**, Rubin D. and Pollack S. Decreased sensitivity to insulin-like growth factor I in Turner's syndrome: a study of monocytes and T lymphocytes. *Eur J Clin Invest* **27**:543-547 (1997).
163. Hussein O., Schlezinger S., Rosenblat M., Keidar S. and **Aviram M.** Reduced susceptibility of low density lipoprotein (LDL) to lipid peroxidation after fluvastatin therapy is associated with the hypocholesterolemic effect of the drug and its binding to the LDL. *Atherosclerosis* **128**: 11-18 (1997).
164. Fuhrman B., Oiknine J., Keidar S., Ben-Yaish L, Kaplan M. and **Aviram M.** Increased uptake of LDL by oxidized macrophages is the result of an initial enhanced LDL receptor activity and of a further progressive oxidation of LDL. *Free Radic Biol Med* **23**:34-46 (1997).

165. Fuhrman B., Elis A. and **Aviram M.** Hypocholesterolemic effect of lycopene and beta-carotene is related to suppression of cholesterol synthesis and augmentation of LDL receptor activity in macrophages. *Biochem Biophys Res Commun* **233**:658-662 (1997).
166. Fuhrman B., Buch S., Vaya J., Belinky P.A., Coleman R., Hayek T. and **Aviram M.** Licorice extract and its major polyphenol glabridin protect low-density lipoprotein against lipid peroxidation: in vitro and ex vivo studies in humans and in atherosclerotic apolipoprotein E-deficient mice. *Am J Clin Nutr* **66**:267-275 (1997).
167. Hayek T., Fuhrman B., Vaya J., Rosenblat M., Belinky P., Coleman R., Elis A. and **Aviram M.** Reduced progression of atherosclerosis in apolipoprotein E-deficient mice following consumption of red wine, or its polyphenols quercetin or catechin, is associated with reduced susceptibility of LDL to oxidation and aggregation. *Arterioscler Thromb Vasc Biol* **17**:2744-2752 (1997).
168. Maor I., Hayek T., Coleman R. and **Aviram M.** Plasma LDL oxidation leads to its aggregation in the atherosclerotic apolipoprotein E-deficient mice. *Arterioscler Thromb Vasc Biol* **17**:2995-3005 (1997).
169. Kaplan M. and **Aviram M.** Oxidized LDL binding to a macrophage-secreted extracellular matrix. *Biochem Biophys Res Commun* **237**:271-276 (1997).
170. **Aviram M.**, Hayek T. and Fuhrman B. Red wine consumption inhibits LDL oxidation and aggregation in humans and in atherosclerotic mice. *Biofactors* **6**: 415-419 (1997).
171. Hussein O., Schlezinger S., Rosenblat M, Keidar S. and **Aviram M.** Reduced platelet aggregation after fluvastatin therapy is associated with altered platelet lipid composition and drug binding to the platelets. *Br J Pharmacol* **44**:77-84 (1997).
172. Hussein O., Schlezinger S., Rosenblat M, Keidar S. and **Aviram M.** Reduced susceptibility of low density lipoprotein (LDL) to lipid peroxidation after fluvastatin therapy is associated with the hypocholesterolemic effect of the drug and its binding to the LDL. *Atherosclerosis*. **128**:11-8 (1997).
173. George J., Blank M., Hojnic M., Bar-Meir E., Koike T., Matsuura E., Lorber M., **Aviram M.** and Shoenfeld Y. Oxidized low-density lipoprotein (Ox-LDL) but not LDL aggravates the manifestations of experimental antiphospholipid syndrome (APS). *Clin Exp Immunol* **108** : 227-233 (1997).
174. Fuhrman B., Ben-Yaish L., Attias J., Hayek T. and **Aviram M.** Tomato lycopene and β -carotene inhibit low density lipoprotein oxidation and this effect depends on the lipoprotein vitamin E content. *Nutr Metab Cardiovasc Dis* **7**:433-443 (1997).
175. **Aviram M.**, Rosenblat M., Bisgaier C.L. and Newton R.S. Atorvastatin and gemfibrozil metabolites, but not the parent drugs, are potent antioxidants against lipoprotein oxidation. *Atherosclerosis* **138**:271-280 (1998).

176. Belinky P.A., **Aviram M.**, Fuhrman B., Rosenblat M., and Vaya J. The antioxidative effects of the isoflavan glabridin on endogenous constituents of LDL during its oxidation. *Atherosclerosis* **137**:49-61 (1998).
177. Belinky P.A., **Aviram M.**, Mahmood S., and Vaya J. Structural aspects of the inhibitory effect of glabridin on LDL oxidation. *Free Radic Biol Med* **24**:1419-1429 (1998).
178. Zhu L, Gong B, Bisgaier C L, **Aviram M.** and Newton R S. Induction of PPARgamma1 expression in human THP-1 monocytic leukemia cells by 9-cis-retinoic acid is associated with cellular growth suppression. *Biochem Biophys Res Commun* **251**: 842-848 (1998).
179. Mandel H., Sharf R., Berant M., Wanders R.J., Vreken P. and **Aviram M.** Plasmalogen phospholipids are involved in HDL-mediated cholesterol efflux: insights from investigations with plasmalogen-deficient cells. *Biochem Biophys Res Commun* **250**: 369-373 (1998).
180. Rosenblat M. and **Aviram M.** Macrophage glutathione content and glutathione peroxidase activity are inversely related to cell-mediated oxidation of LDL: in vitro and in vivo studies. *Free Radic Biol Med* **24**:305-317 (1998).
181. Kaplan M., Williams K., Mandel H. and **Aviram M.** Role of macrophage glycosaminoglycans in the cellular catabolism of oxidized LDL by macrophages. *Arterioscler Thromb Vasc Biol* **18**:542-553 (1998).
182. **Aviram M.**, Rosenblat M., Bisgaier C.L., Newton R.S., Primo-Parmo S.L., and La Du B.N. Paraoxonase inhibits high-density lipoprotein oxidation and preserves its functions. A possible peroxidative role for paraoxonase. *J Clin Invest* **101**:1581-1590 (1998).
183. **Aviram M.**, Billecke S., Sorenson R., Bisgaier C., Newton R., Rosenblat M., Eroglu J., Hsu C., Dunlop C., and La Du B. Paraoxonase active site required for protection against LDL oxidation involves its free sulfhydryl group and is different from that required for its arylesterase/paraoxonase activities: selective action of human paraoxonase allozymes Q and R. *Arterioscler Thromb Vasc Biol* **18**:1617-1624 (1998).
184. Levy Y, Bartha P, Ben-Amotz A, Brook JG, **Aviram M.**, Lin S, Hammerman H, Plasma antioxidants and lipid peroxidation in acute myocardial infarction and thrombolysis. *J Am Coll Nutr* **17**:337-341 (1998).
185. Maor I. and **Aviram M.** Macrophage released proteoglycans are involved in cell-mediated aggregation of LDL. *Atherosclerosis* **142**: 57-66 (1999).
186. **Aviram M.**, Kent U.M. and Hollenberg P.F. Microsomal cytochromes P450 catalyze the oxidation of low density lipoprotein. *Atherosclerosis* **143**:253-260 (1999).
187. Zhu L., Bisgaier C.L., **Aviram M.** and Newton R.S. 9-cis retinoic acid induces monocyte chemoattractant protein-1 secretion in human monocytic THP-1 cells. *Arterioscler Thromb Vasc Biol* **19**: 2105-2111 (1999).

188. Swarrop M., Bian J., **Aviram M.**, Hanqjun D., Bisgaier C.L., Loo J.A. and Sun Y. Expression, purification, and biochemical characterization of SAG, a ring finger redox-sensitive protein. *Free Radic Biol Med* **27**: 193-202 (1999).
189. Keidar S., Attias J., Heinrich R., Coleman R. and **Aviram M.** Angiotensin II atherogenicity in apolipoprotein E deficient mice is associated with increased cellular cholesterol biosynthesis. *Atherosclerosis* **146**: 249-257 (1999).
190. Duan H., Wang Y., **Aviram M.**, Swaroop M., Loo J.A., Bian J., Tian Y., Mueller T., Bisgaier C.L. and Sun Y. SAG, a novel zinc RING finger protein that protects cells from apoptosis induced by redox agents. *Mol Cell Biol* **19**:3145-3155 (1999).
191. **Aviram M.**, Rosenblat M., Billecke S., Eroglu J., Sorenson R., Bisgaier C.L., Newton R.S., and La Du B N. Human serum paraoxonase (PON 1) is inactivated by oxidized low density lipoprotein and preserved by antioxidants. *Free Radic Biol Med* **26**:892-904 (1999).
192. Rosenblat M., Belinky P., Vaya J., Levy R., Hayek T., Coleman R., Merchav S. and **Aviram M.** Macrophage enrichment with the isoflavan glabridin inhibits NADPH oxidase-induced cell-mediated oxidation of low density lipoprotein. A possible role for protein kinase C. *J Biol Chem* **274**: 13790-13799 (1999).
193. Sorenson R C, Bisgaier C L, **Aviram M**, Hsu C, Billecke S, and La Du B N. Human serum Paraoxonase/Arylesterase's retained hydrophobic N-terminal leader sequence associates with HDLs by binding phospholipids : apolipoprotein A-I stabilizes activity. *Arterioscler Thromb Vasc Biol* **19**: 2214-2225 (1999).
194. La Du B.N., **Aviram M.**, Billecke S., Navab M., Primo-Paromo S., Sorenson R.C, and Standiford T.J. On the physiological role(s) of the paraoxonases. *Chem Biol Interact* **119-120**: 379-388 (1999).
195. Sorenson R.C., **Aviram M.**, Bisgaier C.L., Billecke S., and La Du B.N. Properties of the retained N-terminal hydrophobic leader sequence in human serum paraoxonase/arylesterase. *Chem Biol Interact* **119-120**: 243-249 (1999).
196. Zallzberg H., Kanter Y., **Aviram M.** and Levy Y. Increased plasma oxidizability and decreased erythrocyte and plasma antioxidative capacity in patients with NIDDM. *Isr Med Assoc J* **1**: 228-231 (1999).
197. Levy Y., Zaltzberg H., Bon-Amotz A., Kanter Y. and **Aviram M.** β -Carotene affects antioxidant status in non-insulin-dependent diabetes mellitus. *Pathophysiology* **6**:157-161 (1999).
198. **Aviram M.**, Dornfeld L., Rosenblat M., Volkova N., Kaplan M., Hayek T., Presser D. and Fuhrman B. Pomegranate juice consumption reduces oxidative stress, atherogenic

- modifications to LDL, and platelet aggregation: studies in humans and in atherosclerotic apolipoprotein E-deficient mice. *Am J Clin Nutr* **71**: 1062-1076 (2000).
199. **Aviram M.**, Hardak E., Vaya J., Mahmood S., Milo S., Hoffman A., Billecke S., Dragonov D. and Rosenblat M. Human serum paraoxonases (PON1) Q and R selectively decrease lipid peroxides in human coronary and carotid atherosclerotic lesions: PON1 esterase and peroxidase-like activities. *Circulation* **101**: 2510-2517 (2000).
200. Kaplan M. and **Aviram M.** Macrophage plasma membrane chondroitin sulfate proteoglycan binds oxidized low-density lipoprotein. *Atherosclerosis* **149**:5-17 (2000).
201. Maor I., Hayek T., Hirsh M., Iancu T.C. and **Aviram M.** Macrophage-released proteoglycans enhance LDL aggregation: studies in aorta from apolipoprotein E-deficient mice. *Atherosclerosis* **150**: 91-101 (2000).
202. Maor I., Kaplan M., Hayek T., Vaya J., Hoffman A. and **Aviram M.** Oxidized monocyte-derived macrophages in aortic atherosclerotic lesion from apolipoprotein E-deficient mice and from human carotid artery contain lipid peroxides and oxysterols. *Biochem Biophys Res Commun* **269**: 775-780 (2000).
203. Vuletich J.L., Osawa Y. and **Aviram M.** Enhanced lipid oxidation by oxidatively modified myoglobin: role of protein-bound heme. *Biochem Biophys Res Commun* **269**: 647-651 (2000).
204. Fuhrman B. Rosenblat M., Hayek T., Coleman R. and **Aviram M.** Ginger extract consumption reduces plasma cholesterol, inhibits LDL oxidation and attenuates development of atherosclerosis in atherosclerotic, apolipoprotein E-deficient mice. *J Nutr* **130**: 1124-1131 (2000).
205. Hayek T., Aviram M., Heinrich R., Sakhnini E. and Keidar S. Losartan inhibits cellular uptake of oxidized LDL by monocyte-macrophages from hypercholesterolemic patients. *Biochem Biophys Res Commun* **273**: 417-420 (2000).
206. Fuhrman B., Volkova N., Rosenblat M. and **Aviram M.** Lycopene synergistically inhibits LDL oxidation in combination with vitamin E, glabridin, rosmarinic acid, carnolic acid, or garlic. *Antioxid Redox Signal (ARS)* **2**: 491-506 (2000).
207. Levy Y., Zaltsberg H., Ben-Amotz A., Kanter Y. and **Aviram M.** Dietary supplementation of a natural isomer mixture of beta-carotene inhibits oxidation of LDL derived from patients with diabetes mellitus. *Ann Nutr Metab* **44**: 54-60 (2000).
208. Guttman H, Weiner Z, Nikolski E, Ish-Shalom S, Itskovitz-Eldor J, **Aviram M**, and Hochberg Z. Choosing an oestrogen replacement therapy in young adult women with Turner syndrome. *Clin Endocrinol* **54**: 159-164 (2000).
209. Willson S.H., Simari R.D., Best P.J., Peterson T.E., Lerman L.O., **Aviram M.**, Nath K.A., Holmes D.R. Jr. and Leraman A. Simvastatin preserves coronary endothelial

- function in hypercholesterolemia in the absence of lipid lowering. *Arterioscler Thromb Vasc Biol* **21**: 122-128 (2001).
210. Vaya J., **Aviram M.**, Mahmood S., Hayek T, Grenadir E., Hoffman A. and Milo S. Selective distribution of oxysterols in atherosclerotic lesions and human plasma lipoproteins. *Free Radic Res* **34**: 485-497 (2001).
211. Kaplan M and **Aviram M.** Retention of oxidized LDL by extracellular matrix proteoglycans leads to its uptake by macrophages: an alternative approach to study lipoproteins cellular uptake. *Arterioscler Thromb Vasc Biol* **21**:386 – 393 (2001).
212. Kaplan M., Hayek T., Raz A., Coleman R., Dornfeld L., Vaya J. and **Aviram M.** Pomegranate juice supplementation to atherosclerotic mice reduces macrophage lipid peroxidation, cellular cholesterol accumulation and development of atherosclerosis. *J Nutr* **131**:2082-2089 (2001).
213. Fuhrman B., Volkova N., Soraski A. and **Aviram M.** White wine with red wine-like properties: increased extraction of grape skin polyphenols improves the antioxidant capacity of the derived white wine. *J Agric Food Chem* **49**:3164 – 3168 (2001).
214. **Aviram M.** and Dornfeld L. Pomegranate juice consumption inhibits serum angiotensin converting enzyme activity and reduces systolic blood pressure. *Atherosclerosis* **158**:195-198 (2001).
215. Hussein O., Frydman G., Frim H. and **Aviram M.** Reduced susceptibility of low density lipoprotein to lipid peroxidation after cholestyramine treatment in heterozygous familial hypercholesterolemic children. *Pathophysiology* **8**: 21-28 (2001).
216. Keidar S., Heinrich R., Kaplan M., Hayek T. and **Aviram M.** Angiotensin II administration to atherosclerotic mice increases macrophage uptake of oxidized LDL: a possible role for interleukin-6. *Arterioscler Thromb Vasc Biol* **21**:1464 –1469 (2001).
217. Rosenblat M. and **Aviram M.** Oxysterol-induced activation of macrophage NADPH-oxidase enhances cell-mediated oxidation of LDL in the atherosclerotic apolipoprotein E deficient mouse: inhibitory role for vitamin E. *Atherosclerosis* **160**: 69–80 (2002).
218. Fuhrman B., Volkova N. and **Aviram M.** Oxidative stress increases the expression of the CD36 scavenger receptor and the cellular uptake of oxidized low-density lipoprotein in macrophages from atherosclerotic mice: protective role of antioxidants and of paraoxonase. *Atherosclerosis* **161**: 307- 316 (2002).
219. Hayek T., Kaplan M., Raz A., Keidar S., Coleman R. and **Aviram M.** Ramipril administration to atherosclerotic mice reduces oxidized low-density lipoprotein uptake by their macrophages and blocks the progression of atherosclerosis. *Atherosclerosis* **161**: 65–74 (2002).

220. Fuhrman B., Volkova N., Kaplan M., Presser D., Attias J., Hayek T. and **Aviram M.** Antiatherosclerotic effects of licorice extract supplementation on hypercholesterolemic patients: increased resistance of LDL to atherogenic modifications, reduced plasma lipid levels, and decreased systolic blood pressure. *Nutrition* **18**: 268-273 (2002).
221. Rosenblat M., Grunfeld O., Hayek T. and **Aviram M.** Serum paraoxonase activity and the extent of lipid peroxidation are not affected by increased levels of human apolipoprotein A-I: studies in transgenic mice. *Clin Chem Lab Med* **40**:9-14 (2002).
222. Kaplan M., **Aviram M.**, Knopf C and Keidar S. Angiotensin II reduces macrophage cholesterol efflux: a role for the AT-1 receptor but not for the ABC1 transporter. *Biochem Biophys Res Commun* **290**:1529-1534 (2002).
223. Keidar S., Heinrich R. Kaplan M. and **Aviram M.** Oxidative stress increases the expression of the angiotensin-II receptor type 1 in mouse peritoneal macrophages. *J. Renin-Angiotensin-Aldosterone Syst (JRAAS)* **3**:24-30 (2002).
224. Rosenblat M., Coleman R. and **Aviram M.** Increased macrophage glutathione content reduces cell-mediated oxidation of LDL and atherosclerosis in apolipoprotein E-deficient mice. *Atherosclerosis* **163**: 17-28 (2002).
225. Hussein O., Shneider J., Rosenblat M. and **Aviram M.** Valsartan therapy has additive anti-oxidative effect to that of fluvastatin therapy against low-density lipoprotein oxidation: studies in hypercholesterolemic and hypertensive patients. *J Cardiovasc Pharmacol* **40**:28-34 (2002).
226. Kent UM., **Aviram M.**, Rosenblat M. and Hollenberg PF. The licorice root derived isoflavan glabridin inhibits the activities of human cytochrome P450S 3A4, 2B6, and 2C9. *Drug Metab Dispos* **30**: 709-715 (2002).
227. Fuhrman B., Koren L., Volkova N., Keidar S., Hayek T. and **Aviram M.** Atorvastatin therapy in hypercholesterolemic patients suppresses cellular uptake of oxidized-LDL by differentiating monocytes. *Atherosclerosis* **164**: 179-185 (2002).
228. Howard A., Chopra M., Thurnham D., Strain J., Fuhrman B. and **Aviram M.** Red wine consumption and inhibition of LDL oxidation: what are the important components? *Med Hypotheses* **59**:101-104 (2002).
229. Aviram R. and **Aviram M.** Onion juice polyphenols inhibits LDL oxidation: stimulatory effect of juice storage and of the onion outer peel juice. *Free Radical Research* **36** (Supplement 1): 69-70 (2002).
230. Sachais B S., Kuo A, Nassar T, Morgan J, Kariko K, Williams K J, Feldman M, **Aviram M.**, Shah N, Jarett L, Poncz M, Cines DB and Higazi A A. Platelet factor 4 binds to low-density lipoprotein receptors and disrupts the endocytic machinery, resulting in retention of low-density lipoprotein on the cell surface. *Blood* **99**: 3613-3622 (2002).

231. Nassar T., Sachais BS., Akkawi S., Kowalska MA., Bdeir K, Leitersdorf E., Hiss E., Ziporen L., **Aviram M.**, Cines DB., Poncz M. and Higazi AA. Platelet factor 4 enhances the binding of oxidized low-density lipoprotein to vascular wall cells. *J Biol Chem* **278**: 6187-6193 (2003).
232. Vaya J., Mahmood S., Goldblum A., **Aviram M.**, Volkova N., Shaalan A., Musa R. and Tamir S. Inhibition of LDL oxidation by flavonoids in relation to their structure and calculated enthalpy. *Phytochemistry* **62**: 89-99 (2003).
233. Rozenberg O., Rosenblat M., Coleman R., Shih D.M. and **Aviram M.** Paraoxonase (PON1) deficiency is associated with increased macrophage oxidative stress: studies in PON1-knockout mice *Free Radic Biol Med* **34**:774-784 (2003).
234. Rozenberg O., Shih D.M. and **Aviram M.** Human serum paraoxonase 1 decreases macrophage cholesterol biosynthesis: possible role for its phospholipase-A2-like activity and lysophosphatidylcholine formation. *Arterioscler Thromb Vasc Biol* **23**: 461-467 (2003).
235. Rosenblat M., Draganov D., Watson C.E., Bisgaier C.L., La Du B.N. and **Aviram M.** Mouse macrophage paraoxonase 2 activity is increased whereas cellular paraoxonase 3 activity is decreased under oxidative stress. *Arterioscler Thromb Vasc Biol* **23**: 468-474 (2003).
236. Keidar S., Hayek T., Kaplan M., Pavlotzky E., Hamoud S., Coleman R and **Aviram M.** Effect of eplerenone, a selective aldosterone blocker, on blood pressure, serum and macrophage oxidative stress, and atherosclerosis in apolipoprotein E-deficient mice. *J Cardiovasc Pharmacol* **41**: 955-963 (2003).
237. Hayek T., Pavlotzky E., Hamoud S., Coleman R., Keidar S. **Aviram M.** and Kaplan M. Tissue angiotensin-converting-enzyme (ACE) deficiency leads to a reduction in oxidative stress and in atherosclerosis: studies in ACE-knockout mice type 2. *Arterioscler Thromb Avasc Biol* **23**: 2090-2096(2003).
238. Blum S., **Aviram M.**, Zinder O., Levy Y. Postprandial markers of inflammation and oxidation following different fatty meals (Mediterranean vs. Western). *Clin Nutr.* **22**(S1): S18 (2003).
239. Szuchman A. **Aviram M.**, Tamir S. and Vaya J. Cholesterol, linoleic acid or/and tyrosine yield different spectra of products when oxidized alone or in a mixture: studies in various oxidative systems. *Free Radic. Res.* **37**: 1277-1288 (2003).
240. Hayek T., Hamoud S., Keidar S., Pavoltzky E., Coleman R., **Aviram M.** and Kaplan M. Omapatrilat decreased macrophage oxidative status and atherosclerosis progression in atherosclerotic apolipoprotein E-deficient mice. *J Cardiovasc Pharmacol* **43**:140-147 (2004).

241. Rosenblat M., Hayek T., Hussein K and **Aviram M.** Decreased macrophage paraoxonase 2 expression in patients with hypercholesterolemia is the result of their increased cellular cholesterol content: effect of atorvastatin therapy. *Arterioscler Thromb Vasc Biol* **24**: 175-180 (2004).
242. **Aviram M.**, Rosenblat M., Gaitini D., Nitecki S., Hoffman A., Dornfeld L., Volkova N., Presser D., Attias J., Leiker H. and Hayek T. Pomegranate juice consumption for 3 years by patients with carotid artery stenosis reduces common carotid intima-media thickness, blood pressure and LDL oxidation. *Clin Nutr* **23**: 423-433 (2004).
243. Kedar S., Kaplan M., Pavlotzky E. Coleman R., Hayek T., Hamoud S. and **Aviram M.** Aldosterone administration to mice stimulates macrophage NADPH oxidase and increases atherosclerosis development: a possible role for angiotensin-converting enzyme and the receptors for angiotensin II and aldosterone. *Circulation* **109**: 2213-2220 (2004).
244. Fuhrman B., Shiner M, Volkova N. and **Aviram M.** Cell-induced copper ion-mediated low density lipoprotein oxidation increases during in vivo monocyte-to-macrophage differentiation. *Free Radic Biol Med* **37**: 259-271 (2004).
245. Shiner M., Fuhrman B. and **Aviram M.** Paraoxonase 2 (PON2) expression is upregulated via a reduced-nicotinamide-adenine-dinucleotide-phosphate (NADPH)-oxidase-dependent mechanism during monocytes differentiation into macrophages. *Free Radic Biol Med* **37**: 2052-2063 (2004).
246. Fuhrman B., Partoush A. and **Aviram M.** Acetylcholine esterase protects LDL against oxidation. *Biochem. Biophys. Res. Commun* **322**: 974-978 (2004).
247. Rosenblat M., Vaya J., Shih D. and **Aviram M.** Paraoxonase 1 (PON1) enhances HDL-mediated macrophage cholesterol efflux via the ABCA1 transporter in association with increased HDL binding to the cells: a possible role for lysophosphatidylcholine. *Atherosclerosis* **179**:69-77 (2005).
248. Rozenberg O., Shih D. and **Aviram M.** Paraoxonase 1 (PON1) attenuates macrophage oxidative status: studies in PON1 transfected cells and in PON1 transgenic mice. *Atherosclerosis* **181**: 9-18 (2005).
249. Hayek T., Hussein K., **Aviram M.**, Coleman R., Kedar S., Pavlotzky E., and Kaplan M. Macrophage foam-cell formation in streptozotocin-induced diabetic mice: stimulatory effect of glucose. *Atherosclerosis* **183**: 25-33 (2005).
250. Fuhrman B. Volkova N. and **Aviram M.** Paraoxonase 1 (PON1) is present in postprandial chylomicrons. *Atherosclerosis*. **180**: 55-61(2005).
251. Fuhrman B., Volkova N. and **Aviram M.** Pomegranate juice inhibits oxidized LDL uptake and cholesterol biosynthesis in macrophages. *J Nutr Biochem* **16**:570-576(2005).

252. Azadzoï K.M., Schulman R.N., **Aviram M.** and Siroky M.B. Oxidative stress in arteriogenic erectile dysfunction: prophylactic role of antioxidants. *J. Urol.* **174**: 386-393 (2005).
253. Fuhrman B., Volkova N., Coleman R. and **Aviram M.** Grape powder polyphenols attenuate atherosclerosis development in apolipoprotein E deficient (E0) mice and reduce macrophage atherogenicity. *J Nutr* **135**:722-728 (2005).
254. Shamir R, Hartman C, Karry R , Pavlotzki E, Eliakim R, Lachter J, Swissa A, and **Aviram M.** Paraoxonases (PONs) 1, 2, and 3 are expressed in human and mouse gastrointestinal tract and in Caco-2 cell line: selective secretion of PON1 and PON2. *Free Radic Biol Med* **39**:336- 344 (2005).
255. Blum S, **Aviram M,** Ben-Amotz A, Levy Y. Effect of a Mediterranean Meal on Postprandial Carotenoids, Paraoxonase Activity and C-Reactive Protein Levels. *Ann Nutr Metab* **50** : 20-24 (2005).
256. Szuchman A., **Aviram M.** Khatib S., Snait T and Vaya J. Exogenous N-linoleoyl tyrosine marker as a tool for the characterization of cellular oxidative stress in macrophages. *Free Radic Res* **40**:41-52 (2006).
257. Rosenblat M., Karry R. and **Aviram M.** Paraoxonase 1 (PON1) is a more potent antioxidant and stimulant of macrophage cholesterol efflux, when present in HDL than in lipoprotein-deficient serum: relevance to diabetes. *Atherosclerosis*.**187**: 74-81 (2006).
258. Rosenblat M., Hayek T. and **Aviram M.** Anti-oxidative effects of pomegranate juice (PJ) consumption by diabetic patients on serum and on macrophages. *Atherosclerosis*. **187**: 363-371(2006).
259. Rozenberg O., Howell A. and **Aviram M.** Pomegranate juice sugar fraction reduces macrophage oxidative state, whereas white grape juice sugar fraction increases it. *Atherosclerosis*. 188: 68-76 (2006).
260. Rosenblat M, Gaidukov L, Khersonsky O, Vaya J, Oren R, Tawfik DS, **Aviram M.** The catalytic histidine dyad of high density lipoprotein-associated serum paraoxonase-1 (PON1) is essential for PON1-mediated inhibition of low density lipoprotein oxidation and stimulation of macrophage cholesterol efflux. *J Biol Chem*. **281**: 7657-7665 (2006).
261. Rosenblat M, Volkova N, Coleman M, **Aviram M.** Pomegranate byproduct administration to apolipoprotein e-deficient mice attenuates atherosclerosis development as a result of decreased macrophage oxidative stress and reduced cellular uptake of oxidized low-density lipoprotein. *J Agric Food Chem*. **54**: 1928-1935 (2006).
262. Pantuck A.J., Leppert J.T., Zomorodian N., Aronson W., Hong J. Barnard R.J., Seeram N., Liker H., Wang H., Elashoff R., Heber D., **Aviram M.**, Ignarro L., Belldegrun A. Phase II study of pomegranate juice for men with rising prostate-specific antigen

- following surgery or radiation for prostate cancer. *Clin. Cancer Res.* **12**: 4018-4026 (2006).
263. Fuhrman B. and **Aviram M.** Reply to chow (Grape powder polyphenols and atherosclerosis development). Letter to the Editor *J. Nutr.* **136**: 2273 (2006).
264. Rosenblat M., Oren R. and **Aviram M.** Lysophosphatidylcholine (LPC) attenuates macrophage-mediated oxidation of LDL. *Biochem Biophys Res Commun* **344**: 1271-1277 (2006).
265. Fuhrman B., Volkova N. and **Aviram M.** Postprandial serum triacylglycerols and oxidative stress in mice after consumption of fish oil, soy oil or olive oil: Possible role for paraoxonase-1 triacylglycerol lipase-like activity. *Nutrition.* **22**: 922-930 (2006).
266. Coleman R., Hayek T., Keidar S. and **Aviram M.** A mouse model for human atherosclerosis: long-term histopathological study of lesion development in the aortic arch of apolipoprotein E-deficient (E0) mice. *Acta Histochemica.* **108** (6): 415-424 (2006).
267. Shiner M., Fuhrman B. and **Aviram M.** A biphasic U-shape effect of cellular oxidative stress on the macrophage anti-oxidant paraoxonase 2 (PON2) enzymatic activity. *Biochem. Biophys. Res. Commun.* **349**: 1094 – 1099 (2006).
268. Rozenberg O., **Aviram M.** S-Glutathionylation regulates HDL-associated paraoxonase 1 (PON 1) activity. *Biochem. Biophys. Res. Commun.* **18**: 492-498 (2006).
269. Gaidukov L., Rosenblat M., **Aviram M.** and Tawfik D.S. The 192R/Q polymorphs of serum paraoxonase PON1 differ in HDL binding, lipolactonase stimulation, and cholesterol efflux. *J. Lipid. Res.* **47**: 2492 – 2502 (2006).
270. Asleh R., Miller-Lotan R., **Aviram M.**, Hayek T., Yulish M., Levy J.E., Miller B., Blum S., Milaman U., Shapira C., Levy A.P. Haptoglobin genotype is a regulator of reverse cholesterol transport in diabetes in vitro and in vivo. *Circ Res.* **99**: 1419 – 1425 (2006).
271. Hussein O.A., Gefen Y., Karochero E., Zidan J.M., Karochero E.Y., Luder A.S., Assy N.N., and **Aviram M.** LDL oxidation is associated with increased blood hemoglobin A1c levels in diabetic patients. *Clin Chem Acta* **377**: 114 -118 (2007).
272. Fabrizzio R.L., Bonomini F., Rezzani R., Tengattini S., Hayek T., **Aviram M.**, Keidar S., Coleman R. and Bianchi R. Atherosclerosis and the protective role played by different proteins in apolipoprotein E-deficient mice. *Acta Histochem.* **109**:45-51 (2007).
273. Hayek T., Kaplan M., Karry R. and **Aviram M.** Macrophage NADPH oxidase activation, impaired cholesterol fluxes, and increased cholesterol biosynthesis in diabetic mice: a stimulatory role for D-glucose. *Atherosclerosis* **195**: 277-286 (2007).

274. Fuhrman B., Plat D., Herzog Y. and **Aviram M.** Consumption of a novel dietary formula of plant sterol esters of canola oil fatty acids, in a canola oil matrix containing 1,3-diacylglycerol, reduces oxidative stress in atherosclerotic apolipoprotein E-deficient mice. *J Agric Food Chem.* **55**: 2028 – 2033 (2007).
275. Bickel A. Drobot A., **Aviram M.**, Eitan A. Validation and reduction of the oxidative stress following laparoscopic operations: a prospective randomized controlled study. *Ann. Surg.* **245**: 31-35 (2007).
276. Shiner M., Fuhrman B. and **Aviram M.** Macrophage paraoxonase 2 (PON2) expression is up-regulated by pomegranate juice phenolic anti-oxidants via PPAR gamma and AP-1 pathway activation. *Atherosclerosis.* **195**: 313-321 (2007).
277. Rosenblat M., Volkova N. Coleman R and **Aviram M.** Anti-oxidant and anti-atherogenic properties of liposomal glutathione: studies in vitro, and in the atherosclerotic apolipoprotein E-deficient mice. *Atherosclerosis* **195**: e 61- 68 (2007).
278. Fuhrman B., Nitzan O., Karry R., Volkova N., Dumler I. and **Aviram M.** Urokinase plasminogen activator (uPA) stimulates cholesterol biosynthesis in macrophages through activation of SREBP-1 in a PI3-kinase and MEK-dependent manner. *Atherosclerosis* **195**: e108-e116 (2007).
279. Shiner M., Fuhrman B., **Aviram M.** Macrophage paraoxonase 2 (PON2) expression is upregulated by unesterified cholesterol through activation of the phosphatidylinositol 3-kinase (PI3K) pathway. *Biol Chem.* **388**: 1353-1358 (2007).
280. Tzulker R., Glazer I., Bar-Ilan I., Holland D., **Aviram M.** and Amir R. Antioxidant activity, polyphenol content, and related compounds in different fruit juices and homogenates prepared from 29 different pomegranate accessions. *J Agric Food Chem* **55**: 9559-9570 (2007).
281. Rodella L.F., Bonomini F., Rezzani R., Tengattini S., Hayek T., **Aviram M.**, Keidar S. Coleman R. and Bianchi R. Atherosclerosis and protective role played by different proteins in apolipoprotein E-deficient mice. *Acta histochemica.* **109**: 45-51 (2007).
282. Szuchman A., **Aviram M.**, Musa R., Khastib S. and Vaya J. Characterization of oxidative stress in blood from diabetic vs. hypercholesterolaemic patients, using a novel synthesized marker. *Biomarkers.* **13**: 119-131 (2008).
283. Fuhrman B., Partoush A., Volkova N. and **Aviram M.** Ox-LDL induces monocyte-to-macrophage differentiation in vivo: Possible role for the macrophage colony stimulating factor receptor (M-CSF-R). *Atherosclerosis* **196**: 598-607 (2008).
284. **Aviram M.**, Volkova N., Coleman R., Reddy M.K., Ferreira D. and Rosenblat M. Pomegranate phenolics from the peels, arils, and flowers are antiatherogenic: studies in vivo in atherosclerotic apolipoprotein e-deficient (E 0) mice and in vitro in cultured macrophages and lipoproteins. *J Agric Food Chem.* **56**: 1148-1157 (2008).

285. Seeram N.P., **Aviram M.**, Zhang Y., Henning S.M., Feng L., Dreher M. and Heber D. Comparison of Antioxidant Potency of Commonly Consumed Polyphenol-Rich Beverages in the United States. *J. Agric Food. Chem.* **56**: 1415-1422 (2008).
286. Rozenberg O. Shiner M., **Aviram M.** and Hayek T. Paraoxonase 1 (PON1) attenuates diabetes development in mice through its antioxidative properties. *Free Radic. Biol. Med.* **44**: 1951-1959 (2008).
287. Rosenblat M., Volkova N., Coleman R., Almagor Y. and **Aviram M.** Antiatherogenicity of extra virgin olive oil and its enrichment with green tea polyphenols in the atherosclerotic apolipoprotein E-deficient mice: enhanced macrophage cholesterol efflux. *J Nutr Biochem* **19**: 514-523 (2008).
288. Tavori H, Khatib S., **Aviram M** and Vaya J. Characterization of the PON1 active site using modeling simulation, in relation to PON1 lactonase activity. *Bioorg Med Chem.* **16**: 7504-7509 (2008).
289. Kaplan M., Karry R., **Aviram M.** and Hayek T. High glucose concentration increases macrophage cholesterol biosynthesis in diabetes through activation of the sterol regulatory element binding protein 1 (SREBP1): inhibitory effect of insulin. *J Cardiovasc Pharmacol.* **52**:324 - 332 (2008).
290. Fuhrman B., Khatieb J., Shiner M., Nitzan O., Karry R., Volkova N. and **Aviram M.** Urokinase plasminogen activator upregulates paraoxonase 2 expression in macrophages via an NADPH oxidase-dependent mechanism. *Arterioscl. Thromb. Vasc. Biol.* **28**: 1361 - 1367 (2008).
291. Haber A., Mahammed A., Fuhrman B., Volkova N., Coleman R., Hayiek T., **Aviram M***. and Gross Z*. Amphiphilic/bipolar metallocorroles that catalyze the decomposition of reactive oxygen and nitrogen species, rescue lipoproteins from oxidative damage, and attenuate atherosclerosis in mice. *Angewadte Chemie.* **47**:7896 – 7900 (2008).
292. Asleh R., Blum S., Kalet-Litman S., Alsheik J., Miller-Loatam R., Asaf R., Rock W., **Aviram M.**, Milman U., Shapira C., Abassi Z., Levy A.P. Correction of HDL dysfunction in individuals with Diabetes and the Haptoglobin 2-2 genotype. *Diabetes.* **57**: 2794 – 2800 (2008).
293. Rock W., Rosenblat M., Miller-Lotan R, Levy A.P., Elias M. and **Aviram M.** Consumption of wonderful variety pomegranate juice (PJ) and extract (POMxl) by diabetic patients increases paraoxonase 1 (PON 1) association with HDL and stimulates its catalytic activities. *J. Agric Food Chem.* **56**: 8704 -8713 (2008).
294. Efrat M. and **Aviram M.** Macrophage paraoxonase 1 (PON1) binding sites. *Biochem. Biophys. Res. Commun.* **376**:105-110 (2008).

295. Borochoy-Neori H., Judeinstein S., Greenberg A., Fuhrman B., Attias J., Volkova N., Hayek T. and **Aviram M.** Phenolic antioxidants and anti-atherogenic effects of marula (*Sclerocarya birrea* subsp. Caffre) fruit juice in healthy humans. *J. Agric Food Chem.* **56**: 9884 -9891 (2008).
296. Efrat M., Rosenblat M., Mahmood S., Vaya J., **Aviram M.** Di-oleoyl phosphatidylcholine (PC-18:1) stimulates paraoxonase 1 (PON1) enzymatic and biological activities: In vitro and in vivo studies. *Atherosclerosis* **202**:461-469 (2009).
297. Hascalovici JR, Song W, Vaya J, Khatib S, Fuhrman B, **Aviram M**, Schipper HM. Impact of heme oxygenase-1 on cholesterol synthesis, cholesterol efflux and oxysterol formation in cultured astroglia. *J Neurochem.* **108**: 72-81(2009).
298. Tavori H., **Aviram M.**, Musa R., Khatib S., Vaya J. Human carotid atherosclerotic lesion increases oxidation of macrophages and LDL, whereas paraoxonase 1 (PON1) decreases such atherogenic effects. *Free. Radic. Biol. Med.* **46**:607-615 (2009).
299. Nasser N.J., Kaplan M, Nevo and **Aviram M** Lipid Profile and Serum Characteristics of the blind subterranean mole rat, Sapalax. *Plos One* **4**:e4528 (2009).
300. Rosenblat M, Coleman R, Reddy ST, **Aviram M.** Paraoxonase 2 attenuates macrophage triglyceride accumulation via inhibition of diacylglycerol acyltransferase 1. *J Lipid Res* **50**: 870-879 (2009).
301. Davidson MH., Maki KC., Dicklin MR.,Feinstein SB., Witchger MS., Bell M., DeLemos J., Provost JC., Liker H, and **Aviram M.** Effects of Consumption of Pomegranate Juice on Carotid Intima-Media Thickness in Men and Women at Moderate Risk for Coronary Heart Disease. *Am j Cardiol.* **104**: 936-942 (2009).
302. Fuhrman B., Gantman A., Khateeb J., Volkova N., Horke S., Kivan J., Dumler I., and **Aviram M.** Urokinase activates macrophage PON2 gene transcription via the PI3K/ROS/MEK/SREBP-2 signaling cascade mediated by the PDGFR-beta. *Cardiovasc. Res.* **84**: 145-154 (2009).
303. Khersonsky O., Rosenblat M., Toker L., Yacobson S., Hugenmatter A., Silman I., Sussman J.L., **Aviram M.**, and Tawfik D.S. Directed evolution of serum paraoxonase PON3 by family shuffling and ancestor/consensus mutagenesis, and its biochemical characterization. *Biochemistry.* **48**:6644-6654 (2009).
304. Rock W, Rosenblat M, Borochoy-Neori H, Volkova N, Judeinstein S, Elias M, **Aviram M.** Effects of date (*Phoenix dactylifera* L., Medjool or Hallawi Variety) consumption by healthy subjects on serum glucose and lipid levels and on serum oxidative status: a pilot study. *J Agric Food Chem.* **57**:8010-17 (2009).

305. Wilund KR, Rosenblat M, Chung HR, Volkova N, Kaplan M, Woods JA, **Aviram M**. Macrophages from alpha 7 nicotinic acetylcholine receptor knockout mice demonstrate increased cholesterol accumulation and decreased cellular paraoxonase expression: a possible link between the nervous system and atherosclerosis development. *Biochem. Biophys. Res. Commun.* **390**: 148-154 (2009).
306. Hanin-Avraham N, Fuhrman B, Mech-Dorosz A, Kolusheva S, Porgador A, **Aviram M**, Jelinek R. Lipoprotein interactions with chromatic membranes as a novel marker for oxidative stress-related diseases. *Biochim Biophys Acta.* **1788**:2436-2443 (2009).
307. Gaidukov L., Viji R.I., Yacobson S., Rosenblat M., **Aviram M.** and Tawfik D.S. Apo E induces serum paraoxonase PON1 activity and stability similar to Apo A-I. *Biochemistry* **49**: 532-538 (2010).
308. Gantman A., Fuhrman B., **Aviram M.** and Hayek T. High glucose stimulates macrophage SR-BI expression and induces a switch in its activity from cholesterol efflux to cholesterol influx. *Biochem. Biophys. Res. Commun.* **391**: 523-528 (2010).
309. Khatteb J, Gantman A., Kreitenberg A.J., **Aviram M.**, Fuhrman B. Paraoxonase 1 (PON 1) expression in hepatocytes is upregulated by pomegranate polyphenols: A role for PPAR-gamma pathway. *Atherosclerosis* **208**: 119-125 (2010).
310. Fuhrman B., Volkova N., and **Aviram M.** Pomegranate juice polyphenols increase recombinant paraoxonase-1 binding to high-density lipoprotein: Studies in vitro and in diabetic patients. *Nutrition* **26**: 359-366 (2010).
311. Bonomini F., Filippin F., Hayek T., **Aviram M.**, Keidar S., Rodella L., Coleman R., Rezzani R. Apolipoprotein E and its role in aging and survival. *Exp Gerontol.* **45**: 149-157 (2010).
312. Meilin E, **Aviram M**, and Hayek T. Paraoxonase 2 (PON2) decreases high glucose-induced macrophage triglycerides (TG) accumulation, via inhibition of NADPH-oxidase and DGAT1 activity: Studies in PON2-deficient mice. *Atherosclerosis* **208**: 390-395 (2010).
316. Kaplan M., Tendler Y, Mahamid R, Shiner M, **Aviram M.**, Hayek T. High glucose up-regulates C-reactive protein production in macrophages. *Clin Chem.* 2010.
317. Rosenblat M, Volkova N, Roqueta–Rivera M, Nakamura TM and **AviramM.** Increased macrophage cholesterol biosynthesis and decreased cellular paraoxonase2 (PON2) expression in Delta6-desaturase knockout (6-DS KO) mice: beneficial effects of arachidonic acid. *Atherosclerosis* (2010, in press).

318. Gamliel-Lazarovich A., Gantman A., Shiner M., coleman R., **Aviram.**, Keidar S. Paraoxonase 1 deficiency in mice is associated with reduced steroid biosynthesis: effects on HDL binding, cholesteryl ester accumulation and scavenger receptor type BI expression. *Atherosclerosis* (2010, in press).
319. Fuhrman B., Gantman A, **Aviram M.** Paraoxonase 1 (PON1) deficiency in mice is associated with reduced expression of macrophage SR-BI and consequently the loss of HDL cytoprotection against apoptosis. *Atherosclerosis* (2010, in press).
320. O'Doherty A., **Aviram M.** and Obreien T. Atheroprotection of the apo E ^{-/-} aorta by AAV-mediated gene therapy with paraoxonase 1 (PON1), *Human Gene Therapy* (2010, in press).
321. Rosenblat M, Volkova N, **Aviram M.** Pomegranate juice (PJ) consumption antioxidative properties on mouse macrophages, but not PJ beneficial effects on macrophage cholesterol and triglyceride metabolism, are mediated via PJ-induced stimulation of macrophage PON2. *Atherosclerosis* (2010, in press).

Review Papers

1. **Aviram M.** and J.G. Brook. Platelet activation by plasma lipoproteins. *Prog Cardiovasc Dis* **30**:61-72 (1987).
2. Brook J.G, and **M. Aviram**. Platelet lipoprotein Interaction. *Semin Thromb Hemost* **14**: 258-265 (1988).
3. **Aviram M.** The effect of platelets on macrophage lipoprotein metabolism. *Atherosclerosis* **73**: 269-271 (1988).
4. **Aviram M.** Platelets and arterial wall lesion In: *Curr Opin Lipidol* Atherosclerosis: cell biology and lipoproteins. Coetzee G.A. and van der Westhuyzen D.R. (Eds.) **3**: 344- 348 (1992).
5. Keidar S., Brook J.G., **Aviram M.** Angiotensin II enhances lipid peroxidation of low density lipoprotein. *N Physiol Sci (NIPS)* **8**:245-248 (1993).
6. **Aviram M.** Modified forms of low density lipoprotein and atherosclerosis. *Atherosclerosis* **98**: 1-9 (1993).
7. **Aviram M.** Antioxidant-mediated inhibition of macrophage modification of low density lipoprotein. *Life Chemistry Reports* **12**: 69-78 (1994).
8. **Aviram M.** Oxidative modification of low density lipoprotein and its relation to atherosclerosis.. *Isr J Med Sci* **31**: 241-249 (1995).
9. **Aviram M.** LDL-platelet interaction under oxidative stress induces macrophage foam cell formation. *Thromb Hemost* **74**: 560-564 (1995).
10. **Aviram M.** LDL oxidation by macrophage contributes to foam cell formation. *Acta Angiologica* **1**: 103-110 (1995).
11. **Aviram M.** Interaction of oxidized low density lipoprotein with macrophages in atherosclerosis, and the antiatherogenicity of antioxidants. *Eur J Clin Chem Clin Biochem* **34**: 599-608 (1996).
12. **Aviram M.,** Hussein O., Rosenblat M., Schlezinger S., Hayek T. and Keidar S. Interactions of platelets, macrophages, and lipoproteins in hypercholesterolemia: antiatherogenic effects of HMG-CoA reductase inhibitor therapy. *J Cardiovasc Pharmacol* **31**:39-45 (1998).
13. **Aviram M.** and Fuhrman B. LDL oxidation by arterial wall macrophages depends on the oxidative status in the lipoprotein and in the cells: role of prooxidants vs. antioxidants. *Mol Cell Biochem* **188**: 149-159 (1998).

14. **Aviram M.** and Fuhrman B. Polyphenolic flavonoids inhibit macrophage-mediated oxidation of LDL and attenuate atherogenesis. *Atherosclerosis* **137**:S45-S50 (1998).
15. **Aviram M.** Macrophage-mediated oxidation of LDL, antioxidants, and atherosclerosis. *J Isr Heart Soc* **8**: 6-8 (1998).
16. Aviram M. Antioxidants in restenosis and atherosclerosis. *Curr Interven Card Rep* **1**: 66-78 (1999).
17. **Aviram M.** Does paraoxonase play a role in susceptibility to cardiovascular disease? *Mol Med Today* **5**:381-386 (1999).
18. **Aviram M.** Macrophage foam cell formation during early atherogenesis is determined by the balance between pro-oxidants and anti-oxidants in arterial cells and blood lipoproteins. *Antioxid Redox Signal* **1**:585-594 (1999).
19. Kaplan M and **Aviram M.** Oxidized low density lipoprotein: atherogenic and proinflammatory characteristics during macrophage foam cell formation. An inhibitory role for nutritional antioxidants and serum paraoxonase. *Clin Chem Lab Med* **37** :777-787 (1999).
20. **Aviram M.** Paraoxonase protects lipoproteins from oxidation and attenuates atherosclerosis. *Aterosckleroza* **4**: 3-7 (2000).
21. **Aviram M.** Paraoksonaza: a podatnosc na choroby ukladu sercow naczyniowego. *Czynniki Ryzyka* **4**: 8-15 (2000).
22. **Aviram M.** Review of human studies on oxidative damage and antioxidant protection related to cardiovascular diseases. *Free Radic Res* **33**: S85-S97 (2000).
23. **Aviram M.** and Vaya J. Markers for low-density lipoprotein oxidation.. *Methods in Enzymol* **335**: 244-256 (2001).
24. Fuhrman B. and **Aviram M.** Flavonoids protect LDL from oxidation and attenuate atherosclerosis. *Curr Opin Lipidol* **12**: 41-48 (2001).
25. Fuhrman B. and **Aviram M.** Antiatherogenicity of nutritional antioxidants. *IDrugs* **4**: 82-92 (2001).
26. Vaya J. and **Aviram M.** Nutritional antioxidants: Mechanisms of action, analyses of activities and medical application. *Curr Med Chem – Imm Endoc Metab Agents* **1**: 99-117 (2001).
27. Kaplan M. and **Aviram M.** Extracellular matrix (ECM) contributes to macrophage foam cell formation and atherosclerosis. *Acta Angiol* **7**:55-62 (2001).

28. **Aviram M** and Rosenblat M. Macrophage oxysterols enhance cell-mediated oxidation of LDL: role for NADPH oxidase and for reduced glutathione (GSH) decrement. *International Atherosclerosis Society Commentary* March ,9 ,2002 (www.athero.org).
29. **Aviram M.**, Dornfeld L., Kaplan M., Coleman R., Gaitini D., Nitecki S., Hofman A., Rosenblat M., Volkova N., Presser D., Attias J., Hayek T. and Fuhrman B. Pomegranate juice flavonoids inhibit low-density lipoprotein oxidation and cardiovascular diseases: studies in atherosclerotic mice and in humans. *Drugs Ex Clin Res* **28**: 49-62 (2002).
30. **Aviram M.** Macrophage enrichment with the licorice root isoflavan glabridin inhibits NADPH-oxidase activation of cell signaling and attenuates cell-mediated oxidation of LDL and atherosclerosis. *Free Radical Research* **36** (Supplement 1): 49-51 (2002).
31. Coleman R., Hayek t., Keidar S. and **Aviram M.** Atherosclerosis: The apolipoprotein E-deficient mouse model revisited. *Microscopy and Microanalysis* **8** (Supplement 2) 944 (2002).
32. **Aviram M.** Dietary tomatoes' lycopene reduces heart diseases. *Free Radical Research* **36** (Supplement 1): 70-71 (2002).
33. **Aviram M.** Pomegranate juice as a major source for polyphenolic flavonoids and it is most potent antioxidant against LDL oxidation and atherosclerosis. *Free Radical Research* **36** (Supplement 1): 71-72 (2002).
34. **Aviram M.**, Fuhrman B., Rosenblat M., Volkova N., Kaplan M., Hayek T., Presser D., Attias J., Gaitini D., Nitecki S., Hoffman A. and Dornfeld L. Pomegranate juice polyphenols decreases oxidative stress, low-density lipoprotein atherogenic modifications and atherosclerosis. *Free Radical Research* **36** (Supplement 1): 72-73 (2002).
35. **Aviram M.** Red wine and white wine flavonoid antioxidant against LDL oxidation and cardiovascular disease. *Free Radical Research* **36** (Supplement 1): 73-75 (2002).
36. **Aviram M.** Dietary antioxidants stimulate the expression of paraoxonases which provides protection against atherosclerosis development. *Current Topics in Nutraceutical Research* **3**: 161-169 (2003).
37. **Aviram M.** Lipid peroxidation and atherosclerosis: the importance of selected patient group analysis. *Isr Med Assoc J* **5**: 734-735 (2003).
38. **Aviram M** and Rosenblat M. Paraonxases expression in macrophages: effect of oxidative stress. *International Atherosclerosis Society Commentary* June 5, 2003 (www.athero.org).
39. Rosenblat M., Hayek T., Hussein K and **Aviram M.** Atorvastatin therapy increases monocyte/macrophage paraoxonase 2 expression and reduces oxidative stress in hypercholesterolemic patients. *Letters in Drug Design and Discovery (LDDD)*. **1**: 269-274 (2004).

40. Kaplan M. and **Aviram M.** Red wine administration to apolipoprotein E-deficient mice reduces their macrophage-derived extracellular matrix atherogenic properties. *Biol. Res.* **37**: 239-245 (2004).
41. **Aviram M.** Introduction to the serial review on paraoxonases, oxidative stress, and cardiovascular diseases. *Free Radic. Biol. Med.* **37**: 1301-1303 (2004).
42. **Aviram M** and Rosenblat M. Paraoxonases 1, 2, and 3, oxidative stress, and macrophage foam cell formation during atherosclerosis development. *Free Radic. Biol. Med.* **37**: 1304 – 1316 (2004).
43. **Aviram M.** Pomegranate, an Asian-mediterranean plant is a most potent protector against cardiovascular diseases. *Asia-Pacific Biotech News (APBN)*. **8**: 1293-1297 (2004).
44. Fuhrman B and **Aviram M.** Dietary licorice root antioxidants reduce heart diseases. *Asia-Pacific Biotech News (APBN)*. **8**: 1303-1305 (2004).
45. Rosenblat M. and **Aviram M.** Nutritional, pharmacological and metabolic influences on paraoxonase, *Curr. Opin. Lipidol.* **16**: 393-399 (2005).
46. **Aviram M.** HDL--associated paraoxonase 1 (PON1) and dietary antioxidants attenuate lipoprotein oxidation, macrophage foam cells formation and atherosclerosis development. *Pathophysiol Haemost Thromb.* **35**: 146-151 (2006).
47. Coleman R. and **Aviram M.** The Contribution of the Apolipoprotein E-Deficient Mouse Model to Our Understanding of the Histopathology of Atherosclerotic Lesion Development. *International Atherosclerosis Society Commentary* April 2007 (www.athero.org).
48. **Aviram M.** Atherosclerotic plaque development is attenuated by statins or antioxidants therapy: effects on serum lipoproteins quantity, as well as quality. In: Hyperlipidemia and Cardiovascular Diseases. *Curr. Opin. Lipidol.* **18**: 473-475 (2007).
49. **Aviram M.** Nutritional antioxidants and HDL-associated paraoxonase protect against development of atherosclerosis. *Clin. Invest. Arterioscler.* **5**:24-27 (2007).
50. Rosenblat M. and **Aviram M.** Paraoxonases role in the prevention of Cardiovascular Diseases. *BioFactors* **35**: 98-104(2009).
51. **Aviram M.** Hyperlipidaemia and cardiovascular disease: inflammation and oxidative stress in diabetic patients. *Curr. Opin. Lipidol.* **20**:258-9 (2009).
52. **Aviram M.** Atherosclerosis: cell biology and lipoproteins – Oxidative Stress and Paraoxonases (PONs) regulate Atherogenesis. *Curr. Opin. Lipidol.* **21**: 163-4 (2010).

Chapters in Books

1. Lian J.B., **M. Aviram**, M. Skinner, A.S. Cohen, and R.S. Lees. The dissociation of secondary amyloid fibrils into constituents related to serum amyloid protein and apolipoprotein. In: Proceedings of the Third Symposium on Amyloidosis (G.C. Glenner, P.P.Costa and A.F.Freitas, Eds). Excerpta Medica, Amsterdam. *Amyloid and Amyloidosis* 288-298 (1980).
2. Levy Y., A. Shamiss, **M. Aviram**, A. Epstein, and J.G. Brook. The effect of diet versus drug treatment in patients with type IV hyperlipoproteinemia. In: *Advances in Diet and Nutrition* (C. Horwitz, ed). London: John Libbey, 207-210 (1985).
3. Cogan U., S. Mokady, G. Dreifus, **M. Aviram** and J.G. Brook. Plasma lipids and lipoproteins in rabbits fed vegetarian protein diets. In: *Advances in Diet and Nutrition*. (C. Horwitz, Ed). London: John Libbey, 49-51 (1985).
4. Oram J.F., J.P. Slotte, **M. Aviram**, P.B. Duell, and E.L. Bierman. The role of HDL apolipoproteins in selective transport of excess intracellular cholesterol from cells. *Atherosclerosis VIII*. (Crepaldi, Gotto, Manzato, Baggio, eds). Excerpta Medica, 245-248 (1989).
5. **Aviram M.** Effect of lipoproteins and platelets on macrophage cholesterol metabolism. In: *Blood Cell Biochemistry* Vol 2: Megakaryocytes, Platelets, Macrophages and Eosinophils (Harris, J.R. ,Ed). Plenum Publishing Co. N.Y. Chapter 7:179-208 (1991).
6. **Aviram M.**, and J.G. Brook. Platelet enhancement of macrophage cholesterol accumulation a novel mechanism for atherogenesis. *Molecular Biology of Atherosclerosis* Proceeding of the 57th European Atherosclerosis Society Meeting. (M.J.Halpern, ed.). John Libbey and Company Limited, London, Chapter 14, pp. 67-71, (1992).
7. **Aviram M.**, B. Fuhrman, and J.G. Brook. Platelet- mediated macrophage cholesterol accumulation. *Atherosclerosis IX* , Proceedings of the ninth International Symposium on Atherosclerosis Rosemont-Chicago IL. USA (Stein O., Eisenberg S. ad Stein Y., eds.). R and L Creative Communications Ltd, Tel-Aviv Israel. Chapter VI. Thrombosis and Hemodynamics pp. 523-526 (1992).
8. **Aviram M.** "Beyond cholesterol: Modifications of lipoproteins and increased atherogenicity". In: *Atherosclerosis, Inflammation and Thrombosis* (G.G. Neri Serneri, G.F. Gensini, R. Aband D. Prisco., eds.). Scientific PresFlorence, Italy. pp. 15-36 (1993).
9. Hochberg Z., Pollack S. and **Aviram M.** Resistance to insulin like growth factor - I in Turner Syndrome. In: *Basic and Clinical Approach to Turner Syndrome* (Hibi I. and Takano K., eds.) Proceedings of the 3rd International Symposium on Turner Syndrome, Chiba, Japan. Excerpta Medica, Tokyo. pp. 233-237 (1993).

10. **Aviram M.** LDL modifications by phospholipases increase macrophage cholesterol accumulation. *Advances in Lipoprotein and Atherosclerosis Research, Diagnostics and Treatment*. Proceedings of the 8th International Dresden Lipid Symposium. Gustav Fischer. 28- 33 (1994).
11. **Aviram M.** Macrophage-mediated oxidation of low density lipoprotein and atherosclerosis. In: *Free Radicals Lipoprotein Oxidation and Atherosclerosis: Biological and Clinical Aspects* (G. Finardi G., and Rice-Evans C., eds.) Volume IX. Richelieu Press, London, U.K. p.p. 101-137 (1995).
12. **Aviram M.** Macrophages, LDL oxidation and atherosclerosis. In: *Atherosclerosis XI*, Proceedings of the XI International Symposium on Atherosclerosis. Paris, France Elsevier, Amsterdam, Eds. B. Jacotot, D. Mathe and J. C. Fruchart pp.483-492 (1998).
13. **Aviram M.** Anti-atherogenicity of antioxidants against LDL oxidation In: *Natural Antioxidants and Anticarcinogenesis in Nutrition, Health and Disease*. Eds. Kumpulainen J.T. and Salonen J.T. Royal Society of Chemistry, Cambridge, U.K. pp. 9-19 (1999).
14. Fuhrman B., Elis A., and **Aviram M.** Antiatherogenic effects of lycopene and β -carotene: inhibition of LDL oxidation, and suppression of cellular cholesterol synthesis. In: *Natural Antioxidants and Anticarcinogenesis in Nutrition, Health and Disease* Eds. Kumpulainen J.T. and Salonen J.T. Royal Society of Chemistry, Cambridge, U.K. pp. 226-230 (1999).
15. **Aviram M.**, Aviram R and Fuhrman B. Antiatherogenicity and antioxidative properties of polyphenolic flavonoids. In: *Natural Antioxidants and Anticarcinogenesis in Nutrition Health and Disease*. Eds. Kumpulainen J.T. and Salonen J.T. Royal Society of Chemistry, Cambridge, U.K. pp. 106-113 (1999).
16. Fuhrman B., Vaya J., Belinky PA., and **Aviram M.** The isoflavan glabridin inhibits LDL oxidation: Structural and mechanistic aspects. In: *Natural Antioxidants and Anticarcinogenesis in Nutrition, Health and Disease*. Eds. Kumpulainen J.T. and Salonen J.T. Royal Society of Chemistry, Cambridge, U.K. pp. 161-165 (1999).
17. **Aviram M.** Oxidized LDL and atherosclerosis: Role of antioxidants and of paraoxonase. In: *Advances in Lipoprotein and Atherosclerosis Research, Diagnostics and Treatment*. Proceedings of the 10 th International Dresden Lipid Symposium. Eds. Jaross W., Hanefeld M., Bergmann S and Menschikowski M., Dresden, Germany pp. 93-98 (1999).
18. Fuhrman B. and **Aviram M.** Polyphenols and flavonoids protects LDL against atherogenic modifications. In: *Handbook of Antioxidants Biochemical, Nutritional and Clinical Aspects*, 2nd Edition. Cadenas E & Packer L (Eds.) Marcel Dekker, NY(Pub.). 16:303-336 (2001).

19. **Aviram M.** Lycopene and cardiovascular diseases. Media Relation Inc. Press, Minneapolis, MN, USA (2001).
20. **Aviram M.** and Fuhrman B. Wine flavonoids protect against LDL oxidation and atherosclerosis. In: *Alcohol and Wine in health and disease*. Annals of the New York Academy of Sciences. Ed. Dipak K Das and Fulvio Ursini 957: 146-161 (2002).
21. Fuhrman B, and **Aviram M.** Preservation of Paraoxonase activity by wine flavonoids: possible role in protection of LDL from lipid peroxidation. In: *Alcohol and Wine in health and disease*. Annals of the New York Academy of Sciences. Ed. Dipak K Das and Fulvio Ursini 957:321-324 (2002).
22. **Aviram M.** Polyphenols from pomegranate juice, red wine and licorice root protect against lipids peroxidation and attenuate cardiovascular diseases. In: *Polyphenols 2000. XXth International Conference on Polyphenols*, Eds. Martens S., Treutter D and Forkmann G. Freising-Weihenstephan, Germany pp. 158 - 175 (2002).
23. **Aviram M.** Pomegranate juice as a major source for polyphenolic flavonoids and it is most potent antioxidant against LDL oxidation and atherosclerosis. In: *Proceedings of the 11th Biennial Meeting of the Society for Free Radical Research International* (Paris, France, July 16-20, 2002), by Monduzzi Editore S.p.A. – MEDIMOND Inc. pp. 523-528 (2002).
24. **Aviram M.** Oxysterols induced macrophage NADPH oxidase activation, cell-mediated oxidation of LDL and accelerated atherosclerosis In: *Proceedings of the 11th Biennial Meeting of the Society for Free Radical Research International* (Paris, France, July 16-20, 2002), by Monduzzi Editore S.p.A. MEDIMOND Inc pp. 415-421 (2002).
25. **Aviram M.** and Fuhrman B. Wine flavonoids, LDL cholesterol oxidation and atherosclerosis. In: *Wine: a scientific exploration*. Sandler M. and Pinder R M (Eds). Taylor and Francis, London, UK, and NY, USA pp. 140 – 159 (2003).
26. **Aviram M.** and Fuhrman B. Effects of flavonoids on the oxidation of LDL and atherosclerosis. In: *Flavonoids in Health and Disease*, Second Edition Revised and Expanded. Eds. Rice Evans CA& Packer L. Pub. Marcel Dekker, NY pp.165-203 (2003).
27. Fuhrman B., Volkova N., Ben-Dor M. and **Aviram M.** Cellular oxidative stress increases during maturation of macrophages in vivo. Free Radicals and Oxidative Stress: Chemistry, Biochemistry and Pathophysiological Implications In: *Meeting of the Society for Free Radical Research European Section*. (Ioannina, Greece, June 26-29, 2003), Editor: D. Galaris. MEDIMOND Inc. pp.71-77 (2003).
28. **Aviram M** and Rosenblat M. Oxidative stress in Cardiovascular Disease: Role of oxidized Lipoproteins in Macrophage Foam cell formation and Atherosclerosis. In: *Redox Genome Interactions in Health and Disease*. Fuchs J , Podda M and Packer L (Eds). Marcel Dekker, NY (Pub.) pp. 557 – 590 (2003).

29. **Aviram M.**, Vaya J. and Fuhrman B. Licorice root flavonoid antioxidants reduce LDL oxidation and attenuate cardiovascular diseases. In: *Herbal Medicines: Molecular Basis of Biological Activity and Health*, Eds. Packer L., Halliwell B. and Nam Ong C. Pub. Marcel Dekker, NY Ch 27 pp.595-614 (2004).
30. **Aviram M.** Flavonoids-rich nutrients with potent antioxidant activity prevent atherosclerosis development: the licorice example. *International Congress Series, Atherosclerosis XIII*, 1262: 320-327 (2004).
31. Kaplan M. and **Aviram M.** Macrophage – mediated oxidation of LDL and atherogenesis: protective role for paraoxonases: Cellular Dysfunction in Atherosclerosis and Diabetes – Reports from Bench to Bedside *Ed. M. Simionescu., A. Sima and D. Popov, Romanian Academy Publishing House*, Chapter 25, 336-351 (2004).
32. **Aviram M.**, Kaplan M., Rosenblat M. and Fuhrman B. Dietary antioxidants against LDL oxidation and atherosclerosis development: protective role for paraoxonase. In: *Handbook of Experimental Pharmacology (HEP) : Arteriosclerosis; Influence of Diet and Drugs*. Ed. A. von Eckardstein 170: 259-296 (2005).
33. Rosenblat M. and **Aviram M.** Antioxidative properties of pomegranate. In: *Pomegranates: Ancient Roots to Modern Medicine*. Ed. Seeram N, Schulman R, & Heber D., Taylor and Francis. pp. 31- 43 (2006).
34. Fuhrman B. and **Aviram M.** Pomegranate juice protects against cardiovascular diseases. In: *Pomegranates: Ancient Roots to Modern Medicine*. Ed. Seeram N, Schulman R, & Heber D., Taylor and Francis. pp. 63-89 (2006).
35. Rosenblat M., Sapir O. and **Aviram M.** Glucose inactivates paraoxonase 1 (PON1) and displaces it from high density lipoprotein (HDL) to a free PON1 from. In: *The Paraoxonases: Their role in disease development and xenobiotic Metabolism*. Springer. Science, Rotterdam, Netherland. Ed. Mackness M., Mackness B., **Aviram M.** and Paragh G. pp.35-49 (2007).
36. **Aviram M.**, Rosenblat M. and Fuhrman B. Pomegranate phenolic antioxidant activities protect against cardiovascular diseases. In: *Phytochemicals: Aging and Health*. Eds. Meskin MK, Bidlack WR, and Randolph K. Chapter 8. pp.133-152 (2008).
37. **Aviram M.** and Rosenblat M. Paraoxonases (PONs 1, 2, and 3) analyses in vitro and in vivo in relation to cardiovascular disease. In: *Methods in Molecular Biology Series*. 477: 259 – 276 (2008)
38. **Aviram M.** and Rosenblat M. Macrophage foam cell formation and paraoxonases. *Asymptomatic Atherosclerosis: Pathophysiology, Detection and Treatment*. Editor: Naghavi M.,Humana Press/Springer (2010).

39. Efrat M. and **Aviram M.** Paraoxonase1 interactions with HDL, antioxidants and macrophages regulate atherogenesis – A protective role for HDL phospholipids. *Adv Exp. Med. Biol.* 660: 153-166 (2010).
40. Tavori H., Vaya J., and **Aviram M.** Paraoxonase 1 attenuates human plaque atherogenicity: relevance to the enzyme lactonase activity. *Adv. Exp. Me. Biol.* 660: 99-111 (2010).

Appendix

2010

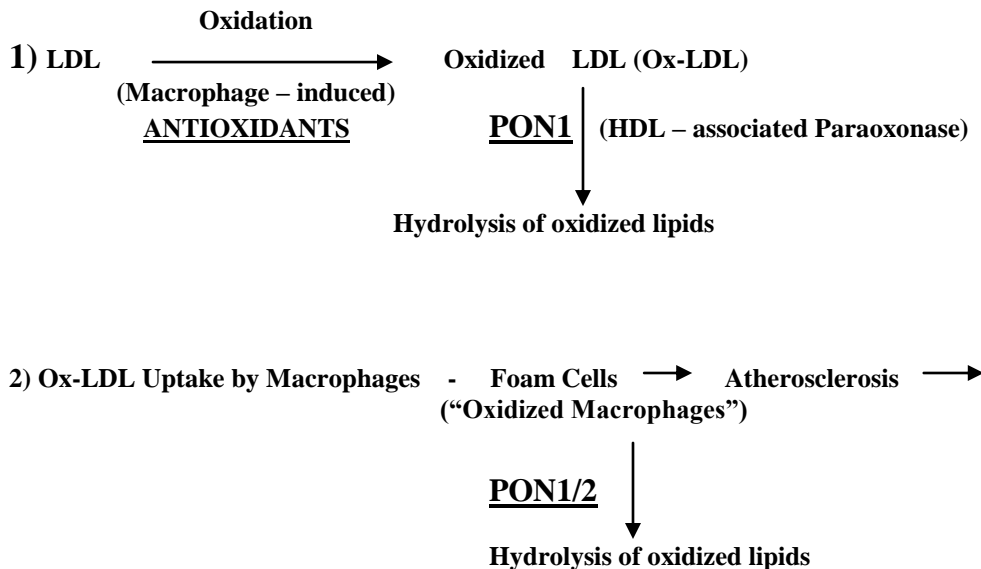
Research Accomplishments

Michael Aviram

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Objective

Revealing the mechanisms behind Macrophage Cholesterol accumulation and Foam Cell formation under Oxidative Stress during Atherogenesis: Role of Dietary Antioxidants and of Paraoxonases (PONs).



Specific Research Areas

* 12,700 Citations of ~ 400 articles

1. Lipoproteins Oxidation and Atherosclerosis (1980 – present)

Oxidative stress is thought to play a key role in the development of atherosclerosis, the major cause of morbidity and mortality in the world. We have shown in atherosclerotic mice and in humans that LDL oxidation, as well as additional lipoprotein modifications contribute to enhanced atherogenicity of LDL. Studies on the mechanisms of oxidized LDL (Ox-LDL) retention to extracellular matrix (ECM) proteoglycans as related to the lipoprotein uptake by the macrophage scavenger receptors, leading to cellular accumulation of cholesterol and oxysterols, are carried out in our laboratory. **Macrophage – mediated oxidation of LDL** and foam cell formation are the hallmark of early atherogenesis, and we have demonstrated the role of cellular oxygenases and oxidases (NADPH oxidase), as well as that of macrophage antioxidants (such as the glutathione system), in LDL oxidation. We have demonstrated that under oxidative stress, not only the lipoproteins are oxidized, but also the cellular lipids. We showed the presence of Ox-LDL and that of **lipid peroxidized macrophages** in the atherosclerotic lesion, and demonstrated that these oxidized cells are able to oxidize LDL even in the absence of transition metal ions. Finally, we have shown **increased LDL oxidation in patients** with increased risk for atherosclerosis development (hypercholesterolemia, hypertension, diabetes, chronic renal failure). Drug therapy in these patients (hypocholesterolemic “statins”, ACE inhibitors, Insulin) reduced the patient’s increased LDL oxidation and atherogenic characteristics.

Representative Publications :

1. **Aviram M.**, S. Lund-Katz, M. Phillips, and A. Chait. The influence of the triglyceride content of low density lipoprotein on the interaction of apolipoprotein B-100 with cells. **J. Biol. Chem.** 263: 16842-16848 (1988).
2. **Aviram M.**, E.L., Bierman, and A. Chait. Modification of low density lipoprotein by lipoprotein lipase or hepatic lipase induces enhanced uptake and cholesterol accumulation in cells. **J. Biol. Chem.** 263:15416-15422 (1988).
3. **Aviram M.**, S. Keidar, M. Rosenblat and J.G. Brook. Rosenblat and G.J. Brook. Reduced uptake of cholesterol esterase-modified low density lipoprotein by macrophages. **J. Biol Chem.** 266: 11567-11574 (1991).
4. **Aviram M.** Low density lipoprotein modification by cholesterol oxidase induces enhanced uptake and cholesterol accumulation in cells. **J. Biol. Chem.** 267:218-225 (1992).
5. **Aviram M.** and I. Maor. Phospholipase D-modified low density lipoprotein is taken up by macrophages at increased rate. A possible role for phosphatidic acid. **J. Clin. Invest.** 91:1942-1952 (1993).
6. Maor I., H. Mandel and **M. Aviram.** Macrophage uptake of oxidized LDL inhibits lysosomal sphingomyelinase, thus causing the accumulation of unesterified cholesterol-sphingomyelin-rich particles in the lysosomes. A possible role for 7-Ketocholesterol. **Arterioscler Thromb Vasc Biol.** 15: 1378-1387 (1995).

7. Maor I., Hayek T., Coleman R. and **Aviram M.** Plasma LDL oxidation leads to its aggregation in the atherosclerotic apolipoprotein E-deficient mice. **Arterioscler. Thromb. Vasc. Biol.** 7:2995-3005 (1997).
8. Kaplan M., Williams K., Mandel H. and **Aviram M.** Role of macrophage glycosaminoglycans in the cellular catabolism of oxidized LDL by macrophages. **Arterioscler. Thromb. Vasc. Biol.** 18:542-553 (1998).
9. Kaplan M and **Aviram M.** Retention of oxidized LDL by extracellular matrix proteoglycans leads to its uptake by macrophages: an alternative approach to study lipoproteins cellular uptake. **Arterioscler. Thromb. Vasc. Biol.** 21 : 386-393 (2001).
10. **Aviram M.** and Vaya J. Markers for low-density lipoprotein oxidation. **Methods in Enzymology** 335: 244-256 (2001).
11. Rosenblat M. and **Aviram M.** Oxysterol-induced activation of macrophage NADPH-oxidase enhances cell-mediated oxidation of LDL in the atherosclerotic apolipoprotein E deficient mouse: inhibitory role for vitamin E. **Atherosclerosis** 160: 69-80 (2002).
12. **Aviram M** and Rosenblat M. Oxidative stress in Cardiovascular Disease: Role of oxidized Lipoproteins in Macrophage Foam cell formation and Atherosclerosis. In: ***Redox Genome Interactions in Health and Disease***. Fuchs J, Podda M and Packer L (Eds). Marcel Dekker, NY (Pub.) pp. 557 – 590 (2004).
13. Hayek T., Hussein K., **Aviram M.**, Coleman R., Kedar S., Pavlotzky E., and Kaplan M. Macrophage foam-cell formation in streptozotocin-induced diabetic mice: stimulatory effect of glucose. **Atherosclerosis** 183: 25-33 (2005).
14. Coleman R., Hayek T., Keidar S. and **Aviram M.** A mouse model for human atherosclerosis: long-term histopathological study of lesion development in the aortic arch of apolipoprotein E-deficient (E0) mice. **Acta Histochemica.** 108: 415-424 (2006).
15. Hayek T., Kaplan M., Karry R. and **Aviram M.** Macrophage NADPH oxidase activation, impaired cholesterol fluxes, and increased cholesterol biosynthesis in diabetic mice: a stimulatory role for D-glucose. **Atherosclerosis** 195: 277-286 (2007).
16. Fuhrman B., Partoush A., Volkova N. and **Aviram M.** Ox-LDL induces monocyte-to-macrophage differentiation in vivo: Possible role for the macrophage colony stimulating factor receptor (M-CSF-R). **Atherosclerosis** 196: 598-607 (2008).
17. Fuhrman B., Gantman A., Khateeb J., Volkova N., Horke S., Kivan J., Dumler I., and **Aviram M.** Urokinase activates macrophage PON2 gene transcription via the PI3K/ROS/MEK/SREBP-2 signaling cascade mediated by the PDGFR-beta. **Cardiovasc. Res.** 84: 145-154 (2009).
18. Rosenblat M, Volkova N, Roqueta-Rivera M, Nakamura MT, **Aviram M.** Increased macrophage cholesterol biosynthesis and decreased cellular paraoxonase2 (PON2) expression in Delta6-desaturase knockout (6-DS KO) mice: beneficial effects of arachidonic acid. **Atherosclerosis.** (2010, in press).

2. Dietary Antioxidants and Atherosclerosis (1990 – present)

Dietary antioxidants that inhibit LDL oxidation can attenuate atherosclerosis development, and we have demonstrated indeed such properties for vitamin E, carotenoids (lycopene, β -carotene), but mainly for polyphenolic flavonoids, such as those found in **pomegranate** (punicalagin, an hydrolyzable tannins), **wine** (quercetin flavonol and resveratrol), **licorice** (glabridin isoflavan), and **olive oil** (oleuropein phenolic). We have provided evidence that the inhibitory effect of some flavonoids on LDL oxidation (and on atherosclerosis development) is related to their interaction with the lipoprotein directly, as well as to their accumulation in arterial macrophages and subsequent inhibition of cellular oxygenases and oxidases.

Representative Publications:

1. Fuhrman B., A. Lavy and **M. Aviram**. Consumption of red wine with meals reduces the susceptibility of human plasma and low-density lipoprotein to lipid peroxidation. **Am. J. Clin. Nutr.** 61: 549-554 (1995).
2. Fuhrman B., Buch S., Vaya J., Belinky P.A., Coleman R., Hayek T. and **Aviram M.** Licorice extract and its major polyphenol glabridin protect low-density lipoprotein against lipid peroxidation: in vitro and ex vivo studies in humans and in atherosclerotic apolipoprotein E-deficient mice. **Am. J. Clin. Nutr.** 66:267-275 (1997).
3. Rosenblat M., Belinky P., Vaya J., Levy R., Hayek T., Coleman R., Merchav S. and **Aviram M.** Macrophage enrichment with the isoflavan glabridin inhibits NADPH oxidase-induced cell-mediated oxidation of low density lipoprotein. A possible role for protein kinase C. **J. Biol. Chem.** 274: 13790-13799 (1999).
4. **Aviram M.**, Dornfeld L., Rosenblat M., Volkova N., Kaplan M., Hayek T., Presser D. and Fuhrman B. Pomegranate juice consumption reduces oxidative stress, atherogenic modifications to LDL, and platelet aggregation: studies in humans and in atherosclerotic apolipoprotein E-deficient mice. **Am. J. Clin. Nutr.** 71: 1062-1076 (2000).
5. Fuhrman B. and **Aviram M.** Flavonoids protect LDL from oxidation and attenuate atherosclerosis. **Curr. Opin. Lipidol.** 12: 41-48 (2001).
6. Rosenblat M., Coleman R. and **Aviram M.** Increased macrophage glutathione content reduces cell-mediated oxidation of LDL and atherosclerosis in apolipoprotein E-deficient mice. **Atherosclerosis** 163: 17-28 (2002).
7. **Aviram M.**, Rosenblat M., Gaitini D., Nitecki S., Hoffman A., Dornfeld L., Volkova N., Presser D., Attias J., Leiker H. and Hayek T. Pomegranate juice consumption for 3 years by patients with carotid artery stenosis reduces common carotid intima-media thickness, blood pressure and LDL oxidation. **Clinical Nutrition** 23:423-433 (2004).
8. Fuhrman B., Volkova N. and **Aviram M.** Pomegranate juice inhibits oxidized LDL uptake and cholesterol biosynthesis in macrophages. **J Nutr Biochem** 16:570-576 (2005).
9. Rosenblat M, Volkova N, Coleman M, **Aviram M.** Pomegranate byproduct administration to apolipoprotein e-deficient mice attenuates atherosclerosis development as a result of decreased macrophage oxidative stress and reduced cellular uptake of oxidized low-density lipoprotein. **J Agric Food Chem.** 54: 1928-1935 (2006).
10. Rozenberg O., Howell A. and **Aviram M.** Pomegranate juice sugar fraction reduces macrophage oxidative state, whereas white grape juice sugar fraction increases it. **Atherosclerosis**. 188: 68-76 (2006).
11. Rosenblat M., Volkova N. Coleman R and **Aviram M.** Anti-oxidant and anti-atherogenic properties of liposomal glutathione: studies in vitro, and in the atherosclerotic apolipoprotein E-deficient mice. **Atherosclerosis** 195: e61-68 (2007).

12. **Aviram M.**, Volkova N., Coleman R., Reddy M.K., Ferreira D. and Rosenblat M. Pomegranate phenolics from the peels, arils, and flowers are antiatherogenic: studies in vivo in atherosclerotic apolipoprotein e-deficient (E 0) mice and in vitro in cultured macrophages and lipoproteins. **J Agric Food Chem.** 56: 1148-1157 (2008).
13. Davidson MH., Maki KC., Dicklin MR., Feinstein SB., Witchger MS., Bell M., DeLemos J., Provost JC., Liker H, and **Aviram M.** Effects of Consumption of Pomegranate Juice on Carotid Intima-Media Thickness in Men and Women at Moderate Risk for Coronary Heart Disease. **Am j Cardiol.** 104: 936-942 (2009).
14. Fuhrman B, Volkova N, **Aviram M.** Pomegranate juice polyphenols increase recombinant paraoxonase-1 binding to high-density lipoprotein: Studies in vitro and in diabetic patients. **Nutrition** 26(4):359-366 (2010)

3. Paraoxonase ,Lipids Peroxidation and Atherosclerosis (1997 – present)

Under excess oxidative stress, antioxidants capability to block the formation of Ox-LDL and cellular oxidized lipids formation may not be sufficient. We have recently demonstrated that **HDL - associated Paraoxonase (PON1)** can hydrolyze oxidized lipids in oxidized lipoproteins, macrophages, and in atherosclerotic lesion, and thus may act as a second line of defense against oxidative stress. Combination of potent antioxidants (some unique flavonoids) together with paraoxonase was shown in our laboratory to attenuate atherogenesis, secondary to reduced oxidative stress and to decreased macrophage uptake of oxidized lipoproteins via the scavenger receptors.

Representative Publications :

1. **Aviram M.**, Rosenblat M., Bisgaier C.L., Newton R.S., Primo-Parmo S.L., and La Du B.N. Paraoxonase inhibits high-density lipoprotein oxidation and preserves its functions. A possible peroxidative role for paraoxonase. **J. Clin. Invest.** 101:1581-1590 (1998).
2. **Aviram M.** Does paraoxonase play a role in susceptibility to cardiovascular disease? **Mol. Med. Today.** 5 (9): 381-386 (1999).
3. **Aviram M.**, Hardak E., Vaya J., Mahmood S., Milo S., Hoffman A., Billecke S.S, Dragonov D. and Rosenblat M. Human serum paraoxonases (PON1) Q and R selectively decrease lipid peroxides in human coronary and carotid atherosclerotic lesions: PON1 esterase and peroxidase-like activities. **Circulation** 101: 2510-2517 (2000).
4. Fuhrman B., Volkova N. and **Aviram M.** Oxidative stress increases the expression of the CD36 scavenger receptor and the cellular uptake of oxidized low-density lipoprotein in macrophages from atherosclerotic mice: protective role of antioxidants and of paraoxonase. **Atherosclerosis.** 161:307-316 (2002).
5. Rozenberg O., Rosenblat M., Coleman R., Shih D.M. and **Aviram M.** Paraoxonase (PON1) deficiency is associated with increased macrophage oxidative stress: studies in PON1-knockout mice **Free Radic Biol Med** 34: 774-784 (2003).
6. Rozenberg O., Shih D.M. and **Aviram M.** Human serum paraoxonase 1 decreases macrophage cholesterol biosynthesis: possible role for its phospholipase-A2-like activity and lysophosphatidylcholine formation. **Arterioscl Thromb Vasc Biol** 23: 461-467 (2003).

7. Rosenblat M., Draganov D., Watson C.E., Bisgaier C.L., La Du B.N. and **Aviram M.** Mouse macrophage paraoxonase 2 activity is increased whereas cellular paraoxonase 3 activity is decreased under oxidative stress. **Arterioscl Thromb Vasc Biol** 23: 468-474 (2003).
8. Rosenblat M., Hayek T., Hussein K and **Aviram M.** Decreased macrophage paraoxonase 2 expression in patients with hypercholesterolemia is the result of their increased cellular cholesterol content: effect of atorvastatin therapy. **Arterioscl Thromb Vasc Biol** 24:175-180 (2004).
9. **Aviram M** and Rosenblat M. Paraoxonases 1, 2, and 3, oxidative stress, and macrophage foam cell formation during atherosclerosis development. **Free Radic. Biol. Med.** 37: 1304 – 1316 (2004).
10. Rosenblat M., Shih D., Vaya J. and **Aviram M.** Paraoxonase 1 (PON1) enhances HDL-mediated macrophage cholesterol efflux via the ABCA1 transporter in association with increased HDL binding to the cells: a possible role for lysophosphatidylcholine. **Atherosclerosis** 179:69-77 (2005).
11. Rozenberg O., Shih D. and **Aviram M.** Paraoxonase 1 (PON1) attenuates macrophage oxidative status: studies in PON1 transfected cells and in PON1 transgenic mice. **Atherosclerosis** 181: 9-18 (2005).
12. Shamir R, Hartman C, Karry R , Pavlotzki E, Eliakim R, Lachter J, Swissa A, and **Aviram M.** Paraoxonases (PONs) 1, 2, and 3 are expressed in human and mouse gastrointestinal tract and in Caco-2 cell line: selective secretion of PON1 and PON2. **Free Radic Biol Med** 39:336- 344 (2005).
13. Rosenblat M, Gaidukov L, Khersonsky O, Vaya J, Oren R, Tawfik DS, **Aviram M.** The catalytic histidine dyad of high density lipoprotein-associated serum paraoxonase-1 (PON1) is essential for PON1-mediated inhibition of low density lipoprotein oxidation and stimulation of macrophage cholesterol efflux. **J. Biol. Chem.** 281: 7657-7665 (2006).
14. Rosenblat M., Karry R. and **Aviram M.** Paraoxonase 1 (PON1) is a more potent antioxidant and stimulant of macrophage cholesterol efflux, when present in HDL than in lipoprotein-deficient serum: relevance to diabetes. **Atherosclerosis**. 187: 74-81 (2006).
15. Shiner M., Fuhrman B. and **Aviram M.** A biphasic U-shape effect of cellular oxidative stress on the macrophage anti-oxidant paraoxonase 2 (PON2) enzymatic activity. **Biochem. Biophys. Res. Commun.** 349: 1094-1099 (2006).
16. Rozenberg O., **Aviram M.** S-Glutathionylation regulates HDL-associated paraoxonase 1 (PON 1) activity. **Biochem. Biophys. Res. Commun.** 18: 492-498 (2006).
17. Fuhrman B., Khateeb J., Shiner M., Nitzan O., Karry R., Volkova N. and **Aviram M.** Urokinase plasminogen activator upregulates paraoxonase 2 expression in macrophages via an NADPH oxidase-dependent mechanism. **Arterioscl. Thromb. Vasc. Biol.** 28:1361-1367 (2008).
18. Rosenblat M, Coleman R, Reddy ST, **Aviram M.** Paraoxonase 2 attenuates macrophage triglyceride accumulation via inhibition of diacylglycerol acyltransferase 1. **J Lipid Res.** 50: 870-879 (2009).
19. Fuhrman B, Gantman A, **Aviram M.** Paraoxonase 1 (PON1) deficiency in mice is associated with reduced expression of macrophage SR-BI and consequently the loss of HDL cytoprotection against apoptosis. **Atherosclerosis** 2010 (in press).