

CURRICULUM VITAE

Ira Tabas, M.D., Ph.D.

Richard J. Stock Professor and Vice-Chair of Research, Department of Medicine
Professor of Pathology & Cell Biology (in Physiology and Cellular Biophysics)
Columbia University

I. Date of preparation

May, 2016

II. Personal data

Name: Ira Abram Tabas

Birth date: April 22, 1953

Birthplace: Philadelphia, Pennsylvania

Citizenship: USA

Office address: Department of Medicine, PH 8East-105F, Columbia University 630 West 168th
Street, New York, NY 10032

Contact information: Tel: 212-305-9430; Fax: 212-305-4834; E-mail: iat1@columbia.edu

III. Academic training

Undergraduate: Tufts University (Medford, MA), 1975, B.S.

Graduate: Washington University (St. Louis, MO), 1981, M.D., Ph.D. (Biochemistry)

Ph.D. Thesis: "The Processing of Asparagine-Linked Oligosaccharides During Glycoprotein
Biosynthesis"; Dr. Stuart Kornfeld, Sponsor

M.D. Licensure: State of New York (#150522)

IV. Traineeship

Internship/Residency: Internal Medicine, Columbia-Presbyterian Medical Center, New York, NY
(1981-1983)

Clinical Fellowship: Endocrinology/Metabolism, Columbia-Presbyterian Medical Center, New York,
NY (1983-1985)

Research Fellowship: Laboratory of Dr. Alan Tall, Department of Medicine, Columbia University,
New York, NY, 1983-1985

V. Board certification

Internal Medicine, 1985

Endocrinology/Metabolism, 1987

VI. Professional organizations and societies

Arteriosclerosis, Thrombosis, and Vascular Biology as Council of the American Heart Association;
Membership/Credentials Committee (1990-1992, 1997-1999); Program Committee (1992-1994;
2000-2002; 2009-present), and Executive Board (2010)

American Society of Biochemists and Molecular Biologists

American Association for the Advancement of Science

American Society for Cell Biology

Society of Leukocyte Biology

New York Lipid Club

Interurban Clinical Club

American Society for Clinical Investigation
Association of American Physicians
American Diabetes Association

VII. Academic appointments

Assistant Professor of Medicine, Columbia University College of Physicians and Surgeons, New York, NY (1985-1992)
Assistant Professor of Anatomy & Cell Biology, Columbia University College of Physicians and Surgeons, New York, NY (1988-1992)
Associate Professor of Medicine and Anatomy & Cell Biology (**Tenured**), Columbia University College of Physicians and Surgeons, New York, NY (1992-1997)
Professor of Medicine and Anatomy & Cell Biology (**Tenured**), Columbia University College of Physicians and Surgeons, New York, NY (1997-present)
Professor of Physiology and Cellular Biophysics (**Tenured**), Columbia University College of Physicians and Surgeons, New York, NY (2004-present)
Vice-Chairman of Research, Department of Medicine, Columbia University (2004-present)

VIII. Hospital appointments

Assistant Attending Physician of Medicine, Columbia-Presbyterian Medical Center, New York, NY (1985-1992)
Associate Attending Physician of Medicine, Columbia-Presbyterian Medical Center, New York, NY (1992-1997)
Attending Physician of Medicine, Columbia University Medical Center, New York, NY (1997-present)

IX. Honors

Phi Beta Kappa, Tufts University, Medford, MA (1974)
Summa cum laude, Tufts University, Medford, MA (1975)
Mosby Scholarship Book Award, Washington University School of Medicine (1981)
Alpha Omega Alpha, Washington University School of Medicine, St. Louis (1981)
Pfizer Research Award for Young Faculty (1985-1987)]
Silberberg Assistant Professorship of Medicine, Columbia University (1988-1993)
American Heart Association Established Investigator Award (1988-1993)
Doctor Harold and Golden Lamport Research Award (1990)
Elected to the American Society for Clinical Investigation (1992)
Named Chair, Columbia University: Richard J. Stock Professor of Medicine (2000-present)
Elected to Association of American Physicians (1998-present)
Elected Deputy Editor, *Journal of Clinical Investigation*, (2002-2007)
American Heart Association/ATVB Council Special Recognition Award (2003)
David Rubinstein Lectureship of the Canadian Lipoprotein Conference (2005)
Alumni Achievement Award, Washington University School of Medicine (2011)
Elected to Board of Reviewing Editors for *Science* (2011 -)
Keynote Lecture, Australian Atherosclerosis Society (2011)
Terman Lectureship, Albert Einstein College of Medicine (2011)
2014 Bonazinga award: "Presented annually to a Society of Leukocyte Biology member for excellence in leukocyte biology research. It is the highest honor the society can bestow upon one of its members and has been awarded annually since 1980."
2015 Harrington Scholar-Innovator Award, Harrington Discovery Institute, University Hospitals, Cleveland, OH
2016 University of Washington (Seattle) 2016 Annual Russell Ross Invited Lectureship
2016 American Heart Association Russell Ross Memorial Lectureship Award in Vascular Biology

Conference Chairs and Boards

External Advisory Committee, Deuel Research Conferences (2004-2009)
Scientific Board, Kern Lipid Conference (2005-2010)
Scientific Board, Deuel Lipid Conference (2005-2010)
Chairman, 2005 Keystone Symposium on the Cellular Biology of Atherosclerosis
Chairman, 2010 Gordon Conference on Lipoprotein Metabolism
Co-Chair, 2011 Kern Lipid Conference
Chairman, 2012 Deuel Lipid Conference
Co-Chairperson, 2018 Keystone Symposium on Inflammation Resolution

X. Fellowship and grant support

Present:

- P01 HL087123 NIH/NHLBI (Tabas, PI; Tabas, RI Project 1) 3/1/13-2/28/18
Mechanisms of Atherogenesis in Insulin Resistance
Goals: To determine how insulin resistance in macrophages resulting from systemic insulin resistance affects macrophage processes relevant to atherosclerosis.
- 5 R01 HL075662 NIH/NHLBI (Tabas, PI) 3/1/13-2/28/18
Mechanisms & Consequences of Stress-Induced Macrophage Death in Atherosclerosis
Goals: To investigate the mechanisms and consequences of mitochondrial oxidative stress and caspase activation in atherosclerosis
- 1 R01 HL127464 NIH/NHLBI (Tabas, PI) 1/1/16-12/31/20
Enhancing Inflammation Resolution in Atherosclerosis via Targeted Nanoparticle-Mediated Delivery of Biologics
Goals: To elucidate the mechanisms that promote clinically significant atherosclerosis and then use this knowledge to design novel therapies.
- 1 R01 HL132412 NIH/NHLBI (Tabas, PI) 4/1/16-3/31/20
MerTK Cleavage and Signaling in Atherosclerosis
Goals: To investigate the role of MerTK and its cleavage by ADAM17 in inflammation resolution and atherosclerosis
- Merck Investigator Studies Program #52796 (Tabas, PI) 7/1/15-6/30/17
A New Hepatic DPP4 Pathway that Promotes Visceral Fat Inflammation
Goals: To study a new pathway in obesity in which hepatocyte-derived soluble DPP4 promotes inflammation in visceral fat

Pending:

- P01 NIH/NHLBI submitted 01/25/2016 (Tabas, PI of Project 3; Tall, PI of P01)
Inflammation and Atherothrombosis in Myeloproliferative States
Goals: To investigate the role of defective inflammation resolution in myeloproliferative states (MPS) and MPS-driven atherosclerosis

Recently completed:

- N01 BAA-HV-10-08 NIH/NHLBI (Fayad, PI; Tabas, co-RI Project 2) 8/13/10-8/12/15
NHLBI Programs of Excellence in Nanotechnology
Translational Nanomedical Therapies for Cardiac and Vascular Diseases
Goals: To test whether delivery of IL-10 to mouse models of advanced atherosclerosis using nanoparticles improves defective inflammation resolution
- 1 R01 HL106019 NIH/NHLBI (Tabas, PI) 1/1/11-11/30/15
Autophagy in Advanced Atherosclerosis
Goals: To investigate the role of autophagy in the progression of advanced atherosclerotic plaques
- 1 R01 HL107497 NIH/NHLBI (Tabas, PI) 12/1/11-11/30/15
Mechanisms of Defective Efferocytosis in Advanced Atherosclerosis
Goals: To explore mechanisms of defective efferocytosis in advanced atherosclerosis

Past:

Fellowship: NIH training grant (NHLBI), 1983-85, trainee
Pfizer Research Award for Young Faculty, 1985-1987, Principal Investigator
Project of NIH SCOR Grant in Atherosclerosis (NHLBI), 1986-1990, Co-Investigator
Project of NIH SCOR Grant in Atherosclerosis (NHLBI), 1991, Responsible Investigator
Biomedical Research Support Grant (NIH), 1990-1991, Principal Investigator
American Heart Association Established Investigator Award, 1988-1993, Principal Investigator
New York Heart Association Grant-in-Aid, Principal Investigator, 1992-1995
Research Supplement for Minority Individuals in Postdoctoral Training (Dr. Anselm K. Okwu)
American Heart Association, New York City Affiliate, Participating Laboratory Award (Dr. Yoshimune Shiratori)
Postdoctoral Fellowship Award in Atherosclerosis (Dr. Paul Skiba)
Schering-Plough Research Grant, 1989-1995, Responsible Investigator
Individual National Research Supplement Award for Postdoctoral Training (Dr. G. Andrew Keesler)
Postdoctoral Fellowship Award in Nutrition (Dr. Sudhir Marathe)
NIH R01 grant (NHLBI), Principal Investigator, 1992-1997
Project of NIH SCOR Grant in Atherosclerosis (NHLBI), Responsible Investigator, 1991-1996
Postdoctoral Fellowship Award in Atherosclerosis (Dr. Wei Tang)
Research grant from Berlex Laboratories, 2003-2004
AHA Heritage Affiliate Postdoctoral Training Grant, 2004-2005 (Dr. Tracie DeVries)
Merck Sponsored Research Project, Principal Investigator, 2004-2006
NIH SCOR Grant in Vascular Biology (NHLBI), Responsible Investigator or Project and Pathology Core, 2002-2007
NIH Individual Post-Doctoral Training Grant 2005-2007 (Dr. Tracie Seimon)
AHA Heritage Affiliate Postdoctoral Training Grant, 2005-2007 (Dr. Wahseng Lim)
AHA Scientist Development Grant, 2004-2007 (Dr. Yankun Li)
NIH Postdoctoral Fellowship Award in Atherosclerosis (Dr. Jenelle Timmins)
Boehringer-Ingelheim Sponsored Research Project, Principal Investigator, 2007
NIH P01 grant (NHLBI), Responsible Investigator, 2001-2006
NIH R01 grant (NHLBI), Principal Investigator, 2002-2007
NIH R01 grant (NHLBI), Principal Investigator, 2003-2008
Department of Defense grant, Principle Investigator, 2006-2010
AHA Scientist Development Grant, 2007-2010 (Dr. Tracie Seimon)
AHA Heritage Affiliate Postdoctoral Training Grant, 2007-2009 (Dr. Edward Thorp)

Fulbright Scholarship (Dorien Schrijvers)
NIH R01 grant (NHLBI), Principal Investigator, 2006-2011
NIH K99 grant (NHLBI), mentor for Dr. Edward Thorp, 2009-2011
NIH P01 grant (NHLBI), Responsible Investigator, 2006-2011
NIH P01 grant (NHLBI), Principle Investigator, 2007-2012
NIH R01 grant (NHLBI), Principal Investigator, 2008-2013
AHA Scientist Development Grant, mentor for Dr. Lale Ozcan, 2011-2013
AHA Pre-doctoral Training Grant, mentor for Ying Wang, 2011-2013
NIH K99 for Dr. Gabrielle Fredman, 2013-2015
Columbia University Interdisciplinary Research Initiatives Seed grant, 2014-2016

XI. Departmental and university committees

Faculty advisor for Columbia University College of Physicians and Surgeons medical students (1986-1994)
Member of the Columbia University Research Advisory Committee for first year medical student summer research projects (1990)
Member of the Department of Medicine Resident Selection Committee (1990-present)
Organizer of the Department of Medicine Young Faculty Research Conference (1990-1992)
Member of Department of Medicine Subcommittee on Research (1991) and Committee for Organizing Departmental Retreat (1995)
Member of Doctoral Program Subcommittee on Nutrition (1991-present)
Co-Director of Basic Research Track of the CPMC Internal Medicine Residency Program (1992-1997),
Scientific Advisory and Executive Committee, Medical Scientist Training (MD-PhD) Program, Columbia University (1993-present)
Member, Curriculum Committee of the College of Physicians & Surgeons (1997-2002)
Co-Associate Director, Medical Scientist Training (MD-PhD) Program, Columbia University (2001-present)
Chairman, Committee on Promotions of the Department of Medicine (1997-2004)
Member of Search Committees for Director of Pathology, St. Luke's Roosevelt Hosp. (1992), Chairperson of the Department of Pharmacology, Columbia University (1994-1995), Chairperson-Division of Cardiology, Columbia University (1999), Director of the Irving Center for Cancer Research (2004), Chairperson-Division of Oncology (2005)
Member, Dean's Scientific Advisory Committee (2007 - present)
Vice-Chair of Research, Department of Medicine (2007 - present)

XII. Teaching experience and responsibilities

Specific courses:

Medical Student Preceptor (1989, 1991, 1994, 1996), 6 students
Abnormal Human Biology, Atherosclerosis session preceptor (1987-present), 30 students
Cellular Membranes graduate course (Department of Anatomy & Cell Biology), LDL receptor and intracellular cholesterol metabolism sessions (1987-present), 30 students
Pharmacology graduate student course, LDL receptor session (1989-1993), 20 students
Histology medical student course, microcirculation session (1989-1994), 200 students
Advanced pathophysiology course for fourth year medical, atherosclerosis sessions (1990-1996), 40 students
Pathology graduate student course (Molecular Mechanisms of Disease), organizer and lecturer of Atherosclerosis section (1991-present), 15 students

Science Basic to the Practice of Medicine (formerly Biochemistry of Disease) medical student course, Atherosclerosis session (1992-present), 120 students
Pathophysiology course for 2nd-year medical students, Atherosclerosis session (1997-present), 120 students
Molecular and Cellular Biology of Nutrients, Apoptosis section (2001-2010), 15 students
Molecular and Cellular Cardiology Lecture Series (1998-2010), 15 fellows
Molecular Pathophysiology of the Cardiovascular System (2007-present), 20 students
Cardiovascular T32 Course "How to Make a Drug" (2014-present), 20 students

General teaching activities:

Attending on Internal Medicine ward service (1985-present), 2-3 students and 3 housestaff physicians
Attending on Endocrinology ward service (1987-present), 1-2 students and 1 fellow
Attending in Combined Endocrine/Diabetes, Thyroid, and Lipid Clinics (1987-present), 1-2 students and 1-2 clinical fellows

Ph.D. Thesis sponsor:

Lori Bottalico, Department of Anatomy/Cell Biology, Columbia University (1989-1992)
Scott Schissel, Department of Anatomy/Cell Biology, Columbia University (1993-1997)
Andrew Leventhal, Department of Anatomy/Cell Biology, Columbia University (2000-2004)—Winner of the 2004 Samuel W. Rover and Lewis Rover Award for Scholarship and Outstanding Achievement in Anatomy and Cell Biology
Ying Wang, Department of Physiology, Columbia University (2010 -)

Masters thesis sponsor:

Sungtae Lim, Institute of Human Nutrition, Columbia University (1989)
Woan-Chyng Su, Institute of Human Nutrition, Columbia University (1990)

Ph.D. Advisory/Examination committees:

Deborah A. Lazzarino, Department of Anatomy/Cell Biology, Columbia University (Ph.D. advisory committee and examination, 1987-1990)
Shing-Jong Lin, Department of Physiology, Columbia University (Ph.D. examination, 1989)
Maria Davila-Bloom, Institute of Human Nutrition, Columbia University (Ph.D. examination, 1989)
Fan Yuan, Department of Engineering, The City University of New York (Ph.D. examination, 1990-1993)
Lester S. Johnson, Department of Pathology, Columbia University, Ph.D. thesis committee (1990-1993)
Steven Rumsey, Institute of Human Nutrition, Ph.D. thesis committee (1992-1993)
Thomas E. Phalen, Albert Einstein College of Medicine, Ph.D. thesis defense committee (1993)
Sripriya Chari, Integrated Program in Cellular, Molecular, and Biophysical Studies, Qualifying Examination (1993)
Zhenglun Zhu, Department of Anatomy/Cell Biology, Columbia University (Ph.D. advisory committee and examination, 1991-1993)
Lori Masucci, Institute of Human Nutrition, Ph.D. thesis committee (1993-1996)
Cory Huang, Department of Pathology, Ph.D. thesis committee (1995)
Mingyue Zhou, Institute of Human Nutrition, Ph.D. thesis committee (1995-)
Hong-yuan Yang, Institute of Human Nutrition, Ph.D. thesis committee (1995-)
Donata Paresce, Department of Pathology, Ph.D. thesis committee (1997)
Furcy Paultre, Institute of Human Nutrition, Ph.D. thesis committee (1997-)

Chris William, Integrated Program. Ph.D. qualifying exam (1997)
Nrgo Storey, Department of Biochemistry, Dalhousie University, Ph.D. examination, 1997
Peter Sartipy, Wallenberg Laboratory, University of Gothenburg, Sweden, opponent, 2000
Ying Lui, Institute of Human Nutrition, Ph.D. thesis committee (1999-)
Edward Cha, Department of Microbiology, Ph.D. thesis committee (2000-2005)
Yu Sun, Institute of Human Nutrition, Ph.D. thesis committee (1997-2002)
Dorien Schrijvers, University of Antwerp, Belgium, jury member, 2007
Suzhao Li, Institute of Human Nutrition, Ph.D. thesis committee (2006-)
Caryn Sheckman, Institute of Human Nutrition, Ph.D. thesis committee (2007-)
David Crider, Department of Pathology & Cell Biology, Ph.D. these committee (2007-)
Mi Wang, Department of Pharmacology, Ph.D. these committee (2010 -)

XIII. Other professional activities

Reviewer of over 3000 manuscripts for *Science*, *Nature*, *Nature Medicine*, *Nature Cell Biology*, *Nature Immunology*, *Cell Metabolism*, *Immunity*, *Blood*, *Journal of Clinical Investigation*, *Journal of Biological Chemistry*, *Arteriosclerosis, Thrombosis, and Vascular Biology*, *Journal of Lipid Research* (1985-present)
Editorial Board of *Journal of Biological Chemistry* (1995-2000)
Ad hoc grant reviewer for National Science Foundation (1989-present)
Sub-group reviewer for American Heart Association Established Investigator and Clinical Scientist Award grants (1991 & 1992)
Member of American Heart Association grant-in-aid study section (1992-1993)
Member Scientific Board of the Stanley J. Sarnoff Endowment for Cardiovascular Science, Inc. (1992-1996)
Vice-chairman of American Heart Association grant-in-aid study section (1994)
Consultant for Merck, Schering-Plough, Warner-Lambert, Berlex, Eli Lilly, Pfizer, Talaria Biotech, ReddyUS, Amersham/GE, and Bristol-Myers-Squibb, Novartis, Sankyo, Lipimetix
Institutional representative for the American Society of Clinical Investigation (1998-2000)
Co-Editor of October 2000 and 2001 issues of *Current Opinion in Lipidology*
Organizer and Chairman, Keystone Conference on the Cellular Biology of Atherosclerosis (2005)
External Advisory Committee, Deuel Research Conferences (2004-2012)
Scientific Board, Kern Lipid Conference (2005-2010)
General Council and Review Panel for Future Leaders Grant Program, The Leadership Council for Improving Cardiovascular Care (2005-)
Editorial Board of *BBA - Molecular and Cell Biology of Lipids* (2008-)
Chairman, 2010 Gordon Conference on Lipoprotein Metabolism
Board of Reviewing Editors for *Science* (2011 -)
Charter member NIH Study Section: Atherosclerosis and Inflammation of the Cardiovascular System (2011-2017)

XIV. Publications (* indicates that Dr. Tabas is a senior/communicating author)

Original, peer-reviewed articles:

1. Tabas, I., Schlesinger, S. and Kornfeld, S. (1978) Processing of high mannose oligosaccharides to form complex type of oligosaccharides on the newly synthesized polypeptides of the vesicular stomatitis virus G protein and the IgG heavy chain. *J. Biol. Chem.* **253**:716-722.
2. Li, E., Tabas, I. and Kornfeld, S. (1978) The synthesis of complex type of oligosaccharides. I. Structure of the lipid-linking oligosaccharide precursor of the complex type oligosaccharides of the vesicular stomatitis virus G. protein. *J. Biol. Chem.* **253**:7762-7770.

3. Kornfeld, S., Li, E. and Tabas, I. (1978) The synthesis of complex type oligosaccharides. II. Characterization of the processing intermediates in the synthesis of the complex oligosaccharide units of the vesicular stomatitis virus G protein. *J. Biol. Chem.* **253**:7771-7778.
4. Tabas, I., and Kornfeld, S. (1978) The synthesis of complex type oligosaccharides. III. Identification of an α -D-mannosidase activity involved in a late stage of processing of complex type oligosaccharides. *J. Biol. Chem.* **253**:7779-7786.
5. Tabas, I. and Kornfeld, S. (1979) Purification and characterization of a rat liver Golgi α -mannosidase capable of processing asparagine-linked oligosaccharides. *J. Biol. Chem.* **254**:11655-11663.
6. Tabas, I., and Kornfeld, S. (1980) Biosynthetic intermediates of β -D-glucuronidase contain high mannose oligosaccharides with blocked phosphate residues. *J. Biol. Chem.* **255**:6633-6639.
- *7. Tabas, I., and Tall, A.R. (1984) Mechanism of the association of HDL with endothelial cells, smooth muscle cells, and fibroblasts. *J. Biol. Chem.* **259**:13897-13905.
- *8. Tabas, I., Weiland, D.A. and Tall, A. (1985) Unmodified LDL causes cholesteryl ester accumulation in J774 macrophages. *Proc. Natl. Acad. Sci. USA* **82**:416-420.
- *9. Tabas, I., Weiland, D.A. and Tall, A. (1985) Inhibition of acyl coenzyme A:cholesterol acyl transferase in J774 macrophages enhances down-regulation of the low density lipoprotein (LDL) receptor and 3-hydroxy-3-methylglutaryl-coenzyme A reductase and prevents LDL-induced cholesterol accumulation. *J. Biol. Chem.* **261**:3147-3155.
10. Tall, A.R., Tabas, I. and Williams, K. (1986) Lipoprotein-liposome interactions. *Methods Enzymol.* **128**:647-657.
11. Williams, K.J., Tall, A.R., Tabas, I. and Blum, C. (1986) Recognition of vesicular lipoproteins by the apolipoprotein B, E receptor of cultured fibroblasts. *J. Lipid. Res.* **27**:892-900.
12. Tall, A., Granot, E., Brocia, R., Tabas, I., Hesler, C., Williams, K. and Denke, M. (1986) Accelerated transfer of cholesteryl esters in dyslipidemic plasma: Role of cholesteryl ester transfer protein. *J. Clin. Invest.* **79**:1217-1225.
- *13. Tabas, I., Boykow, G.C., Tall A.R. (1986) Foam cell-forming J774 macrophages have markedly elevated LDL-induced acyl coenzyme A:cholesterol acyl transferase activity compared to mouse peritoneal macrophages despite similar LDL receptor activity. *J. Clin. Invest.* **79**:418-426.
14. Granot, E., Tabas, I. and Tall, A.R. (1987) Human plasma cholesteryl ester transfer protein enhances the uptake of HDL cholesteryl esters by cultured hepatoma (HepG2) cells. *J. Biol. Chem.* **262**:3482-3487.
- *15. Tabas, I. and Boykow, G.C. (1987) Protein synthesis inhibition in mouse peritoneal macrophages results in increased acyl coenzyme A:cholesterol acyl transferase activity and cholesteryl ester accumulation in the presence of native low density lipoprotein. *J. Biol. Chem.* **262**:12175-12181.

- *16. Tabas, I., Rosoff, W.J., and Boykow, G.C. (1988) Acyl coenzyme A:cholesterol acyl transferase in macrophages utilizes a cellular pool of cholesterol oxidase-accessible cholesterol as substrate. *J. Biol. Chem.* **263**:1266-1272.
- *17. Khoo, J.C., Miller, E., McLoughlin, P., Tabas, I., and Rosoff, W.J. (1989) Cholesterol esterification as a limiting factor in accumulation of cell cholesterol: a comparison of two J774 macrophage cell lines. *Biochem. Biophys. Acta* **1012**:215-217.
- *18. Tabas, I., Feinmark, S., and Beatini, N. (1989) The reactivity of desmosterol and other shellfish and xanthomatosis-associated sterols in the macrophage sterol esterification reaction. *J. Clin. Invest.* **84**:1713-1721.
- *19. Tabas, I., Chen, L-L., Clader, J., McPhail, A.T., Burnett, D.A., Bartner, P., Das, P.R. Pramanik, B.N., Puar, M.S., Feinmark, S.J., Zipkin, R.E., Boykow, G., Vita, G., and Tall, A.R. (1990) Rabbit and human liver contain a novel pentacyclic triterpene ester with acyl-CoA:cholesterol acyl transferase-inhibitory activity. *J. Biol. Chem.* **265**:8042-8051.
- *20. Tabas, I., Lim, S., Xu, X., and Maxfield, F.R. (1990) Endocytosed β -VLDL and LDL are delivered to different intracellular vesicles in mouse peritoneal macrophages. *J. Cell Biol.* **111**:929-940
21. Hussain, M.M., Maxfield, F.R., Mas-Oliva, J., Tabas, I., Ji, Z-S, Innerarity, T.L., and Mahley, R.W. (1990) Clearance of chylomicron remnants by the low density lipoprotein receptor-related protein/a₂-macroglobulin receptor. *J. Biol. Chem.* **266**:13936-13940.
- *22. Xu, X., and Tabas, I. (1991) Lipoproteins activate acyl-CoA:cholesterol acyl transferase only after cholesterol pools are expanded to a critical threshold level. *J. Biol. Chem.* **266**:17040-17048.
- *23. Tabas, I., Beatini, N., Clader, J.W., Dugar, S., and Su, W-C. (1991) Identification of a novel triterpene fatty acyl esterifying activity in rabbit and human intestine. *J. Lipid Res.* **32**:1689-1698.
- *24. Bottalico, L.A., Wagner, R.E., Agellon, L.B., Assoian, R.K., and Tabas, I. (1991) Transforming growth factor- β 1 inhibits scavenger receptor activity in THP-1 human macrophages. *J. Biol. Chem.* **266**:22866-22871.
- *25. Tabas, I., Myers, J., Innerarity, T.L., Xu, X., Arnold, K., Boyles, J., and Maxfield, F.R. (1991) The influence of particle size and apoprotein E-receptor interactions on the endocytic targeting of β -VLDL in mouse peritoneal macrophages. *J. Cell Biol.* **115**:1547-1560.
- *26. Xu, X., and Tabas I. (1991) Sphingomyelinase enhances low density lipoprotein uptake and ability to induce cholesteryl ester accumulation in macrophages. *J. Biol. Chem.* **266**:24849-24858.
- *27. Bottalico, L.A., Kendrick, N.C., Keller, A., Li, Y., & Tabas, I. (1993) Cholesteryl ester loading of mouse peritoneal macrophages is associated with changes in the expression or modification of specific cellular proteins including an increase in an isoform of a-enolase. *Arterio. Thromb.* **13**:264-275.
- *28. Bottalico, L.A., Keesler, G.A., Fless, G.M., and Tabas, I. (1993) Cholesterol loading of macrophages leads to marked up-regulation of native lipoprotein(a) and apoprotein(a) internalization and degradation. *J. Biol. Chem.* **268**:8569-8573.

- *29. Tabas, I., Li, Y., Brocia, R., Swenson, T.L., and Williams, K.J. (1993) Lipoprotein lipase and sphingomyelinase enhance the association of atherogenic lipoproteins with smooth muscle cells and extracellular matrix: a possible mechanism for low density lipoprotein and lipoprotein(a) retention and macrophage foam cell formation. *J. Biol. Chem.* **268**:20419-20432.
- *30. Myers, J.N., Tabas, I. and Maxfield, F.R. (1993) Characterization of widely-distributed endocytic compartments resulting from the endocytosis of β -VLDL in mouse peritoneal macrophages. *J. Cell Biol.* **123**:1389-1402.
- *31. Okwu, A.K., Xu, X., Shiratori, Y., and Tabas, I. (1994) Cellular sphingomyelin content influences the threshold for acyl-CoA:cholesterol acyltransferase stimulation by lipoproteins in macrophages. *J. Lipid Res.* **35**:644-655.
- *32. Shiratori, Y., Okwu, A.K., and Tabas, I. (1994) Free cholesterol loading of macrophages stimulates phosphatidylcholine biosynthesis and up-regulation of CTP:phosphocholine cytidyltransferase. *J. Biol. Chem.* **269**:11337-11348.
- *33. Keesler, G.A., Li, Skiba, P.J. Fless, G.M., and Tabas, I. (1994) The macrophage foam cell lipoprotein(a)/apoprotein(a) receptor: cell-surface localization, dependence of induction on new protein synthesis, and ligand specificity. *Arterio. Thromb.* **14**:1337-1345.
- *34. Skiba, P.J., Keesler, G.A., and Tabas, I. (1994) Interferon-gamma down-regulates the foam cell lipoprotein(a)/apoprotein(a) receptor activity. *J. Biol. Chem.* **269**:23059-23067.
- *35. Tabas, I., Zha, X., Myers, J.N., and Maxfield, F.R. (1994) The actin cytoskeleton is important for the stimulation of acyl-coenzyme A:cholesterol O-acyltransferase activity by β -VLDL and acetyl-LDL in macrophages. *J. Biol. Chem.* **269**:22547-22556.
36. Granot, E., Schwiegelshohn, B., Tabas, I., Gorecki, M., Vogel, T., Carpenter, Y.A., and Deckelbaum, R.J. (1994) Effects of particle size on cell uptake of model triglyceride-rich particles with and without apoprotein E. *Biochemistry* **33**:15190-15197.
- *37. Schissel, S.L., Beatini, N., Zha, X., Maxfield, F.R., and Tabas, I. (1995) Effect and cellular site of action of cysteine protease inhibitors on the cholesterol esterification pathway in macrophages and Chinese hamster ovary cells. *Biochemistry* **34**:10463-10473.
- *38. Shiratori, Y., Houweling, M., Zha, X., and Tabas, I. (1995) Stimulation of CTP:phosphocholine cytidyltransferase by free cholesterol loading of macrophages involves signaling through protein dephosphorylation. *J. Biol. Chem.* **270**:29894-29903.
39. Wang, N., Tabas, I., Winchester, R., Ravalli, S., Rabbani, L.E., and Tall, A. (1996) Interleukin-8 is induced by cholesterol loading of macrophages and expressed in macrophage foam cells in human atheroma. *J. Biol. Chem.* **271**:8837-8842.
- *40. Skiba, P.J., Zha, X., Maxfield, F.R., Schissel, S.L., and Tabas, I. (1996) The distal pathway of lipoprotein-induced cholesterol esterification, but not sphingomyelinase-induced cholesterol esterification, is energy-dependent. *J. Biol. Chem.* **271**:13392-13400.

- *41. Schissel, S.L., Schuchman, E.H., Williams, K.J., and Tabas, I. (1996) Zn²⁺-stimulated sphingomyelinase is secreted by macrophages and other cell types and is a product of the acid sphingomyelinase gene. *J. Biol. Chem.* **271**:18431-18436.
- *42. Schissel, S.L., Tweedie-Hardman, J., Rapp, J.H., Graham, G., Williams, K.J., and Tabas, I. (1996) Rabbit aorta and human atherosclerotic lesions hydrolyze the sphingomyelin of retained low-density lipoprotein. Proposed role for arterial-wall sphingomyelinase in subendothelial retention and aggregation of atherogenic lipoproteins. *J. Clin. Invest.* **98**:1455-1464.
- *43. Tabas, I., Marathe, S., Keesler, G.A., Beatini, N., and Shiratori, Y. (1996) Evidence that the initial up-regulation of phosphatidylcholine biosynthesis in free cholesterol-loaded macrophages is an adaptive response that prevents cholesterol-induced cellular necrosis. Proposed role of an eventual failure of this response in foam cell necrosis in advanced atherosclerosis. *J. Biol. Chem.* **271**:22773-22781.
- *44. Keesler, G.A., Gabel, B., Koschinsky, M., and Tabas, I. (1996) The binding activity of the macrophage lipoprotein(a)/apoprotein(a) receptor is up-regulated by cholesterol via a post-translational mechanism and recognizes distinct kringle domains on apoprotein(a). *J. Biol. Chem.* **271**:32096-32104.
- *45. Tang, W., Keesler, G.A., and Tabas, I. (1997) The structure of the gene for murine CTP:phosphocholine cytidyltransferase (*Ctpct*). Relationship of exon structure to functional domains and identification of transcriptional start sites and potential upstream regulatory elements. *J. Biol. Chem.* **272**:13146-13151.
46. Zha, X., Tabas, I., Leopold, P.L., Jones, N.L., and Maxfield, F.R. (1997) Evidence for prolonged cell-surface contact of acetyl-LDL before entry into macrophages. *Arterio. Thromb. Vasc. Biol.* **17**:1421-1431.
- *47. Schissel, S.L., Jiang, X.C., Tweedie-Hardman, J., Jeong, T.S., Camejo, E.H., Najib, J., Rapp, J.H., Williams, K.J., and Tabas, I. (1998) Secretory sphingomyelinase, a product of the acid sphingomyelinase gene, can hydrolyze atherogenic lipoproteins at neutral pH. Implications for atherosclerotic lesion development. *J. Biol. Chem.* **273**:2738-2746.
48. Zha, X., Pierini, L.M., Leopold, P.L., Skiba, P.J., Tabas, I., and Maxfield, F.R. (1998) Sphingomyelinase treatment induces ATP-independent endocytosis. *J. Cell Biol.* **140**:39-47.
- *49. Marathe, S., Schissel, S.L., Yellin, M.J., Beatini, N., Mintzer, R., Williams, K.J., and Tabas, I. (1998) Human vascular endothelial cells are a rich and regulatable source of secretory sphingomyelinase. Implications for early atherogenesis and ceramide-mediated cell signaling. *J. Biol. Chem.* **273**:4081-4088.
50. Jeong, T.S., Schissel, S.L., Tabas, I., Pownall, H.J., Tall, A.R., Jiang, X.C. (1998) Increased sphingomyelin content of plasma lipoproteins in apolipoprotein E knockout-out mice reflects combined production and catabolic defects and enhances reactivity with mammalian sphingomyelinase. *J. Clin. Invest.* **101**:905-912.
- *51. Khelef, N., Buton, X., Beatini, N., Wang, H., Meiner, V., Chang, T-Y., Farese, R.V., Jr., Maxfield, F.R., and Tabas, I. (1998) Immunolocalization of ACAT in macrophages. *J. Biol. Chem.* **273**:11218-11224.

*52. Schissel, S.L., Keesler, G.A., Schuchman, E.H., Williams, K.J., and Tabas, I. (1998) The cellular trafficking and zinc-dependency of secretory and lysosomal sphingomyelinase, two products of the acid sphingomyelinase gene. *J. Biol. Chem.* **273**:18250-18259.

53. Mazany, K., Peng, T., Tabas, I., and Williams, K.J. (1998) Human chondroitin 6-sulfotransferase: cloning, gene structure, and chromosomal localization. *Biochim. Biophys. Acta.* **1407**:92-97.

54. Mukherjee, S., Zha, X., Tabas, I., Maxfield, F.R. (1998) Cholesterol distribution in living cells: fluorescence imaging using dehydroergosterol as a fluorescent cholesterol analog. *Biophysical Journal* **75**:1915-1925.

*55. Tang, W., Walsh A., and Tabas, I (1999) Macrophage-targeted CTP:phosphocholine cytidyltransferase (1-314) transgenic mice. *Biochim. Biophys. Acta.* **1437**:301-316.

56. Bakovic, M., Waite, K., Tang, W., Tabas, I., Vance, D.E. (1999) Transcriptional activation of the murine CTP:phosphocholine cytidyltransferase gene (*Ctpct*). Combined action of upstream stimulatory and inhibitory *cis*-acting elements. *Biochim. Biophys. Acta.* **1438**:147-165.

*57. Marathe, S., Kuriakose, G., Williams, K.J., and Tabas I. (1999) Sphingomyelinase, an enzyme implicated in atherogenesis, is present in atherosclerotic lesions and binds to extracellular matrix. *Arterio. Thromb. Vasc. Biol.* **19**:2648-2658.

*58. Buton, X., Mamdouh, Z., Ghosh, R., Du, H., Kuriakose, G., Beatini, N., Grabowski, G.A., Maxfield, F.R., and Tabas, I. (1999) Unique cellular events occurring during the initial interaction of macrophages with matrix-retained or methylated aggregated LDL. Prolonged cell-surface contact during which LDL-cholesteryl ester hydrolysis exceeds LDL-protein degradation. *J. Biol. Chem.* **274**:32132-32121.

*59. Khelef, N., Soe, T.T., Quehenberger, O., Beatini, N., Tabas, I., Maxfield, F.R. (2000) A portion of acyl-CoA:cholesterol acyltransferase localizes near the trans-Golgi network and the endocytic recycling compartment in macrophages. *Arterio. Thromb. Vasc. Biol.* **20**:1769-1776.

*60. Yao, P.M. and Tabas, I. (2000) Free cholesterol loading of macrophages induces apoptosis involving the Fas pathway. *J. Biol. Chem.* **275**:23807-23813.

*61. Wong, M-L., Xie, B., Beatini, N., Phu, P., Marathe, S., Johns, A., Hirsch, E., Williams, K.J., Licinio, J., and Tabas, I. (2000) Acute systemic inflammation up-regulates secretory sphingomyelinase *in vivo*: a possible new link between inflammatory cytokines and atherogenesis. *Proc. Natl. Acad. Sci. U.S.A.* **97**:8681-8686.

*62. Marathe, S., Miranda, S.R.P., Devlin, C., Johns, A., Kuriakose, G., Williams, K.J., Schuchman, E.H., and Tabas, I. (2000) Creation of a mouse model for non-neurological (type B) Niemann-Pick mouse model by stable, low-level expression of lysosomal sphingomyelinase in the absence of secretory sphingomyelinase: relationship between brain intra-lysosomal enzyme activity and central nervous system function. *Hum. Molec. Gen.* **9**:1967-1976.

*63. Zhang, D., Tang, W., Yao, P.M., Yang, C., Xie, B., Jackowski, S., and Tabas, I. (2000) Macrophages deficient in CTP:phosphocholine cytidyltransferase-□₁ and CTP:phosphocholine cytidyltransferase-□₂ conditions but are highly susceptible to free cholesterol-induced death. Molecular genetic evidence that

the induction of phosphatidylcholine biosynthesis in free cholesterol-loaded macrophages is an adaptive response. *J. Biol. Chem.* **275**:35368-35376.

*64. Marathe, S., Choi, Y., Leventhal, A., and Tabas, I. (2000) Lipoproteins from apolipoprotein E knockout mice become potent inducers of macrophage foam cell formation when treated with sphingomyelinase. *Arterio.Thromb.Vasc.Biol.* **20**:2607-2613.

*65. Sakr, S., Eddy, R.J., Barth, H., Wang, F., Greenberg, S., Maxfield, F.R., and Tabas, I. (2001) The uptake and degradation of matrix-bound lipoproteins by macrophages require an intact actin cytoskeleton, Rho family GTPases, and myosin ATPase activity. *J. Biol. Chem.* **276**:37649-37658.

*66. Yao, P.M. and Tabas, I. (2001) Free cholesterol loading of macrophages is associated with widespread mitochondrial dysfunction and activation of the mitochondrial apoptosis pathway. *J. Biol. Chem.* **276**:42468-42476.

*67. Leventhal, A.R., Chen, W., Tall, A.R., and Tabas, I. (2001) Acid sphingomyelinase-deficient macrophages have defective cholesterol efflux and trafficking. *J. Biol. Chem.* **276**:44976-44983.

68. Chen, W., Sun, Y., Welch, C., Gorelik, A., Leventhal, A.R., Tabas, I., Tall, A.R. (2001) Preferential ATP-binding cassette transporter A1-mediated cholesterol efflux from late endosomes/lysosomes and a defect in Niemann-Pick Type C macrophages. *J. Biol. Chem.* **276**:43564-43569.

*69. Devlin, C.M., Kuriakose, G., Hirsch, E., and Tabas, I. (2002) Genetic alterations of interleukin-1 receptor antagonist in mice markedly affect non-HDL lipoprotein cholesterol levels and foam cell lesion size. *Proc. Natl. Acad. Sci. U.S.A.* **99**: 6280-6285.

*70. Feng, B. and Tabas, I. (2002) ABCA1-mediated cholesterol efflux is defective in free cholesterol-loaded macrophages. Mechanism involves enhanced ABCA1 degradation in a process requiring full npc1 activity. *J. Biol. Chem.* **277**:43271-43280.

*71. Feng, B., Yao, P.M., Li, Y., Devlin, C., Zhang, D., Harding, H., Sweeney, M., Rong, J.X., Kuriakose, G., Fisher, E.A., Marks, A.R., Ron, D., Tabas, I. (2003) The endoplasmic reticulum as the site of cholesterol-induced cytotoxicity in macrophages. *Nature Cell Biology* **5**:781-792.

*72. Feng, B., Zhang, D., Kuriakose, G., Devlin, C.M., Kockx, M., and Tabas, I. (2003) Niemann-Pick C heterozygosity confers resistance to lesional necrosis and macrophage apoptosis in murine atherosclerosis. *Proc. Natl. Acad. Sci. U.S.A.* **100**:10423-10428.

*73. Patel, M., Morrow, J., Maxfield, F.R., Strickland, D.K., Greenberg, S., and Tabas, I. (2003) The cytoplasmic domain of LDL receptor-related protein, but not that of the LDL receptor, triggers phagocytosis. *J. Biol. Chem.* **278**:44799-44807.

*74. Leventhal, A.R., Leslie, C.C., and Tabas, I. (2004) Suppression of macrophage eicosanoid synthesis by atherogenic lipoproteins is profoundly affected by cholesterol-fatty acyl esterification and the Niemann-Pick C pathway of lipid trafficking. *J. Biol. Chem.* **279**:8084-8092.

75. Liang, C.P., Han, S.A., Okamoto, H., Carnemolla, R., Tabas, I., Accili, D., Tall, A.R. (2004) Increased CD36 Protein as a Response to Defective Insulin Signaling in Macrophages. *J. Clin. Invest.* **113**:764-773.

- *76. Li, Y., Ge, M., Ciani, L., Kuriakose, G., Westover, E.J., Dura, M., Covey, D.F., Freed, J.H., Maxfield, F.R., Lytton, J., and Tabas, I. (2004) Enrichment of endoplasmic reticulum with cholesterol inhibits SERCA2b activity in parallel with increased order of membrane lipids. Implications for depletion of ER calcium stores and apoptosis in cholesterol-loaded macrophages. *J. Biol. Chem.* **279**:37030-37039.
77. Jacobs, R.J., Devlin, C., Tabas, I., Vance, D.E. (2004) Targeted deletion of hepatic CTP:phosphocholine cytidyltransferase- α in mice decreases plasma high density and very low density lipoproteins. *J. Biol. Chem.* **279**:47402-47410.
78. Wang, L., Magdaleno, S., Tabas, I., and Jackowski, S. (2005) Early embryonic lethality in mice with targeted deletion of the CTP:phosphocholine cytidyltransferase- α (*Cytc1a*). *Mol. Cell. Biol.* **25**:3357-3363
79. Mintzer, R.J., Appell, K.C., Cole, A., Johns, A., Pagila, R., Polokoff, M.A., Tabas, I., Snider, R.M., and Meurer-Ogden, J.A. (2005) A comparison of two high-throughput screening formats to identify inhibitors of secreted acid sphingomyelinase. *Journal of Biomolecular Screening.* **10**:225-234.
80. Baez, J.M., Tabas, I., Cohen, D.E. (2005) Decreased lipid efflux and increased susceptibility to cholesterol-induced apoptosis in macrophages lacking phosphatidylcholine transfer protein. *Biochemical J.* **388**:57-63
81. Wüstner, D., Mondal, M., Tabas, I., and Maxfield, F.R. (2005) Direct observation of rapid internalization and intracellular targeting of plasma membrane sterol in macrophage foam cells. *Traffic.* **6**:396-412.
82. Devlin, C.M., Lee, S.J., Kuriakose, G., Spencer, C., Becker, L., Grosskopf, I., Ko, C., Huang, L.S., Koschinsky, M.L., Cooper, A.D., Tabas, I. (2005) A cell surface-binding apolipoprotein(a) peptide delays chylomicron remnant clearance and markedly increases plasma remnant lipoproteins and atherosclerosis *in vivo*. *Arterio. Thromb. Vasc. Biol.* **25**:1704-1710.
- *83. Li, Y., Schwabe, R., DeVries-Seimon, T., Yao, P.M., Tall, A.R., Davis, R.J., Flavell, R., Brenner, D.A., and Tabas, I (2005) Free cholesterol-loaded macrophages are an abundant source of TNF- α and IL-6. *J. Biol. Chem.* **280**:21763-21772.
84. Jacobs, R.L., Stead, L.M., Devlin, C. Tabas, I., Brosnan, M.E., Brosnan, J.T., and Vance, D.E. (2005) Physiological regulation of phospholipid methylation alters plasma homocysteine in mice. *J. Biol. Chem.* **280**:28299-28305.
- *85. DeVries-Seimon, T., Li, Y., Yao, P.M., Stone, E., Wang, Y., Davis, R.J., Flavell, R., and Tabas, I. (2005) Cholesterol-induced macrophage apoptosis requires both ER stress pathways and engagement of the type A scavenger receptor. *J. Cell Biol.* **171**:61-73.
- *86. Li, Y., Gerbod-Giannone, M.C., Seitz, H., Cui, D., Thorp, E., Tall, A.R., Matsushima, G.K., and Tabas, I. (2006) Cholesterol-induced apoptotic macrophages elicit an inflammatory response in phagocytes that is partially attenuated by the Mer receptor. *J. Biol. Chem.* **281**:6707-6717.

87. Nelson, J., Jiang, X.C., Tabas, I., Tall, A.R., and Shea, S. (2006) Plasma sphingomyelin and subclinical atherosclerosis: findings from the multi-ethnic study of atherosclerosis (MESA). *Am. J. Epidemiol.* **163**:903-12
88. Gerbod-Giannone, M.C., Li, Y., Holleboom, A., Tabas, I., Tall, A.R. (2006) TNF α induces ABCA1 via NF κ B in macrophages and phagocytes ingesting apoptotic cells. *Proc. Natl. Acad. Sci. U.S.A.* **103**:3112-3117.
89. Han, S., Liang, C.P., DeVries-Seimon, T., Ranalletta, M., Accili, D., Tabas, I., and Tall, A.R. (2006) Macrophage insulin receptor deficiency leads to increased apoptosis and necrotic core areas in advanced atherosclerotic lesions. *Cell Metabolism* **3**:257-266.
90. Boullier, A., Li, Y., Palinski, W., Quehenberger, O., Tabas, I., Witztum, J.L., and Miller, Y.I. (2006) Minimally oxidized LDL offsets the apoptotic effects of extensively oxidized LDL and free cholesterol in macrophages. *Arterio. Thromb. Vasc. Biol.* **26**: 1169 - 1176.
- *91. Bao, L., Li, Y., Deng, S.X., Landry, D., and Tabas, I. (2006) Sitosterol-containing lipoproteins trigger free sterol-induced caspase-independent death in ACAT-competent macrophages. Implications for sterol structure-dependent mechanisms of cell death and for atherosclerotic vascular disease in sitosterolemia. *J. Biol. Chem.* **281**:33635-33649.
- *92. Seimon, T.A., Obstfeld, A., Moore, K.J., Golenbock, D.T., and Tabas, I. (2006) Combinatorial pattern recognition receptor signaling alters the balance of life and death in macrophages. *Proc. Natl. Acad. Sci. U.S.A.* **103**:19794-19799.
- *93. Li, Y. and Tabas, I. (2007) The inflammatory cytokine response of cholesterol-enriched macrophages is suppressed by stimulated pinocytosis. *J. Leukoc. Biol.* **81**: 483–491.
- *94. Cui, D., Thorp, E., Li, Y., Wang, N., Yvan-Charvet, L., Tall, A.R., Tabas, I. (2007) *Pivotal Advance*: Macrophages become resistant to cholesterol-induced death after phagocytosis of apoptotic cells. *J. Leukoc. Biol.* **82**:1040-50.
95. Bao, S., Li, Y., Leia, X., Wohltmann, M., Bohrer, A., Ramanadhama, S., Tabas, I., and Turk, J. (2007) Attenuated free cholesterol loading-induced apoptosis but preserved phospholipid composition of peritoneal macrophages from mice that do not express group VIA phospholipase A2. *J. Biol. Chem.* **282**:27100-14.
- *96. Thorp, E., Kuriakose, G., Shah, Y.M., Gonzalez, F.J., Tabas, I. (2007) Pioglitazone increases macrophage apoptosis and plaque necrosis in advanced atherosclerotic lesions of non-diabetic LDL receptor-null mice. *Circulation* **116**:2182-2190.
- *97. Lim, W., Timmins, J., Seimon, T.A., Sadler, A., Kolodgie, F., Virmani, R., Schindler, C., and Tabas, I. (2008) Signal transducer and activator of transcription-1 is critical for apoptosis in macrophages subjected to endoplasmic reticulum stress in vitro and in advanced atherosclerotic lesions in vivo. *Circulation* **117**:940-951. PMC2276635
- *98. Iqbal, J., Dai, K., Seimon, T.A., Jungreis, R., Oyadomari, M., Ron, D., Tabas, I., Hussain, M. (2008) IRE1 β restricts chylomicron production by selectively degrading MTP mRNA. *Cell Metabolism* **7**:445-55 (Dr. Tabas, co-communicating author) PMC2435513

- *99. Thorp, E., Cui, D., Kuriakose, G., and Tabas, I. (2008) Mutation of the MERTK receptor promotes apoptotic cell accumulation and plaque necrosis in advanced atherosclerotic lesions of apolipoprotein E-deficient mice. *Arterio. Thromb. Vasc. Biol.* **28**:1421-8. PMC2575060
- *100. Devlin, C.M., Leventhal, A.R., Kuriakose, G., Schuchman, E.H., Williams, K.J., Tabas, I. (2008) Acid sphingomyelinase promotes lipoprotein retention within early atheromata and accelerates lesion progression. *Arterio. Thromb. Vasc. Biol.* **20**:2607-2613. PMC2562252
101. Senokuchi, T., Liang, C.P., Seimon, T.A., Han, S., Matsumoto, M., J.H., DePinho, R.A., Accili, D., Tabas, I., and Tall, A.R. (2008) FoxOs promote apoptosis of insulin resistant macrophages during cholesterol-induced ER stress. *Diabetes* **57**:2967-76. PMC2570393
102. Manning-Tobin, J.J., Moore, K.J., Seimon, T.A., Bell, S.A., Sharuk, M., Alvarez-Leite, J.I., de Winther, M.P.J., Tabas, I., Freeman, M.W. (2009) Loss of SR-A and CD36 activity reduces atherosclerotic lesion complexity without abrogating foam cell formation in hyperlipidemic mice. *Arterio. Thromb. Vasc. Biol.* **29**:19-26. PMC2666043
- *103. Thorp, E., Li, Y., Bao, L., Yao, P.M., Kuriakose, G., Rong, J., Fisher, E.A., Tabas, I. (2008) Increased apoptosis in advanced atherosclerotic lesions of *Apoe*^{-/-} mice lacking macrophage Bcl-2. *Arterio. Thromb. Vasc. Biol.* **29**:169-72. PMC2731712
104. Packard, R.R.S., Tabas, I., Libby, P., Lichtman, A.H. (2008) CD11c(+) dendritic cells maintain antigen processing, presentation capabilities, and CD4(+) T-cell priming efficacy under hypercholesterolemic conditions associated with atherosclerosis. *Circulation Res.* **103**:965-973. PMC2668806
- *105. Li, Y., Zhang, Y., Dorweiler, B., Cui, D., Wang, T., Woo, C.W., Wolberger, C., Imai, S., Tabas, I. (2008) Extracellular Namp1 protects macrophages from ER stress-induced apoptosis via a non-enzymatic interleukin-6/STAT3 signaling mechanism. *J. Biol. Chem.* **283**:34833–34843. PMC2596403
- *106. Seimon, T., Wang, Y., Kuriakose, G., Han, S., Senokuchi, T., Tall, A., Tabas, I. (2009) Macrophage deficiency of p38α MAPK promotes apoptosis and plaque necrosis in advanced atherosclerotic lesions in mice. *J. Clin. Invest.* **119**:886-898. PMC2662559
107. Sun, Y., Ishibashi, M., Seimon, T., Sharma, S.M., Fitzgerald, K.A., Samokhin, A.O., Wang, Y., Sayers, S., Aikawa, M., Jerome, G.W., Ostrowski, M.C., Bromme, D., Libby, P., Tabas, I., Welch, C.L., Tall, A.R. (2009) Free cholesterol accumulation in macrophage membranes activates Toll-like receptors, p38 MAP kinase and induces cathepsin K. *Circulation Res.* **104**:455-465. PMC2680702
- *108. Thorp, E., Li, G., Seimon, T.A., Kuriakose, G., Ron, D., Tabas, I. (2009) Reduced apoptosis and plaque necrosis in advanced atherosclerotic lesions of *Apoe*^{-/-} and *Ldlr*^{-/-} mice lacking CHOP. *Cell Metabolism* **9**:474-481. PMC2695925
- *109. Timmins, J., Ozcan, L., Seimon, T.A., Li, G., Malagelada, C., Backs, J., Backs, T., Bassel-Duby, R., Olson, E.N., Anderson, M.E., and Tabas, I. (2009) Calcium/calmodulin-dependent protein kinase II links endoplasmic reticulum stress with Fas and mitochondrial apoptosis pathways. *J. Clin. Invest.* **119**:2925-2941. PMC2752072

- *110. Li, G., Mongillo, M., Chin, K-T., Harding, H., Ron, D., Marks, A.R., and Tabas, I. (2009) Role of ERO1 α -mediated stimulation of inositol 1,4,5-triphosphate receptor activity in endoplasmic reticulum stress-induced apoptosis. *J. Cell Biol.* **186**:783-792. PMC2753154
- *111. Woo, C.W., Cui, D., Arrelano, J., Dorweiler, B., Harding, H., Fitzgerald, K.A., Ron, D., and Tabas, I. (2009) Adaptive suppression of the ATF4-CHOP branch of the unfolded protein response by toll-like receptor signaling. *Nature Cell Biol.* **11**:1473-1480. PMC2787632
112. Li, S., Sun, Y., Liang, C.P., Thorp, E.B., Han, S., Jehle, A.W., Saraswathi, V., Pridgen, B., Kanter, J.E., Li, R., Welch, C.L., Hasty, A.H., Bornfeldt, K.E., Tabas, I., Tall, A.R. (2009) Defective phagocytosis of apoptotic cells by macrophages in atherosclerotic lesions of *ob/ob* mice and reversal by a fish oil diet. *Circulation Res.* **105**:1072-1082. PMC2818555
- *113. Devlin, C., Pipalia, N.H., Liao, X., Schuchman, E.H., Maxfield, F.R., Tabas, I. (2009) Improvement in lipid and protein trafficking in Niemann-Pick C1 cells by correction of a secondary enzyme defect. *Traffic* **11**:601–615. PMC3000737
114. Yeboah, J., McNamara, C, Jiang, X.C., Tabas, I., Herrington, D.M., Burke, G.L., and Shea, S. (2010) Association of plasma sphingomyelin levels and incident coronary heart disease events in an adult population: multi ethnic study of atherosclerosis. *Arterio. Thromb. Vasc. Biol.* **30**:628-633. PMC2862629
115. Nawrocki, A.R., Hofmann, S.M., Teupser, D., Basford, J.E., Durand, J.L., Rickes, E.L., Jelicks, L.A., Tanowitz, H.B., Chang, C.H., Hui, D.Y., Woo, C.W., Kuriakose, G., Tabas, I., and Scherer, P.E. (2010) Adiponectin Effects on Atherogenesis in LDL Receptor Null Mice. *Arterio. Thromb. Vasc. Biol.* **30**:1159-1165. PMC2896306
116. Chandak, P.G., Radovic, B., Aflaki, E., Kolb, D., Buchebner, M., Rathke, N., Fröhlich, E., Haemmerle, G., Tabas, I., Zechner, R., Levak-Frank, S., and Kratky, D. (2010) Efficient phagocytosis requires triglyceride hydrolysis by adipose triglyceride lipase. *J. Biol. Chem.* **285**: 20192-20201. PMC2888432
117. Tam, C., Idone, V., Devlin, C., Tabas, I., Andrews, N.W. (2010) Exocytosis of acid sphingomyelinase upon cell injury triggers endocytosis and plasma membrane repair. *J. Cell. Biol.* **189**:1027-38. PMC2886342
118. Yvan-Charvet, L., Pagler, T.A., Seimon, T.A., Thorp, E., Welch, C.L., Witztum, J.L., Tabas, I., and Tall, A.R. (2010) ABCA1 and ABCG1 protect against oxidative stress-induced macrophage apoptosis during efferocytosis. *Circulation Res.* **106**:1861-1869. PMC2995809
119. Seimon, T.A., Kim, M.J., Blumenthal, A., Koo, J., Ehrt, S., Wainwright, H., Bekker, L.G., Kaplan, G., Nathan, C., Tabas, I., Russell, D.G. (2010) Induction of ER stress in macrophages of tuberculosis granulomas. *PLoS One.* 2010 Sep 15;5:e12772 . PMC2939897
- *120. Seimon, T.A., Liao, X., Magallon, J, Nguyen, M., Witztum, J.L., Tsimikas, S., Moore, K.J., Golenbock, D., and Tabas, I. (2010) Atherogenic lipids and lipoproteins trigger CD36-TLR2-dependent apoptosis in macrophages undergoing endoplasmic reticulum stress. *Cell Metabolism* **12**:467-82. PMC2991104

*121. Li, G., Scull, C., Ozcan, L., and Tabas, I. (2010) NADPH oxidase links endoplasmic reticulum stress, oxidative stress, and PKR activation to induce apoptosis. *J. Cell Biol.* **191**:1113-1125. PMC3002036

122. Shechtman, C.F., Henneberry, A.L., Seimon T., Wilcox, L., Tinkelenberg, A.H., Albala, A., Lee, E., Munkasci, A.B., Silverstein, S.C., Bussemaker, H.J., Tabas, I., and Sturley, S.L. (2011) Loss of ARV1 activates the unfolded protein response via disruption of lipid and organelle homeostasis. *J. Biol. Chem.* **286**: 11951-11959. PMC3069397

*123. Thorp, E., Iwawaki, T., Miura, M., and Tabas, I. (2011) A reporter for tracking the unfolded protein response in vivo reveals patterns of temporal and cellular stress during atherosclerotic progression. *J. Lipid Res.* **52**: 1033-1038. PMC3073465

124. Ouimet, M., Mak, E., Franklin, V., Liao, X., Tabas, I., and Marcel, Y.L. (2011) Lysosomal acid lipase regulates cholesterol efflux from macrophage foam cells via autophagy. *Cell Metabolism.* **13**: 655–667. PMC3257518

*125. Thorp, E., Vaisar, T., Subramanian, M., Mautner, L., Blobel, C., and Tabas, I. (2011) TLR-induced cleavage of mer tyrosine kinase at proline 483 by ADAM17 requires ROS and activation of PKC δ and P38 MAPK. *J. Biol. Chem.* **286**: 33335-33344. PMC3190938

126. Tsuchiya, K., Banks, A.S., Liang, C.P., Tabas, I., Tall, A.R., Accili, D. (2011) Homozygosity for an allele encoding deacetylated FoxO1 protects macrophages from cholesterol-induced inflammation without increasing apoptosis. *Arterioscler. Thromb. Vasc. Biol.* **31**: 2920-2928. PMC3220790

*127. Woo, C.W., Kutzler, L., Kimball, S.R., and I. Tabas (2012) Toll-like receptor activation suppresses ER stress factor CHOP and translation inhibition through activation of eIF2B. *Nature Cell Biol.* **14**:192-200. PMC3271190

128. Tsuchiya, K., Tanaka, J., Yu, S., Welch, C.L., DePinho, R.A., Tabas, I., Tall, A.R., Goldberg, I.J., Accili, D. (2012) FoxOs integrate pleiotropic actions of insulin in vascular endothelium to protect mice from atherosclerosis. *Cell Metabolism* **15**:372-81. PMC3315846

129. Ai, D., Baez, J.M., Jiang, H., Conlon, D.M., Hernandez-Ono, A., Murphy, A.J., Woo, C.W., Strong, A., Ginsberg, H.N., Tabas, I., Rader, D.J., Tall, A.R. (2012) The regulation of hepatic sortilin-1 in obese mice by activation of mTORC1 and ER stress. *J. Clin. Invest.* **122**: 1677-1687. PMC3336989

*130. Liao, X., Sluimer, J.C., Wang, Y., Subramanian, M., Brown, K., Pattison, J.S., Robbins, J., Martinez, J., and Tabas, I. (2012) Macrophage autophagy plays a protective role in advanced atherosclerosis. *Cell Metabolism* **15**: 545-53. PMC3322248

*131. Ozcan, L., Li, G., Xu, T., Pajvani, U., Park, S.K.R., Wronska, A., Chen, B.X., Marks, A.R., Fukamizu, A., Backs, J., Singer, H.A., Yates, J.R., III, Accili, D., Tabas I. (2012) Calcium signaling through CaMKII regulates hepatic glucose production in fasting and obesity. *Cell Metabolism* **15**: 739–751. PMC3348356

132. Wang, Y., Li, G., Goode, J., Paz, J.C., Sreaton, R., Fischer, W.H., Tabas, I., and Montminy, M. (2012) Inositol 1,4,5-trisphosphate receptor regulates fasting hepatic gluconeogenesis. *Nature* **485**:128-32. PMC3343222

133. Liang, C.P., Han, S., Li, G., Senokuchi, T., Tabas, I., Tall, A.R. (2012) Impaired MEK signaling and SERCA expression promotes ER stress and apoptosis in insulin resistant macrophages and is reversed by exenatide treatment. *Diabetes* **61**:2609-2620. PMC3447920
134. Richards, M.R., Black, A.S., Bonnet, D.J., Barish, G.D., Woo, C.W., Tabas, I., Curtiss, L.K., and Tobias, P.S. (2013) The LPS2 mutation in TRIF is atheroprotective in hyperlipidemic LDL receptor knockout mice. *Innate Immunity* **19**:20-9. PMC3434265
135. Rong, J.X., Blachford, C., Feig, J.E., Bander, I., Miller, C., Mayne, J., Kusunoki, J., Thorp, E., Tabas, I., Taubman, M.B., Rudel, L.L., Fisher, E.A. (2013) ACAT inhibition reduces the progression of pre-existing, advanced atherosclerotic mouse lesions without plaque or systemic toxicity. *Arterioscler. Thromb. Vasc. Biol.* **33**:4-12.
- *136. Subramanian, M., Thorp, E., Hansson, G.K., and Tabas, I. (2013) Treg-mediated suppression of atherosclerosis requires MYD88 signaling in dendritic cells. *J. Clin. Invest.* **123**:179-88. PMC3533292
- *137. Kamaly, N., Fredman, G., Subramanian, M., Gadde, S., Pesic, A., Cheung, L., Langer, R., Tabas, I., and Farokhzad, O. (2013) Development and in vivo efficacy of targeted polymeric inflammation-resolving nanoparticles. *Proc. Natl. Acad. Sci. U.S.A.* **110**:6506-6511. PMC3631648
- *138. Ozcan, L., Backs, J., Olson, E.N., and Tabas, I. (2013) Activation of calcium/calmodulin-dependent protein kinase II in obesity mediates suppression of hepatic insulin signaling. *Cell Metabolism* **18**:803-815.
- *139. Subramanian, M., Hayes, C.D., Thorp, E., Matsushima, G.K., Herz, J., Liu, K., Lakshmana, M., and Tabas, I. (2014) An AXL/LRP-1/RANBP9 complex mediates DC efferocytosis and antigen cross-presentation in vivo. *J. Clin. Invest.* **124**:1296-1308. PMC3934164
- *140 Wang, Y., Wang, G.Z., Rabinovitch, P.S., and Tabas, I. (2014) Macrophage mitochondrial oxidative stress promotes atherosclerosis and NF- κ B-mediated inflammation in macrophages. *Circulation Res.* **114**:421-433. Selected by Faculty 1000-Prime.
141. Wang, M., Subramanian, M., Abramowicz, S., Murphy, A.J., Gonen, A., Witztum, J., Welch, C., Tabas, I., Westerterp, M., Tall, A.R. (2014) IL-3/GM-CSF receptor promotes hematopoietic stem cell expansion, monocytosis, and atheroma macrophage burden in *Apoe*^{-/-} mice. *Arterioscler. Thromb. Vasc. Biol.* **34**:966-975.
- *142. Fredman, G., Ozcan, L., Spolitu, S., Hellmann, J., Spite, M., Backs, J., and Tabas, I. (2014) Resolvin D1 limits 5-lipoxygenase nuclear localization and leukotriene B₄ synthesis by inhibiting a calcium-activated kinase pathway. *Proc. Natl. Acad. Sci. U.S.A.* **111**:14530-5.
- *143. Subramanian, M., Thorp, E., and Tabas, I. (2014) Identification of a non-growth factor role for GM-CSF in advanced atherosclerosis: promotion of macrophage apoptosis and plaque necrosis through IL-23 signaling. *Circ. Res.* **116**:e13-24
144. Choi, W., Kamaly, N., Riol-Blanco, L., Lee, I.H., Wu, J., Archana Swami, A., Vilos, C., Yu, M., Shi, J., Tabas, I., von Andrian, U.H., Jon, S., and Farokhzad, O.C. (2014) A solvent-free thermosponge nanoparticle platform for efficient delivery of labile proteins. *Nano Lett.* **14**:6449-55.

*145. Fredman, G., Kamaly, N., Spolitu, S., Milton, J., Ghorpade, D., Chiasson, R., Kuriakose, G., Perritti, M., Farokhzad, O., and Tabas I. (2015) Targeted nanoparticles containing the pro-resolving peptide Ac2-26 protect against advanced atherosclerosis in hypercholesterolemic mice. *Science Transl. Med.* **7**, 275ra20.

*146. Subramanian, M., Ozcan, L., Ferrante, A.W., Jr., Tabas, I. (2015) Suppression of T cell activation in obese mice reveals the importance of innate relative to adaptive immunity in visceral fat inflammation and insulin resistance. *PLoS One* **10**:e0135842.

*147. Zhou, A.X., Lin, C.S., Nadolski, M., Kaufman, R.J., Tabas, I. (2015) C/EBP-homologous protein in vascular smooth muscle cells regulates their proliferation in aortic explants and atherosclerotic lesions. *Circ. Res.* **116**:1736-43.

*148. Ozcan, L., Xu, X., Deng, S.X., Ghorpade, D.S., Thomas, T., Cremers, S., Hubbard, B., Serrano-Wu, M.H., Gaestel, M., Landry, D.W., and Tabas, I. (2015) Treatment of obese insulin-resistant mice with an allosteric MAPKAP2 inhibitor lowers blood glucose and improves insulin sensitivity. *Diabetes* **64**:3396-3405.

*149. Ozcan, L., Ghorpade, D.S., Zheng, Z., de Souza, J.C., Chen, K., Bessler, M., Bagloo, M., Schrope, B., Pestell, R., and Tabas, I. (2016) Hepatocyte DACH1 is increased in obesity via nuclear exclusion of HDAC4 and promotes hepatic insulin resistance. *Cell Reports*. in press. NIHMS 784754

*150. Kamaly, N., Fredman, G., Fojas, J.J., Subramanian, M., Choi, W.I., Zepeda, K., Vilos, C., Yu, M., Gadde, S., Wu, J., Milton, J., Leitao, R., Rosa, L., Hasan, M., Gao, H., Nguyen, V., Harris, J., Tabas, I., and Farokhzad, O.C. (2016) Interleukin-10-targeted nanotherapeutics developed with a microfluidic chip enhance resolution of inflammation in advanced atherosclerosis. *ACS Nano*, in press

*151. Cai, B., Thorp, E.B., Doran, A.C., Subramanian, M., Sansbury, B.E., Lin, C.S., Spite, M., Fredman, G., Tabas, I. (2016) MerTK cleavage limits pro-resolving mediator biosynthesis and exacerbates tissue inflammation. *Proc. Natl. Acad. Sci. U.S.A.* In press.

*152. Fredman, G., Hellmann, J., Proto, J., Kuriakose, G., Colas, R.A., Dorweiler, B., Connolly, E.S., Solomon, R., Heyer, E.J., Spite, M., and Tabas, I. (2016) Atherosclerosis progression is associated with a decrease in pro-resolving mediators and can be mitigated by restoring resolvin D1. Manuscript in revision.

*153. Wang, X., Zheng, Z., Caviglia, J.M., Corey, K.E., Herfel, T., Masia, R., Chung, R., Lefkowitz, J.H., Schwabe, R.F., Tabas, I. (2016) TAZ promotes inflammation and liver fibrosis in diet-induced nonalcoholic steatohepatitis. Manuscript in revision.

*154. Subramanian, M., Proto J.D., Matsushima, G.K., Tabas, I. (2016) Deficiency of AXL in bone marrow-derived cells does not affect advanced atherosclerotic lesion progression. Submitted for publication.

Selected reviews:

*1. Tabas, I. and Glass, C.K. (2013) Anti-inflammatory therapy in chronic disease: challenges and opportunities. *Science* **339**:166-172. PMID:PMC3608517

*2. Tabas, I. (2012) Cardiology: Bad matters made worse. *Nature*. **487**:306-8. NIHMS526576 (PMC pending)

*3. Bornfeldt, K.E. and Tabas, I. (2011) Insulin resistance, hyperglycemia, and atherosclerosis. *Cell Metabolism* **14**:575-585. PMC3217209

*4. Tabas, I. (2011) Finding the culprit in your heart. Invited review for *Nature Med.* **17**:791-792. PMC3254051

*5. Moore, K.J. and Tabas, I. (2011) Macrophages in the pathogenesis of atherosclerosis. *Cell* **145**:341-355. PMC3111065

*6. Tabas, I. and Ron, D. (2010) Integrating the mechanisms of apoptosis induced by endoplasmic reticulum stress. *Nature Cell Biol.* **13**:184-190. PMC3107571

*7. Tabas, I. (2010) The role of endoplasmic reticulum stress in the progression of atherosclerosis. *Circulation Res.* **107**:839-850. PMC2951143

*8. Tabas, I., Tall, A.R., Accili, D.A. (2009) The impact of macrophage insulin resistance on advanced atherosclerotic plaque progression. *Circulation Res.* **106**:58-67. PMC2805467

*9. Tabas, I. (2010) Macrophage death and defective inflammation resolution in atherosclerosis. *Nature Immunol. Reviews.* **10**:36-46. PMC2854623

*10. Subramanin, M. and Tabas, I. (2014) A new RIDDLE in DC-mediated cross-presentation. *Nature Immunol.* **15**:213-215.

*11. Fredman G, Ozcan L, and Tabas I. (2014) Common therapeutic targets in cardiometabolic disease. *Sci Transl Med.* **6**:239ps5.

Complete list of reviews, chapters, and letters-to-editor:

1. Tabas, I., Li, E., Michael, M. and Kornfeld, S. (1979) Oligosaccharide processing during glycoprotein biosynthesis. IN *From Gene to Protein: Information Transfer in Normal and Abnormal Cells* (Russell, T.R., Brew, K., Faber, H., and Schultz, J., eds.), Miami Winter Symposium **16**, Academic Press, New York, pp. 425-532.

2. Kornfeld, S., Tabas, I., Michael, M. and Chapman, A. (1979) Oligosaccharide processing during glycoprotein biosynthesis. IN *Glycoconjugates: Proceedings of the Fifth International Symposium* (Schauer, R., Boer, P., Buddecke, E., Kramer, M.F., Vliegenthart, J.F.G., and Wiegant, H., eds.), Georg Thieme, Stuttgart, p. 309.

*3. Tabas, I., Boykow, G.C., Weiland, D.A., and Tall, A.R. (1987) The J774 macrophage model of native LDL-induced foam cell formation. IN *Cardiovascular Disease: Molecular and Cellular Mechanisms, Prevention, and Treatment* (Gallo, L., ed.), Plenum, New York, pp. 121-132.

*4. Tabas, I. (1990) Mechanisms of atheroma foam cell formation: The role of intracellular lipoprotein-cholesterol metabolism. IN *Drugs Affecting Lipid Metabolism X* (Grotto, A.M., Jr. and Smith, L.C., eds.), Excerpta Medica, New York, pp. 93-122.

*5. Tabas, I. (1994) Atherosclerosis: cell biology and lipoproteins. Editorial comment. *Curr. Opin. Lipidol.* **5**:U126-U131.

*6. Williams, K.J., and Tabas, I. (1995) The response-to-retention hypothesis of early atherogenesis. *Arterio. Thromb. Vasc. Biol.* **15**:551-561.

- *7. Tabas, I. (1995) The stimulation of the cholesterol esterification pathway by atherogenic lipoproteins in macrophages. *Curr. Opin. Lipidol.* **6**:260-268.
- *8. Tabas, I. (1997) Atherosclerosis: cell biology and lipoproteins. Editorial comment. *Curr. Opin. Lipidol.* **8**:U25-U27.
- *9. Tabas, I. (1997) Free cholesterol-induced cytotoxicity. A possible contributing factor to macrophage foam cell necrosis in advanced atherosclerotic lesions. *Trends Cardiovasc. Med.* **7**:256-263.
- *10. Tabas, I. (1997) Phospholipid metabolism in cholesterol-loaded macrophages. *Curr. Opin. Lipidol.* **8**:263-267.
- *11. Tabas, I., Schissel, S.L., Williams, K.J., Schuchman, E.H., Rapp, J.H., and Tweedie-Hardman, J. (1998) Arterial-wall sphingomyelinase and atherogenesis. IN *Atherosclerosis XI: Proceedings of the XIth International Symposium on Atherosclerosis* (Jacotot, B., Mathé, D., and Fruchart, J.-C., eds.), Elsevier Science, Singapore, pp. 895-901.
- *12. Tabas, I. (1998) Mechanism of cholesterol loading in macrophages. IN *Intracellular Cholesterol Trafficking* (Chang, T.Y. and Freeman, D., eds.), Kluwer, Amsterdam, pp. 183-196.
- *13. Williams, K.J., and Tabas, I. (1998) The response-to-retention hypothesis of atherogenesis, reinforced. *Curr. Opin. Lipidol.* **9**:471-474.
- *14. Tabas, I., and Krieger, M. (1999) Lipoprotein receptors and cellular cholesterol metabolism in health and disease. IN *Molecular Basis of Cardiovascular Disease* (Chien, K.R., ed.), W.B. Saunders Company, New York, pp. 428-457.
- *15. Tabas, I. (1999) Secretory sphingomyelinase. *Chem. Phys. Lipids.* **102**:123-130.
- *16. Tabas, I. (1999) Non-oxidative atherogenic modifications of lipoproteins in the arterial wall. *Ann. Rev. Nutrition.* **19**:123-139.
- *17. Williams, K.J., and Tabas, I. (1999) Correspondence to "Atherosclerosis—An Inflammatory Disease." *New Engl. J. Med.* **340**:1928.
- *18. Tabas, I. (2000) Cholesterol and phospholipid metabolism in macrophages. *Biochem. Biophys. Acta* **1529**:164-174.
- *19. Tabas, I. and Kovanen, P.T. (2000) In search of an endpoint. *Curr. Opin. Lipidol.* **11**:447-450.
- *20. Tabas, I. (2001) p53 and atherosclerosis. *Circ. Res.* **88**:747-749.
- *21. Kovanen, P.T. and Tabas, I. (2001) In search of starting point. *Curr. Opin. Lipidol.* **12**:475-6.
- *22. Tabas, I. (2002) Lipid and atherosclerosis. IN *Biochemistry of Lipids, Lipoproteins, and Membranes* (Vance, D.E. and Vance, J., eds.), Elsevier, Amsterdam. 4th Edition, pp. 573-597.
- *23. Tabas, I. (2002) Cholesterol in health and disease. *J. Clin. Invest.* **110**:583-590 .

- *24. Tabas, I. (2002) Consequences of cellular cholesterol accumulation. *J. Clin. Invest.* **110**:955-911.
- *25. Williams, K.J., and Tabas, I. (2002) Atherosclerosis and inflammation (Correspondence) *Science.* **297**:521-522.
- *26. Tabas, I. (2004) Cellular cholesterol metabolism in health and disease. IN *Molecular Basis of Cardiovascular Disease* (Chien, K.R., ed.), W.B. Saunders Company, New York, pp. 414-431.
- *27. Tabas, I (2004) Signal transduction pathways in free cholesterol-loaded macrophages: cell biological insight into the progression of atherosclerosis. IN *Atherosclerosis XIII. Proceedings of the 13th International Atherosclerosis Symposium* (Matsuzawa, Y., Kita, T., Nagai, R., and Teramoto, T., eds.), International Congress Series, Vol. 1262, Elsevier, Amsterdam, pp. 392-395.
- *28. Tabas, I (2004) Apoptosis and plaque destabilization in atherosclerosis: the role of macrophage apoptosis induced by cholesterol. *Cell Death Diff.* **11**:S12-S16.
- *29. Tabas, I. (2004) Sphingolipids and Atherosclerosis: A Mechanistic Connection? A Therapeutic Opportunity? *Circulation.* **110**:3400-3401.
- *30. Williams, K.J. and Tabas, I. (2005) Lipoprotein regression—and clues for atheroma regression. *Arterio. Thromb. Vasc. Biol.* **25**:1536-40.
- *31. Tabas, I. (2005) Balancing statin risk and benefit. CME monograph developed by Medical Education Resources, Inc. and Educational Concepts in Medicine.
- *32. Tabas, I. (2005) Consequences and therapeutic implications of macrophage apoptosis in atherosclerosis. The importance of lesion stage and phagocytic efficiency. *Arterio. Thromb. Vasc. Biol.* **25**:2255-2264.
33. Maxfield, F.R. and Tabas, I. (2005) Membrane pathophysiology and disease. *Nature* **438**:612-621.
34. Williams, K.J. and Tabas, I. (2006) Letter by Williams and Tabas regarding article "Atherosclerosis 2005: Recent Discoveries and Novel Hypotheses. *Circulation* **113**: e782.
- *35. Tabas, I (2006) A two-carbon switch to sterol-induced autophagic death. *Autophagy.* **3**:38-41.
- *36. Tabas, I. (2007) Lipid and atherosclerosis. IN *Biochemistry of Lipids, Lipoproteins, and Membranes* (Vance, D.E. and Vance, J., eds.), Elsevier, Amsterdam. 5th Edition, In press.
- *37. Tabas, I. (2007) Macrophage death, plaque necrosis, and insulin resistance. *Clin. Invest. Arterioscl. Suppl.* **3**, 53-55.
- *38. Tabas I (2007) Apoptosis and efferocytosis in mouse models of atherosclerosis. *Current Drug Targets* **8**:1288-1296.
- *39. Tabas, I., Williams, K.J., Borén, J. (2007) Subendothelial lipoprotein retention as the initiating process in atherosclerosis. Update and therapeutic implications. *Circulation* **116**:1832-44.

- *40. Tabas, I., Seimon, T., Arrelano, J., Li, Y., Forcheron, F., Cui, D., Han, S., Liang, C.P., Tall, A., and Accili, D. (2007) The impact of insulin resistance on macrophage death pathways in advanced atherosclerosis. IN *Fatty Acids and Lipotoxicity in Obesity and Diabetes*. Novartis Foundation Symposium 286. John Wiley & Sons, Ltd., Chichester, UK, pp. 99-112.
- *41. Tabas, I. (2007) Clinical and mechanistic links between diabetes and heart disease. Medscape online: <http://www.medscape.com/viewarticle/566297>.
42. Klionsky, D., *et al.* (2008) Guidelines for the use and interpretation of assays for monitoring autophagy in higher eukaryotes. *Autophagy* **4**:2-25. PMC2654259
- *43. Tabas, I., Seimon, T., Timmins, J., Li, G., and Lim, W. (2009) Macrophage apoptosis in advanced atherosclerosis. *Annals N.Y. Acad. Sci.* **1173**:E40–E45 PMC2762639
- *44. Tabas, I. (2009) Macrophage apoptosis in atherosclerosis: consequences on plaque progression and the role of endoplasmic reticulum stress. *Antioxid. Redox Signal.* **11**:2333-2339. PMC2787884
- *45. Seimon, T. and Tabas, I. (2009) Mechanisms and consequences of macrophage apoptosis in atherosclerosis. *J. Lipid Res.*, Suppl:S382-7. PMC2674693
- *46. Thorp E. and Tabas, I. (2009) Mechanisms and consequences of efferocytosis in advanced atherosclerosis. *J. Leukocyte Biol.* **86**:1089-1095. PMC2774877
- *47. Thorp, E. and Tabas, I. (2009) Differential effects of pioglitazone on advanced atherosclerotic lesions. Correspondence, *Am. J. Pathol.* **175**:1348. PMC2731152
- *48. Tabas, I. (2010) Macrophage death and defective inflammation resolution in atherosclerosis. *Nature Immunol. Reviews.* **10**:36-46. PMC2854623
- *49. Tabas, I., Tall, A.R., Accili, D.A. (2009) The impact of macrophage insulin resistance on advanced atherosclerotic plaque progression. *Circulation Res.* **106**:58-67. PMC2805467
- *50. Ozcan, L, Tabas, I. (2010) Pivotal role of calcium/calmodulin-dependent protein kinase II in ER stress-induced apoptosis. *Cell Cycle* **9**:223-4. PMC2846633
- *51. Tabas, I. (2010) The role of endoplasmic reticulum stress in the progression of atherosclerosis. *Circulation Res.* **107**:839-850. PMC2951143
- *52. Tabas, I. and Ron, D. (2010) Integrating the mechanisms of apoptosis induced by endoplasmic reticulum stress. *Nature Cell Biol.* **13**:184-190. PMC3107571
- *53. Moore, K.J. and Tabas, I. (2011) Macrophages in the pathogenesis of atherosclerosis. *Cell* **145**:341-355. PMC3111065
- *54. Tabas, I. (2011) Finding the culprit in your heart. Invited review for *Nature Med.* **17**:791-792. PMC3254051

*55. Thorp, E., Subramanian, M., and Tabas, I. (2011) The role of macrophages and dendritic cells in clearance of apoptotic cells in advanced atherosclerosis. *Eur. J. Immunol.* **41**:2515-2518. NIHMSID #358453

*56. Bornfeldt, K.E. and Tabas, I. (2011) Insulin resistance, hyperglycemia, and atherosclerosis. *Cell Metabolism* **14**:575-585. PMC3217209

*57. Scull, C.M. and Tabas, I. (2011) Mechanisms of ER stress-induced apoptosis in atherosclerosis. Invited review for *Arterio. Thromb. Vasc. Biol.* **12**:2792-2797. PMC3220876

*58. Ozcan, L. and Tabas, I. (2012) Role of endoplasmic reticulum stress in metabolic disease and other disorders. Invited review for *Ann. Rev. Med.* **63**:317-328. NIHMSID #358474

*59. Thorp, E., Ozcan, L., and Tabas, I. (2013) Interference with ER stress and restoration of efferocytosis in the treatment of advanced atherosclerosis. In: *Advances in Atherosclerosis: Treatment and Prevention*. Pan Stanford Publishing Pte. Ltd, Singapore. Pages 299-339.

*60. Tabas, I. (2012) Cardiology: Bad matters made worse. *Nature*. **487**:306-8.

61. Klionsky, D.J., et al. (2012) Guidelines for the use and interpretation of assays for monitoring autophagy. *Autophagy* **8**:445-544. PMC3404883

*62. Tabas, I. and Glass, C.K. (2013) Anti-inflammatory therapy in chronic disease: challenges and opportunities. *Science* **339**:166-172.

*63. Zhou A.X. and Tabas I. (2013) The UPR in atherosclerosis. *Semin Immunopathol.* Online.

*64. Fredman, G. and Tabas, I. (2013) Macrophages govern the progression and termination of inflammation in atherosclerosis and metabolic diseases. In *Macrophages: Biology and Role in the Pathology of Diseases*. Biswas, S. and Mantobani, A. eds. Springer.

*65. Subramanian, M. and Tabas, I. (2013) Dendritic cells in atherosclerosis. *Seminars Immunopathol.* **36**:93-102.

*66. Subramanian, M. and Tabas, I. (2014) A new RIDDle in DC-mediated cross-presentation. *Nature Immunol.* **15**:213-215.

67. Libby, P., Tabas, I., Fredman, G., and Fisher, E. (2014) Inflammation and its resolution as determinants of acute coronary syndromes. *Circulation Res.* **114**:1867-1879.

*68. Wang, Y. and Tabas, I. (2014) Emerging roles of mitochondria ROS in atherosclerotic lesions: causation. *J. Athero. Thromb.* **21**:381-390.

*69. Ozcan L. and Tabas I. (2014) CaMKII in cardiometabolic disease. *Aging* **6**:430-1.

*70. Fredman G., Ozcan L., and Tabas I. (2014) Common therapeutic targets in cardiometabolic disease. *Sci Transl Med.* **6**:239ps5.

71. Daugherty, A. Tabas, I., Rader, D. (2015) Accelerating the pace of atherosclerosis research. *Arterio. Thromb. Vasc. Biol.* **35**:11-2.

72. Tabas, I., García-Cardeña, G., and Owens, G.K. (2015) Recent insights into the cellular biology of atherosclerosis. *J. Cell Biol.* **209**:13-22.

73. Hansson, G.K., Libby, P., Tabas, I. (2015) Inflammation and plaque vulnerability. *J. Internal Med.* **278**:483-93.

74. Bornfeldt, K. and Tabas, I. (2015) Macrophage phenotype and function in different stages of atherosclerosis. *Circulation Res.* **118**:653-67.

XV. Patents and Invention Reports

1. U.S. Patent: "Triterpene Derivatives Cholesterol Acyltransferase Inhibitors and Methods of Using Same." Ira Tabas, Inventor; January 22, 1991; Patent Number 4, 987,151.

2. U.S. Patent: "Methods for Treating Conditions with Elevated Levels of Zinc Sphingomyelinase." Ira Tabas, Scott Schissel, and Kevin J. Williams, Inventors. November 23, 1999; Patent Numbers 5,989,803 and 6,613,322.

3. U.S. Patent: "Human Genetic Clone Encoding Human Chondroitin 6-Sulfotransferase." Kevin J. Williams and Ira Tabas, Inventors. October 10, 1997. Patent Number 6,399,358.

4. Pending U.S. Patent: "Methods for Identifying Compounds Useful For Preventing Acute Clinical Vascular Events In A Subject."

5. Pending U.S. Patent: "The use of very low-dose amphipathic amines or others inhibitors of the npc1 pathway to induce ABCA1-mediated macrophage cholesterol efflux, reverse cholesterol transport, and regression of atherosclerotic vascular disease."

6. U.S. Patent Application: "Prevention of Acute Cardiovascular Clinical Events Through Adiponectin and Adiponectin Signaling."

7. U.S. Patent Application: "Phagocyte Enhancement Therapy for Atherosclerosis." IR 1845, US CIP #12/035,899, filed 2/2208.

8. U.S. Patent Application: "Visfatin and Uses Thereof." IR 2166, US CNV # 12/123/988, filed 5/20/08 and published 1/15/09 (Publ. # US-2009-0010876-A1).

9. U.S. Patent Application: "Soluble Mer: Methods and Composition." IR 2418 US Provisional, filed 9/08

10. International Application No. PCT/US2012/053552: "CaMKII, IP3R, Calcineurin, P38 and MK2/3 Inhibitors to Treat Metabolic Disturbances of Obesity" Filed August 12, 2012, with national stage/international filing March-April, 2014.

11. International Application PCT WO 2014/145749 A1: "Targeted Polymeric Inflammation-Resolving Nanoparticles." Filed September 18, 2014.

12. U.S. Provisional Patent Application Serial No.: 62/120,549 "Dipeptidyl Peptidase-IV (DPP4) Inhibitors, Methods and Compositions for Suppressing Adipose Tissue Inflammation." Filed February 25, 2015.

13. U.S. Provisional Patent Application Serial No.: 62/323,903 "Therapeutic Targets Involved in the Progression of Nonalcoholic Steatohepatitis (NASH)." Filed April 18, 2016.