

CURRICULUM VITAE

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Home Address: 328 Hanover Center Rd, Etna, NH 03750

Date of Birth: April 8, 1945

Citizenship: USA

Education:

B.S. in Chemistry, National Taiwan University, Taiwan, 1967

Ph.D. in Biochemistry (with Mary Ellen Jones), University of North Carolina, Chapel Hill, North Carolina, 1968-1973

Postdoctoral Fellow (with Roy Vagelos), Dept of Biological Chemistry, Washington University School of Medicine, St. Louis, Missouri, 1973-1975

Postdoctoral Fellow (with Roy Vagelos), Merck, Sharp & Dohme Research Laboratories, Rahway, New Jersey, 1975-1976

Professional Experience:

1976-1982 Assistant Professor, Dept of Biochemistry, Dartmouth Medical School

1982-1988 Associate Professor, Dept of Biochemistry, Dartmouth Medical School

1988-2000 Professor, Dept of Biochemistry, Dartmouth Medical School

2000-2008 Professor and Chair, Dept of Biochemistry, Dartmouth Medical School

2008-present Professor, Dept of Biochemistry and Cell Biology, Dartmouth Medical School

Membership:

American Society of Biological Chemists and Molecular Biologists, 1981-present

American Society of Cell Biologists, 1999-present

American Heart Association, 2000-present

American Association for the Advancement of Science, 2007-present

Extramural Activities:

Visiting Professor, Kumamoto University Medical School, Kumamoto, Japan (1995-1997; 1999-2000)

Member, American Heart Association National Review Committee on Lipids and Lipoproteins (1998-2002; Co-Chair, 2001).

Member, NIH Integrative Nutrition & Metabolic Processes Study Section (2005-2009)

Member of Editorial Board, Journal of Biological Chemistry (1995-2000; 2001-2006; 2009-2014)

Member of Editorial Board, Acta Biochimica et Biophysica Sinica (2005-2020)

Member of Editorial Board, Journal of Lipid Research (2018-2021)

Associate Editor, Explorations in Neuroprotective Therapy (2021-2023)

Associate Editor, Frontiers of Aging Neuroscience (2022-2025)

Associate Editor, *National Science Open, in Life Sciences and Medicine* (2021-2026)

Consultantships:

Parke-Davis Pharmaceuticals, Ann-Arbor, MI (1992-1994)

Pierre-Fabre Pharmaceutical Laboratories, Castres, France (1998-2000)

Chugai Pharmaceuticals, Gotemba, Japan (1998-2001)

National Health Research Institutes, Biopharmaceutical Division, Taiwan (2002-2016)

Honors:

NIH Research Career Development Award (1982-1987)

NIH MERIT Award (1994-2004)

Elected AAAS Fellow (2011)

Elected National Academy of Sciences Member (2021)

Current Research Support:

1. NIH RO1 AG063544 Chang, TY (PI); Chang, Catherine (co-I)
09/30/2018-05/31/2023

Alleviating lysosomal defects in ADRDs by blocking cholesterol storage

The goal of this project is to use small molecule ACAT inhibitors to ameliorate lysosomal defects in Alzheimer's disease and AD related diseases.

Highlight of TYC's Scientific Accomplishment:

At Dartmouth, my laboratory isolated and characterized four classes of Chinese hamster ovary (CHO) cell mutants in cellular cholesterol metabolism (1978-1994). Each of these mutants led to a new gene: Two of these mutants were used as cloning vehicles in the Brown and Goldstein laboratory to identify the *Scap* gene (1996) and the *S2p* gene (1997), which participate in the sterol regulatory element binding protein (SREBP) dependent transcriptional control of many genes in lipid metabolism. The third mutant was used in the Pentchev laboratory at NIH to help identify the Niemann-Pick type C1 (*Npc1*) gene (1997), which plays a key role in intracellular cholesterol transport. The single most significant scientific accomplishment of my laboratory is that, in 1993, we used the fourth CHO cell mutant as the cloning vehicle to identify the *Acat1* gene. ACAT1 is a membrane-bound enzyme located at the endoplasmic reticulum; it plays a key role in cellular cholesterol homeostasis; however, the molecular identity of ACAT had remained elusive for many years. For identifying the *Acat1* gene, I received a MERIT Award from NIH. My laboratory has continued to work on ACAT related research to the present. We purified the recombinant ACAT1 to homogeneity as a single protein and demonstrated that unlike many other enzymes in lipid metabolism, ACAT1 is not transcriptionally regulated by SREBP, but is regulated through sterol dependent allosteric control. We showed that ACAT1 is present ubiquitously in all body cells, including cells in the brain. We identified ACAT1's active sites and showed that ACAT1 is a homo-tetrameric enzyme with nine membrane-spanning domains (1993-2005). More recently, my laboratory demonstrated that ACAT1 is a target for several human diseases including Alzheimer's disease and Niemann-Pick type C disease (2010-present). The identification of the *Acat1* gene also paved the way for molecular studies of other membrane-bound acyltransferase (MBOAT) family members, which include enzymes involved in neutral lipid biosynthesis, in membrane phospholipid remodeling, and in acylation of the peptide hormone ghrelin.

Recent Invited Lectures at National/International Meetings (2006-2021)

1. Keystone Symposium on Lipid Rafts (2006)
2. Argentina National Biochemistry Society Meeting (as a keynote speaker) (2007)
3. Taiwan National Health Research Institute Distinguished Lecturer Series (2008)
4. International Congress of Biochemistry & Molecular Biology (2009)
5. Gordon Research Conference on Lipoprotein Metabolism (2010)
6. International Symposium on Macrophages, Japan (2010)
7. International Symposium on Lipid Biology (also as a session chair), China (2010)
8. Japanese National Biochemical Society Meeting (2011)
9. Cold Spring Harbor Asia Meeting in Metabolism and Obesity (2013)
10. FASEB Meeting in Lipid Droplets (also as a session chair) (2014)
11. The 2015 Alzheimer's Disease Congress, London, UK (2015)
12. Drug Discovery and Therapy World Congress (also as a session co-chair), Boston (2015)
13. Neurological Disorders Summit (also as an organization committee member), San Francisco (2015)
14. Meeting the Challenge of Healthy Aging, EuroSciCon, London (2017)
15. Organizer for JLR thematic series on "ApoE and Lipid Homeostasis in Alzheimer's Disease (2017)
16. The Third Annual Conference of Chinese Society for Metabolic Biology, Shanghai (as a Keynote speaker) (2019)
17. Japanese National Biochemical Society Meeting (2019)
18. Diabetes Virtual Summer Camp, Wellesley, Massachusetts (2020)
19. One of two organizers for the special issue of Exploration in Neuroprotection Therapy on "Cholesterol dyshomeostasis in neurological diseases" (2021)
20. French National Atherosclerosis Society Webinar on "Cholesterol trafficking in atherosclerosis" (2022)

Publication List

I. Original Publications in Peer-Reviewed Journals:

1. Chang, T. Y., and M. E. Jones. 1974. Aspartate transcarbamylase from *Streptococcus faecalis*. Purification, properties, and nature of an allosteric activator site. *Biochemistry* 13: 629-638.
2. Chang, T. Y., and M. E. Jones. 1974. Aspartate transcarbamylase from *Streptococcus faecalis*. Steady-state kinetic analysis. *Biochemistry* 13: 638-645.
3. Chang, T. Y., and M. E. Jones. 1974. Aspartate transcarbamylase from *Streptococcus faecalis*. Reverse reaction and binding studies. *Biochemistry* 13: 646-653.
4. Chang, T. Y., and P. R. Vagelos. 1976. Isolation and characterization of an unsaturated fatty acid-requiring mutant of cultured mammalian cells. *Proceedings of the National Academy of Sciences of the United States of America* 73: 24-28.
5. Chang, T. Y., C. Telakowski, W. V. Heuvel, A. W. Alberts, and P. R. Vagelos. 1977. Isolation and partial characterization of a cholesterol-requiring mutant of Chinese hamster ovary cells. *Proceedings of the National Academy of Sciences of the United States of America* 74: 832-836.
6. Nelson, J.A., M.R. Czarny, T.A. Spencer, J.S., Limanek, K.R. McCrae, , and T.Y. Chang. 1978. A Novel Inhibitor of Steroid Biosynthesis. *J. Am. Chem. Soc.* 100, 4900 (1978)
7. Limanek, J. S., J. Chin, and T. Y. Chang. 1978. Mammalian cell mutant requiring cholesterol and unsaturated fatty acid for growth. *Proceedings of the National Academy of Sciences of the United States of America* 75: 5452-5456.
8. Chang, T. Y., E. S. Schiavoni, Jr., K. R. McCrae, J. A. Nelson, and T. A. Spencer. 1979. Inhibition of cholesterol biosynthesis in Chinese hamster ovary cells by 4,4,10 beta-trimethyl-trans-decal-3 beta-ol. A specific 2,3-oxidosqualene cyclase inhibitor. *The Journal of biological chemistry* 254: 11258-11263.
9. Chang, T. Y., and J. S. Limanek. 1980. Regulation of cytosolic acetoacetyl coenzyme A thiolase, 3-hydroxy-3-methylglutaryl coenzyme A synthase, 3-hydroxy-3-methylglutaryl coenzyme A reductase, and mevalonate kinase by low density lipoprotein and by 25-hydroxycholesterol in Chinese hamster ovary cells. *The Journal of biological chemistry* 255: 7787-7795.
10. Chang, T. Y., J. S. Limanek, and C. C. Y. Chang. 1981. Evidence indicating that inactivation of 3-hydroxy-3-methylglutaryl coenzyme A reductase by low density lipoprotein or by 25-hydroxycholesterol requires mediator protein(s) with rapid turnover rate. *The Journal of biological chemistry* 256: 6174-6180.
11. Chin, J., and T. Y. Chang. 1981. Evidence for coordinate expression of 3-hydroxy-3-methylglutaryl coenzyme A reductase and low density lipoprotein binding activity. *The Journal of biological chemistry* 256: 6304-6310.
12. Chang, T. Y., J. S. Limanek, and C. C. Y. Chang. 1981. A simple and efficient procedure for the rapid homogenization of cultured animal cells grown in monolayer. *Anal. Biochem.* 116: 298-302.

13. Berry, D. J., and T. Y. Chang. 1982. Further characterization of a Chinese hamster ovary cell mutant defective in lanosterol demethylation. *Biochemistry* 21: 573-580.
14. Doolittle, G. M., and T. Y. Chang. 1982. Solubilization, partial purification, and reconstitution in phosphatidylcholine-cholesterol liposomes of acyl-CoA:cholesterol acyltransferase. *Biochemistry* 21: 674-679.
15. Chin, J., and T. Y. Chang. 1982. Further characterization of a Chinese hamster ovary cell mutant requiring cholesterol and unsaturated fatty acid for growth. *Biochemistry* 21: 3196-3202.
16. Chang, T. Y., and C. C. Y. Chang. 1982. Revertants of Chinese hamster ovary cell mutant resistant to suppression by analog of cholesterol-isolation and partial characterization. *Biochemistry* 21: 5316-5323.
17. Doolittle, G. M., and T. Y. Chang. 1982. Acyl-CoA:cholesterol acyltransferase in Chinese hamster ovary cells. Enzyme activity determined after reconstitution in phospholipid/cholesterol liposomes. *Biochimica et biophysica acta* 713: 529-537.
18. Chang, C. C. Y., G. M. Doolittle, and T. Y. Chang. 1986. Cycloheximide sensitivity in regulation of acyl coenzyme A:cholesterol acyltransferase activity in Chinese hamster ovary cells. 1. Effect of exogenous sterols. *Biochemistry* 25: 1693-1699.
19. Chang, C. C. Y., and T. Y. Chang. 1986. Cycloheximide sensitivity in regulation of acyl coenzyme A:cholesterol acyltransferase activity in Chinese hamster ovary cells. 2. Effect of sterol endogenously synthesized. *Biochemistry* 25: 1700-1706.
20. Ventimiglia, J. B., M. C. Levesque, and T. Y. Chang. 1986. Preparation and characterization of unilamellar vesicles from cholate-phospholipid micelle treated with cholestyramine. *Analytical biochemistry* 157: 323-330.
21. Cadigan, K. M., J. G. Heider, and T. Y. Chang. 1988. Isolation and characterization of Chinese hamster ovary cell mutants deficient in acyl-coenzyme A:cholesterol acyltransferase activity. *The Journal of biological chemistry* 263: 274-282.
22. Cadigan, K. M., and T. Y. Chang. 1988. A simple method for reconstitution of CHO cell and human fibroblast acyl coenzyme A: cholesterol acyltransferase activity into liposomes. *Journal of lipid research* 29: 1683-1692.
23. Cadigan, K. M., C. C. Y. Chang, and T. Y. Chang. 1989. Isolation of Chinese hamster ovary cell lines expressing human acyl-coenzyme A/cholesterol acyltransferase activity. *The Journal of cell biology* 108: 2201-2210.
24. Shi, S. P., C. C. Y. Chang, G. W. Gould, and T. Y. Chang. 1989. Comparison of phosphatidylethanolamine and phosphatidylcholine vesicles produced by treating cholate-phospholipid micelles with cholestyramine. *Biochimica et biophysica acta* 982: 187-195.
25. Cadigan, K. M., D. M. Spillane, and T. Y. Chang. 1990. Isolation and characterization of Chinese hamster ovary cell mutants defective in intracellular low density lipoprotein-cholesterol trafficking. *The Journal of cell biology* 110: 295-308.
26. Hasan, M. T., R. Subbaroyan, and T. Y. Chang. 1991. High-efficiency stable gene transfection using chloroquine-treated Chinese hamster ovary cells. *Somatic cell and molecular genetics* 17: 513-517.
27. Chang, C. C. Y., H. Y. Huh, K. M. Cadigan, and T. Y. Chang. 1993. Molecular cloning and functional expression of human acyl-coenzyme A:cholesterol acyltransferase

cDNA in mutant Chinese hamster ovary cells. *The Journal of biological chemistry* 268: 20747-20755.

28. Hasan, M. T., C. C. Y. Chang, and T. Y. Chang. 1994. Somatic cell genetic and biochemical characterization of cell lines resulting from human genomic DNA transfections of Chinese hamster ovary cell mutants defective in sterol-dependent activation of sterol synthesis and LDL receptor expression. *Somatic cell and molecular genetics* 20: 183-194.
29. Chang, C. C. Y., W. W. Noll, N. Nutile-McMenemy, E. A. Lindsay, A. Baldini, W. Chang, and T. Y. Chang. 1994. Localization of acyl coenzyme A:cholesterol acyltransferase gene to human chromosome 1q25. *Somatic cell and molecular genetics* 20: 71-74.
30. Hasan, M. T., and T. Y. Chang. 1994. Somatic cell genetic analysis of two classes of CHO cell mutants expressing opposite phenotypes in sterol-dependent regulation of cholesterol metabolism. *Somatic cell and molecular genetics* 20: 481-491.
31. Spillane, D. M., J. W. Reagan, Jr., N. J. Kennedy, D. L. Schneider, and T. Y. Chang. 1995. Translocation of both lysosomal LDL-derived cholesterol and plasma membrane cholesterol to the endoplasmic reticulum for esterification may require common cellular factors involved in cholesterol egress from the acidic compartments (lysosomes/endosomes). *Biochimica et biophysica acta* 1254: 283-294.
32. Cheng, D., C. C. Y. Chang, X. Qu, and T. Y. Chang. 1995. Activation of acyl-coenzyme A:cholesterol acyltransferase by cholesterol or by oxysterol in a cell-free system. *The Journal of biological chemistry* 270: 685-695.
33. Uelmen, P. J., K. Oka, M. Sullivan, C. C. Y. Chang, T. Y. Chang, and L. Chan. 1995. Tissue-specific expression and cholesterol regulation of acylcoenzyme A:cholesterol acyltransferase (ACAT) in mice. Molecular cloning of mouse ACAT cDNA, chromosomal localization, and regulation of ACAT in vivo and in vitro. *The Journal of biological chemistry* 270: 26192-26201.
34. Chang, C. C. Y., J. Chen, M. A. Thomas, D. Cheng, V. A. Del Priore, R. S. Newton, M. E. Pape, and T. Y. Chang. 1995. Regulation and immunolocalization of acyl-coenzyme A: cholesterol acyltransferase in mammalian cells as studied with specific antibodies. *The Journal of biological chemistry* 270: 29532-29540.
35. Matsuda, H., H. Hakamata, A. Miyazaki, M. Sakai, C. C. Y. Chang, T. Y. Chang, S. Kobori, M. Shichiri, and S. Horiuchi. 1996. Activation of acyl-coenzyme A:cholesterol acyltransferase activity by cholesterol is not due to altered mRNA levels in HepG2 cells. *Biochimica et biophysica acta* 1301: 76-84.
36. Carstea, E. D., J. A. Morris, K. G. Coleman, S. K. Loftus, D. Zhang, C. Cummings, J. Gu, M. A. Rosenfeld, W. J. Pavan, D. B. Krizman, J. Nagle, M. H. Polymeropoulos, S. L. Sturley, Y. A. Ioannou, M. E. Higgins, M. Comly, A. Cooney, A. Brown, C. R. Kaneski, E. J. Blanchette-Mackie, N. K. Dwyer, E. B. Neufeld, T. Y. Chang, L. Liscum, J. F. Strauss, 3rd, K. Ohno, M. Zeigler, R. Carmi, J. Sokol, D. Markie, R. R. O'Neill, O. P. van Diggelen, M. Elleder, M. C. Patterson, R. O. Brady, M. T. Vanier, P. G. Pentchev, and D. A. Tagle. 1997. Niemann-Pick C1 disease gene: homology to mediators of cholesterol homeostasis. *Science*. 277: 228-231.
37. Rawson, R. B., N. G. Zelenski, D. Nijhawan, J. Ye, J. Sakai, M. T. Hasan, T. Y. Chang, M. S. Brown, and J. L. Goldstein. 1997. Complementation cloning of S2P, a gene

encoding a putative metalloprotease required for intramembrane cleavage of SREBPs. *Molecular cell* 1: 47-57.

38. Khelef, N., X. Buton, N. Beatini, H. Wang, V. Meiner, T. Y. Chang, R. V. J. Farese, F. R. Maxfield, and I. Tabas. 1998. Immunolocalization of acyl-coenzyme A:cholesterol O-acyltransferase in macrophages. *The Journal of biological chemistry* 273: 11218-11224.
39. Lee, O., C. C. Y. Chang, W. Lee, and T. Y. Chang. 1998. Immunodepletion experiments suggest that acyl-coenzyme A:cholesterol acyltransferase 1 (ACAT1) protein plays a major catalytic role in adult human liver, adrenal gland, macrophages, and kidney, but not in intestines. *Journal of lipid research* 39: 1722-1727.
40. Miyazaki, A., N. Sakashita, O. Lee, K. Takahashi, S. Horiuchi, H. Hakamata, P. M. Morganelli, C. C. Y. Chang, and T. Y. Chang. 1998. Expression of ACAT-1 protein in human atherosclerotic lesions and cultured human monocytes-macrophages. *Arteriosclerosis, thrombosis, and vascular biology* 18: 1568-1574.
41. Chang, C. C. Y., C. Y. G. Lee, E. T. Chang, J. C. Cruz, M. C. Levesque, and T. Y. Chang. 1998. Recombinant human acyl-CoA:cholesterol acyltransferase 1 (ACAT1) purified to essential homogeneity utilizes cholesterol in mixed micelles or vesicles in a highly cooperative manner. *The Journal of biological chemistry* 273: 35132-35141.
42. Tomita, T., T. Y. Chang, T. Kodama, and T. Iwatsubo. 1998. BetaAPP gamma-secretase and SREBP site 2 protease are two different enzymes. *Neuroreport* 9: 911-913.
43. Li, B. L., X. L. Li, Z. J. Duan, O. Lee, S. Lin, Z. M. Ma, C. C. Y. Chang, X. Y. Yang, J. P. Park, T. K. Mohandas, W. Noll, L. Chan, and T. Y. Chang. 1999. Human acyl-CoA:cholesterol acyltransferase-1 (ACAT-1) gene organization and evidence that the 4.3-kilobase ACAT-1 mRNA is produced from two different chromosomes. *The Journal of biological chemistry* 274: 11060-11071.
44. Lin, S., D. Cheng, M. S. Liu, J. Chen, and T. Y. Chang. 1999. Human acyl-CoA:cholesterol acyltransferase-1 in the endoplasmic reticulum contains seven transmembrane domains. *The Journal of biological chemistry* 274: 23276-23285.
45. Yu, C., J. Chen, S. Lin, J. Liu, C. C. Y. Chang, and T. Y. Chang. 1999. Human acyl-CoA:cholesterol acyltransferase-1 is a homotetrameric enzyme in intact cells and in vitro. *The Journal of biological chemistry* 274: 36139-36145.
46. Sakashita, N., A. Miyazaki, M. Takeya, S. Horiuchi, C. C. Y. Chang, T. Y. Chang, and K. Takahashi. 2000. Localization of human acyl-coenzyme A: cholesterol acyltransferase-1 (ACAT-1) in macrophages and in various tissues. *The American journal of pathology* 156: 227-236.
47. Cruz, J. C., S. Sugii, C. Yu, and T. Y. Chang. 2000. Role of Niemann-Pick type C1 protein in intracellular trafficking of low density lipoprotein-derived cholesterol. *The Journal of biological chemistry* 275: 4013-4021.
48. Henderson, L. P., L. Lin, A. Prasad, C. A. Paul, T. Y. Chang, and R. A. Maue. 2000. Embryonic striatal neurons from niemann-pick type C mice exhibit defects in cholesterol metabolism and neurotrophin responsiveness. *The Journal of biological chemistry* 275: 20179-20187.
49. Chang, C. C. Y., N. Sakashita, K. Ornvold, O. Lee, E. T. Chang, R. Dong, S. Lin, C. Y. Lee, S. C. Strom, R. Kashyap, J. J. Fung, R. V. Farese, Jr., J. F. Patoiseau, A. Delhon, and T. Y. Chang. 2000. Immunological quantitation and localization of ACAT-1

and ACAT-2 in human liver and small intestine. *The Journal of biological chemistry* 275: 28083-28092.

50. Cruz, J. C., and T. Y. Chang. 2000. Fate of endogenously synthesized cholesterol in Niemann-Pick type C1 cells. *The Journal of biological chemistry* 275: 41309-41316.

51. Maung, K., A. Miyazaki, H. Nomiya, C. C. Y. Chang, T. Y. Chang, and S. Horiuchi. 2001. Induction of acyl-coenzyme A:cholesterol acyltransferase-1 by 1,25-dihydroxyvitamin D(3) or 9-cis-retinoic acid in undifferentiated THP-1 cells. *Journal of lipid research* 42: 181-187.

52. Yamazaki, T., T. Y. Chang, C. Haass, and Y. Ihara. 2001. Accumulation and aggregation of amyloid beta-protein in late endosomes of Niemann-pick type C cells. *The Journal of biological chemistry* 276: 4454-4460.

53. Yang, J. B., Z. J. Duan, W. Yao, O. Lee, L. Yang, X. Y. Yang, X. Sun, C. C. Y. Chang, T. Y. Chang, and B. L. Li. 2001. Synergistic transcriptional activation of human Acyl-coenzyme A: cholesterol acyltransferase-1 gene by interferon-gamma and all-trans-retinoic acid THP-1 cells. *The Journal of biological chemistry* 276: 20989-20998.

54. Song, B. L., W. Qi, X. Y. Yang, C. C. Y. Chang, J. Q. Zhu, T. Y. Chang, and B. L. Li. 2001. Organization of human ACAT-2 gene and its cell-type-specific promoter activity. *Biochemical and biophysical research communications* 282: 580-588.

55. Puglielli, L., G. Konopka, E. Pack-Chung, L. A. Ingano, O. Berezovska, B. T. Hyman, T. Y. Chang, R. E. Tanzi, and D. M. Kovacs. 2001. Acyl-coenzyme A: cholesterol acyltransferase modulates the generation of the amyloid beta-peptide. *Nature cell biology* 3: 905-912.

56. Lu, X., S. Lin, C. C. Y. Chang, and T. Y. Chang. 2002. Mutant acyl-coenzyme A:cholesterol acyltransferase 1 devoid of cysteine residues remains catalytically active. *The Journal of biological chemistry* 277: 711-718.

57. Yu, C., Y. Zhang, X. Lu, J. Chen, C. C. Y. Chang, and T. Y. Chang. 2002. Role of the N-terminal hydrophilic domain of acyl-coenzyme A:cholesterol acyltransferase 1 on the enzyme's quaternary structure and catalytic efficiency. *Biochemistry* 41: 3762-3769.

58. Cruz, J. C., M. Thomas, E. Wong, N. Ohgami, S. Sugii, T. Curphey, C. C. Y. Chang, and T. Y. Chang. 2002. Synthesis and biochemical properties of a new photoactivatable cholesterol analog 7,7-azocholestanol and its linoleate ester in Chinese hamster ovary cell lines. *Journal of lipid research* 43: 1341-1347.

59. Buszczak, M., X. Lu, W. A. Seagraves, T. Y. Chang, and L. Cooley. 2002. Mutations in the midway gene disrupt a *Drosophila* acyl coenzyme A: diacylglycerol acyltransferase. *Genetics* 160: 1511-1518.

60. Khan, N., J. Shen, T. Y. Chang, C. C. Y. Chang, P. C. Fung, O. Grinberg, E. Demidenko, and H. Swartz. 2003. Plasma membrane cholesterol: a possible barrier to intracellular oxygen in normal and mutant CHO cells defective in cholesterol metabolism. *Biochemistry* 42: 23-29.

61. Zhang, Y., C. Yu, J. Liu, T. A. Spencer, C. C. Y. Chang, and T. Y. Chang. 2003. Cholesterol is superior to 7-ketocholesterol or 7 alpha-hydroxycholesterol as an allosteric activator for acyl-coenzyme A:cholesterol acyltransferase 1. *The Journal of biological chemistry* 278: 11642-11647.

62. Sugii, S., P. C. Reid, N. Ohgami, Y. Shimada, R. A. Maue, H. Ninomiya, Y. Ohno-Iwashita, and T. Y. Chang. 2003. Biotinylated theta-toxin derivative as a probe to

examine intracellular cholesterol-rich domains in normal and Niemann-Pick type C1 cells. *Journal of lipid research* 44: 1033-1041.

63. Reid, P. C., S. Sugii, and T. Y. Chang. 2003. Trafficking defects in endogenously synthesized cholesterol in fibroblasts, macrophages, hepatocytes, and glial cells from Niemann-Pick type C1 mice. *Journal of lipid research* 44: 1010-1019.

64. Lin, S., X. Lu, C. C. Y. Chang, and T. Y. Chang. 2003. Human acyl-coenzyme A:cholesterol acyltransferase expressed in chinese hamster ovary cells: membrane topology and active site location. *Molecular biology of the cell* 14: 2447-2460.

65. Sugii, S., P. C. Reid, N. Ohgami, H. Du, and T. Y. Chang. 2003. Distinct endosomal compartments in early trafficking of low density lipoprotein-derived cholesterol. *The Journal of biological chemistry* 278: 27180-27189.

66. Sakashita, N., A. Miyazaki, C. C. Y. Chang, T. Y. Chang, E. Kiyota, M. Satoh, Y. Komohara, P. M. Morganelli, S. Horiuchi, and M. Takeya. 2003. Acyl-coenzyme A:cholesterol acyltransferase 2 (ACAT2) is induced in monocyte-derived macrophages: in vivo and in vitro studies. *Laboratory investigation* 83: 1569-1581.

67. Wiegand, V., T. Y. Chang, J. F. Strauss, 3rd, F. Fahrenholz, and G. Gimpl. 2003. Transport of plasma membrane-derived cholesterol and the function of Niemann-Pick C1 Protein. *Faseb J* 17: 782-784.

68. Sawamura, N., J. S. Gong, T. Y. Chang, K. Yanagisawa, and M. Michikawa. 2003. Promotion of tau phosphorylation by MAP kinase Erk1/2 is accompanied by reduced cholesterol level in detergent-insoluble membrane fraction in Niemann-Pick C1-deficient cells. *Journal of neurochemistry* 84: 1086-1096.

69. Yang, L., J. Chen, C. C. Y. Chang, X. Y. Yang, Z. Z. Wang, T. Y. Chang, and B. L. Li. 2004. A stable upstream stem-loop structure enhances selection of the first 5'-ORF-AUG as a main start codon for translation initiation of human ACAT1 mRNA. *Acta biochimica et biophysica Sinica* 36: 259-268.

70. Reid, P. C., N. Sakashita, S. Sugii, Y. Ohno-Iwashita, Y. Shimada, W. F. Hickey, and T. Y. Chang. 2004. A novel cholesterol stain reveals early neuronal cholesterol accumulation in the Niemann-Pick type C1 mouse brain. *Journal of lipid research* 45: 582-591.

71. Yamauchi, Y., C. C. Y. Chang, M. Hayashi, S. Abe-Dohmae, P. C. Reid, T. Y. Chang, and S. Yokoyama. 2004. Intracellular cholesterol mobilization involved in the ABCA1/apolipoprotein-mediated assembly of high density lipoprotein in fibroblasts. *Journal of lipid research* 45: 1943-1951.

72. Ohgami, N., D. C. Ko, M. Thomas, M. P. Scott, C. C. Y. Chang, and T. Y. Chang. 2004. Binding between the Niemann-Pick C1 protein and a photoactivatable cholesterol analog requires a functional sterol-sensing domain. *Proceedings of the National Academy of Sciences of the United States of America* 101: 12473-12478.

73. Yang, L., O. Lee, J. Chen, C. C. Y. Chang, P. Zhou, Z. Z. Wang, H. H. Ma, H. F. Sha, J. X. Feng, Y. Wang, X. Y. Yang, L. Wang, R. Dong, K. Ornvold, B. L. Li, and T. Y. Chang. 2004. Human acyl-coenzyme A:cholesterol acyltransferase 1 (acat1) sequences located in two different chromosomes (7 and 1) are required to produce a novel ACAT1 isoenzyme with additional sequence at the N terminus. *The Journal of biological chemistry* 279: 46253-46262.

74. Yang, L., J. B. Yang, J. Chen, G. Y. Yu, P. Zhou, L. Lei, Z. Z. Wang, C. C. Y. Chang, X. Y. Yang, T. Y. Chang, and B. L. Li. 2004. Enhancement of human ACAT1

gene expression to promote the macrophage-derived foam cell formation by dexamethasone. *Cell research* 14: 315-323.

75. Guo, Z. Y., C. C. Y. Chang, X. Lu, J. Chen, B. L. Li, and T. Y. Chang. 2005. The disulfide linkage and the free sulfhydryl accessibility of acyl-coenzyme A:cholesterol acyltransferase 1 as studied by using mPEG5000-maleimide. *Biochemistry* 44: 6537-6546.

76. Paul, C. A., P. C. Reid, A. K. Boegle, B. Karten, M. Zhang, Z. G. Jiang, D. Franz, L. Lin, T. Y. Chang, J. E. Vance, J. Blanchette-Mackie, and R. A. Maue. 2005. Adenovirus expressing an NPC1-GFP fusion gene corrects neuronal and nonneuronal defects associated with Niemann pick type C disease. *Journal of neuroscience research* 81: 706-719.

77. Liu, J., C. C. Y. Chang, E. J. Westover, D. F. Covey, and T. Y. Chang. 2005. Investigating the allostereism of Acyl Coenzyme A: cholesterol acyltransferase (ACAT) by using various sterols: In vitro and intact cell studies. *Biochem. J.* 391: 389-397.

78. Guo, Z. Y., S. Lin, J. A. Heinen, C. C. Y. Chang, and T. Y. Chang. 2005. The active site His-460 of human acyl-coenzyme A:cholesterol acyltransferase 1 resides in a hitherto undisclosed transmembrane domain. *The Journal of biological chemistry* 280: 37814-37826.

79. Yao, X. M., C. H. Wang, B. L. Song, X. Y. Yang, Z. Z. Wang, W. Qi, Z. X. Lin, C. C. Y. Chang, T. Y. Chang, and B. L. Li. 2005. Two human ACAT2 mRNA variants produced by alternative splicing and coding for novel isoenzymes. *Acta biochimica et biophysica Sinica* 37: 797-806.

80. Song, B. L., C. H. Wang, X. M. Yao, L. Yang, W. J. Zhang, Z. Z. Wang, X. N. Zhao, J. B. Yang, W. Qi, X. Y. Yang, K. Inoue, Z. X. Lin, H. Z. Zhang, T. Kodama, C. C. Y. Chang, Y. K. Liu, T. Y. Chang, and B. L. Li. 2006. Human acyl-CoA:cholesterol acyltransferase 2 gene expression in intestinal Caco-2 cells and in hepatocellular carcinoma. *The Biochemical journal* 394: 617-626.

81. Sugii, S., S. Lin, N. Ohgami, M. Ohashi, C. C. Y. Chang, and T. Y. Chang. 2006. Roles of endogenously synthesized sterols in the endocytic pathway. *The Journal of biological chemistry* 281: 23191-23206.

82. Guo, Z. Y., C. C. Y. Chang, and T. Y. Chang. 2007. Functionality of the seventh and eighth transmembrane domains of acyl-coenzyme A:cholesterol acyltransferase 1. *Biochemistry* 46: 10063-10071.

83. Yamauchi, Y., P. C. Reid, J. B. Sperry, K. Furukawa, M. Takeya, C. C. Y. Chang, and T. Y. Chang. 2007. Plasma membrane rafts complete cholesterol synthesis by participating in retrograde movement of precursor sterols. *The Journal of biological chemistry* 282: 34994-35004.

84. Reid, P. C., S. Lin, M. T. Vanier, Y. Ohno-Iwashita, H. J. Harwood, Jr., W. F. Hickey, C. C. Y. Chang, and T. Y. Chang. 2008. Partial blockage of sterol biosynthesis with a squalene synthase inhibitor in early postnatal Niemann-Pick type C *npc1h* null mice brains reduces neuronal cholesterol accumulation, abrogates astrogliosis, but may inhibit myelin maturation. *Journal of neuroscience methods* 168: 15-25.

85. Chen, J., X. N. Zhao, L. Yang, G. J. Hu, M. Lu, Y. Xiong, X. Y. Yang, C. C. Y. Chang, B. L. Song, T. Y. Chang, and B. L. Li. 2008. RNA secondary structures located in the interchromosomal region of human ACAT1 chimeric mRNA are required to produce the 56-kDa isoform. *Cell research* 18: 921-936.

86. Urano, Y., H. Watanabe, S. R. Murphy, Y. Shibuya, Y. Geng, A. A. Peden, C. C. Y. Chang, and T. Y. Chang. 2008. Transport of LDL-derived cholesterol from the NPC1 compartment to the ER involves the trans-Golgi network and the SNARE protein complex. *Proceedings of the National Academy of Sciences of the United States of America* 105: 16513-16518.
87. Lei, L., Y. Xiong, J. Chen, J. B. Yang, Y. Wang, X. Y. Yang, C. C. Y. Chang, B. L. Song, T. Y. Chang, and B. L. Li. 2009. TNF-alpha stimulates the ACAT1 expression in differentiating monocytes to promote the CE-laden cell formation. *Journal of lipid research* 50: 1057-1067.
88. Bryleva, E. Y., M. A. Rogers, C. C. Y. Chang, F. Buen, B. T. Harris, E. Rousselet, N. G. Seidah, S. Oddo, F. M. LaFerla, T. A. Spencer, W. F. Hickey, and T. Y. Chang. 2010. ACAT1 gene ablation increases 24(S)-hydroxycholesterol content in the brain and ameliorates amyloid pathology in mice with AD. *Proceedings of the National Academy of Sciences of the United States of America* 107: 3081-3086.
89. Sakashita, N., C. C. Y. Chang, X. Lei, Y. Fujiwara, M. Takeya, and T. Y. Chang. 2010. Cholesterol loading in macrophages stimulates formation of ER-derived vesicles with elevated ACAT1 activity. *Journal of lipid research* 51: 1263-1272.
90. Lei, X., Y. Fujiwara, C. C. Y. Chang, T. Y. Chang, M. Takeya, and N. Sakashita. 2010. Association of ACAT1-positive vesicles with late endosomes/ lysosomes in cholesterol-rich human macrophages. *Journal of atherosclerosis and thrombosis* 17: 740-750.
91. Chang, C. C. Y., A. Miyazaki, R. Dong, A. Kheirollah, C. Yu, Y. Geng, H. N. Higgs, and T. Y. Chang. 2010. Purification of Recombinant Acyl-Coenzyme A:Cholesterol Acyltransferase 1 (ACAT1) from H293 Cells and Binding Studies between the Enzyme and Substrates Using Difference Intrinsic Fluorescence Spectroscopy. *Biochemistry* 49: 9957-9963.
92. Rogers, M. A., J. Liu, M. M. Kushnir, E. Bryleva, A. L. Rockwood, A. W. Meikle, D. Shapiro, B. L. Vaisman, A. T. Remaley, C. C. Y. Chang, and T. Y. Chang. 2012. Cellular Pregnenolone Esterification by Acyl-CoA:Cholesterol Acyltransferase. *The Journal of biological chemistry* 287: 17483-17492.
93. Maue, R. A., R. W. Burgess, B. Wang, C. M. Wooley, K. L. Seburn, M. T. Vanier, M. A. Rogers, C. C. Y. Chang, T. Y. Chang, B. T. Harris, D. J. Graber, C. A. Penatti, D. M. Porter, B. S. Szwegold, L. P. Henderson, J. W. Totenhagen, T. P. Trouard, I. A. Borbon, and R. P. Erickson. 2012. A novel mouse model of Niemann-Pick type C disease carrying a D1005G-Npc1 mutation comparable to commonly observed human mutations. *Human molecular genetics* 21: 730-750.
94. Poirier, S., G. Mayer, S. R. Murphy, W. S. Garver, T. Y. Chang, P. Schu, and N. G. Seidah. 2013. The cytosolic adaptor AP-1A is essential for the trafficking and function of Niemann-Pick type C proteins. *Traffic* 14: 458-469.
95. Murphy, S. R., C. C. Y. Chang, G. Dogbevia, E. Y. Bryleva, Z. Bowen, M. T. Hasan, and T. Y. Chang. 2013. Acat1 knockdown gene therapy decreases amyloid-beta in a mouse model of Alzheimer's disease. *Molecular therapy* 21: 1497-1506.
96. Huang, L. H., J. Gui, E. Artinger, R. Craig, B. L. Berwin, P. A. Ernst, C. C. Y. Chang, and T. Y. Chang. 2013. Acat1 gene ablation in mice increases hematopoietic progenitor cell proliferation in bone marrow and causes leukocytosis. *Arteriosclerosis, thrombosis, and vascular biology* 33: 2081-2087.

97. Hu, G. J., J. Chen, X. N. Zhao, J. J. Xu, D. Q. Guo, M. Lu, M. Zhu, Y. Xiong, Q. Li, C. C. Y. Chang, B. L. Song, T. Y. Chang, and B. L. Li. 2013. Production of ACAT1 56-kDa isoform in human cells via trans-splicing involving the ampicillin resistance gene. *Cell research* **23**: 1007-1024.
98. Lu, M., X. H. Hu, Q. Li, Y. Xiong, G. J. Hu, J. J. Xu, X. N. Zhao, X. X. Wei, C. C. Y. Chang, Y. K. Liu, F. J. Nan, J. Li, T. Y. Chang, B. L. Song, and B. L. Li. 2013. A specific cholesterol metabolic pathway is established in a subset of HCCs for tumor growth. *Journal of molecular cell biology* **5**: 404-415.
99. Huang, L. H., K. Nishi, S. Li, T. Ho, R. Dong, C. C. Y. Chang, and T. Y. Chang. 2014. Acyl-coenzyme A:cholesterol acyltransferase 1 - significance of single-nucleotide polymorphism at residue 526 and the role of Pro347 near the fifth transmembrane domain. *The FEBS journal* **281**: 1773-1783.
100. Poirier, S., S. Samami, M. Mamarbachi, A. Demers, T. Y. Chang, D. E. Vance, G. M. Hatch, and G. Mayer. 2014. The epigenetic drug 5-azacytidine interferes with cholesterol and lipid metabolism. *The Journal of biological chemistry* **289**: 18736-18751.
101. Shibuya, Y., C. C. Chang, L. H. Huang, E. Y. Bryleva, and T. Y. Chang. 2014. Inhibiting ACAT1/SOAT1 in microglia stimulates autophagy-mediated lysosomal proteolysis and increases Abeta1-42 clearance. *J Neurosci* **34**: 14484-14501.
102. Shibuya, Y., Z. Niu, E. Y. Bryleva, B. T. Harris, S. R. Murphy, A. Kheirollah, Z. D. Bowen, C. C. Chang, and T. Y. Chang. 2015. Acyl-coenzyme A:cholesterol acyltransferase 1 blockage enhances autophagy in the neurons of triple transgenic Alzheimer's disease mouse and reduces human P301L-tau content at the presymptomatic stage. *Neurobiology of aging* **36**: 2248-2259.
103. Yamauchi, Y., N. Iwamoto, M. A. Rogers, S. Abe-Dohmae, T. Fujimoto, C. C. Chang, M. Ishigami, T. Kishimoto, T. Kobayashi, K. Ueda, K. Furukawa, T. Y. Chang, and S. Yokoyama. 2015. Deficiency in the lipid exporter ABCA1 impairs retrograde sterol movement and disrupts sterol sensing at the endoplasmic reticulum. *The Journal of biological chemistry* **290**: 23464-23477.
104. Huang, L. H., E. M. Melton, H. Li, P. Sohn, M. A. Rogers, M. J. Mulligan-Kehoe, S. N. Fiering, W. F. Hickey, C. C. Chang, and T. Y. Chang. 2016. Myeloid Acyl-CoA:Cholesterol Acyltransferase 1 Deficiency Reduces Lesion Macrophage Content and Suppresses Atherosclerosis Progression. *The Journal of biological chemistry* **291**: 6232-6244.
105. Yamauchi, Y., S. Yokoyama, and T. Y. Chang. 2016. ABCA1-dependent sterol release: sterol molecule specificity and potential membrane domain for HDL biogenesis. *Journal of lipid research* **57**: 77-88.
106. Yang, W., Y. Bai, Y. Xiong, J. Zhang, S. Chen, X. Zheng, X. Meng, L. Li, J. Wang, C. Xu, C. Yan, L. Wang, C. C. Y. Chang, T.-Y. Chang, T. Zhang, P. Zhou, B.-L. Song, W. Liu, S.-c. Sun, X. Liu, B.-l. Li, and C. Xu. 2016. Potentiating the antitumour response of CD8(+) T cells by modulating cholesterol metabolism. *Nature* **531**: 651-655.
107. Guo, D., M. Lu, X. Hu, J. Xu, G. Hu, M. Zhu, X. Zhang, Q. Li, C. C. Y. Chang, T. Chang, B. Song, Y. Xiong, and B. Li. 2016. Low-level expression of human ACAT2 gene in monocytic cells is regulated by the C/EBP transcription factors. *Acta biochimica et biophysica Sinica* **48**: 980-989.
108. Wang, Y. J., Y. Bian, J. Luo, M. Lu, Y. Xiong, S. Y. Guo, H. Y. Yin, X. Lin, Q. Li, C. C. Y. Chang, T. Y. Chang, B. L. Li, and B. L. Song. 2017. Cholesterol and fatty

acids regulate cysteine ubiquitylation of ACAT2 through competitive oxidation. *Nature cell biology* **19**: 808-819.

109. Huang, L. H., E. M. Melton, H. Li, P. Sohn, D. Jung, C. Y. Tsai, T. Ma, H. Sano, H. Ha, R. H. Friedline, J. K. Kim, E. Usherwood, C. C. Chang, and T. Y. Chang. 2018. Myeloid-specific *Acat1* ablation attenuates inflammatory responses in macrophages, improves insulin sensitivity, and suppresses diet-induced obesity. *American journal of physiology. Endocrinology and metabolism* **315**: E340-E356.

110. Neumann, B., C. C. Y. Chang and T. Y. Chang (2019). "A simple method to disrupt and restore subunit interaction of acyl-CoA:cholesterol acyltransferase 1." *MethodsX* **6**: 2242-2247.

111. Neumann, B., C. C. Y. Chang and T. Y. Chang (2019). "Triton X-100 or octyl glucoside inactivates acyl-CoA:cholesterol acyltransferase 1 by dissociating it from a two-fold dimer to a two-fold monomer." *Arch Biochem Biophys* **671**: 103-110.

112. Melton, E. M., H. Li, J. Benson, P. Sohn, L. H. Huang, B. L. Song, B. L. Li, C. C. Y. Chang, and T. Y. Chang. 2019. Myeloid *Acat1*/*Soat1* KO attenuates pro-inflammatory responses in macrophages and protects against atherosclerosis in a model of advanced lesions. *The Journal of biological chemistry* **294**: 15836-15849.

113. Neumann, B., K. Chao, C. C. Y. Chang, and T. Y. Chang. 2020. Nanodisc scaffold peptide (NSPr) replaces detergent by reconstituting acyl-CoA:cholesterol acyltransferase 1 into peptidiscs. *Archives of biochemistry and biophysics* **691**: 108518.

114. Guan, C., Y. Niu, S. C. Chen, Y. Kang, J. X. Wu, K. Nishi, C. C. Y. Chang, T. Y. Chang, T. Luo, and L. Chen. 2020. Structural insights into the inhibition mechanism of human sterol O-acyltransferase 1 by a competitive inhibitor. *Nature communications* **11**: 2478.

115. De La Torre, A. L., C. Smith, J. Granger, F. L. Anderson, T. C. Harned, M. C. Havrda, C. C. Y. Chang, and T. Y. Chang. 2022. Facile method to incorporate high-affinity ACAT/SOAT1 inhibitor F12511 into stealth liposome-based nanoparticle and demonstration of its efficacy in blocking cholesteryl ester biosynthesis without overt toxicity in neuronal cell culture. *J Neurosci Methods* **367**: 109437.

116. Rogers, M. A., C. C. Y. Chang, R. A. Maue, E. M. Melton, A. A. Peden, W. S. Garver, J. Lee, P. Schroen, M. Huang, and T. Y. Chang. 2022. *Acat1*/*Soat1* knockout extends the mutant *Npc1* mouse lifespan and ameliorates functional deficiencies in multiple organelles of mutant cells. *Proc Natl Acad Sci U S A* **119**: e2201646119.

II. Invited Reviews in Books, Review Series, and Journals:

1. Chang, T.Y., L.M. Prescott, and M.E. Jones. 1978. Aspartate transcarbamylase (*Streptococcus faecalis*) in *Methods in Enzymology* (Hoffee, P.A. and Jones, M.E., Eds), Academic Press, New York, vol. II, p. 41.

2. Chang, T.Y. 1983. In *The Enzymes*, 3rd edition, vol. 16 on Lipid Metabolism (P.D. Boyer, Ed.) Chapter 14 on "Mammalian HMG-CoA reductase and its regulation", Academic Press, p. 491

3. Chang, T.Y. and G.M. Doolittle. 1983. In *The Enzymes*, 3rd edition, vol. 16 on Lipid Metabolism (P.D. Boyer, Ed.) Chapter 15 on "Acyl-coenzyme A:cholesterol acyltransferase", Academic Press, p. 523.

4. Chang, T. Y., C. C. Y. Chang, and K. M. Cadigan. 1994. The structure of acyl coenzyme A-cholesterol acyltransferase and its potential relevance to atherosclerosis. *Trends in cardiovascular medicine* **4**: 223-230.
5. Chang, T. Y., C. C. Y. Chang, and D. Cheng. 1997. Acyl-coenzyme A:cholesterol acyltransferase. *Annu. Rev. Biochem.* **66**: 613-638.
6. Chang, T. Y., M. T. Hasan, J. Chin, C. C. Y. Chang, D. M. Spillane, and J. Chen. 1997. Chinese hamster ovary cell mutants affecting cholesterol metabolism. *Curr Opin Lipidol* **8**: 65-71.
7. Chang, T. Y. 1997. SREBPs, membrane lipid biosynthesis, and fatty acids [editorial; comment]. *J. Clin. Invest.* **100**: 1905-1906.
8. Chang, T. Y., C. C. Y. Chang, and O. Lee. 1998. The sterol-specific regulation of ACAT-1 and SREBPs in mammalian cells and in liver. In *Intracellular Cholesterol Trafficking*. T. Y. Chang and D. Freeman, editors. Kluwer Academic Press, Boston. 1-14.
9. Chang, T. Y., C. C. Y. Chang, O. Lee, and J. Cruz. 2000. In *Lipoprotein Metabolism and Atherogenesis* (Ed. By T. Kita and M. Yokode). Springer-Verlag Tokyo Press. "ACAT genes and proteins in humans", p.124
10. Sakashita, N., A. Miyazaki, M. Takeya, S. Horiuchi, C. C. Y. Chang, T. Y. Chang, and K. Takahashi. 2000. Acyl Coenzyme A:cholesterol acyltransferase (ACAT) in macrophage-derived foam cells and Its distribution in human organs. *Acta Histochem. Cytochem.* **33**, 189.
11. Chang, T. Y., C. C. Y. Chang, X. H. Lu, and S. Lin. 2001. ACAT catalysis may be completed within the plane of the membrane: a working hypothesis. *J. Lipid Res.* **42**: 1933-1938.
12. Chang, T. Y., C. C. Chang, S. Lin, C. Yu, B. L. Li, and A. Miyazaki. 2001. Roles of acyl-coenzyme A:cholesterol acyltransferase-1 and -2. *Curr Opin Lipidol* **12**: 289-296.
13. Chang, T. Y., and C. C. Y. Chang in *Encyclopedia of Molecular Medicine* (Edited by T. E. Creighton), Entry on "Acyl-Coenzyme A: Cholesterol Acyltransferase", Wiley & Sons. (2002)
14. Cheng, D, J. Liu, C. C. Y. Chang, and T. Y. Chang. Mammalian ACAT and DGAT2 gene families. *Topics in Current Genetics*, Volume 6, Lipid Metabolism and Membrane Biogenesis: 241 (2003)
15. Chang, T. Y., P. C. Reid, S. Sugii, N. Ohgami, J. C. Cruz, and C. C. Chang. 2005. Niemann-Pick type C disease and intracellular cholesterol trafficking. *The Journal of biological chemistry* **280**: 20917-20920.
16. Chang, T. Y., C. C. Chang, N. Ohgami, and Y. Yamauchi. 2006. Cholesterol sensing, trafficking, and esterification. *Annu Rev Cell Dev Biol* **22**: 129-157.
17. Li, B. L., T. Y. Chang, J. Chen, C. C. Chang, and X. N. Zhao. 2006. Human ACAT1 gene expression and its involvement in the development of atherosclerosis. *Future Cardiol* **2**: 93-99.
18. Chang, C. C., R. Dong, A. Miyazaki, N. Sakashita, Y. Zhang, J. Liu, M. Guo, B. L. Li, and T. Y. Chang. 2006. Human acyl-CoA:cholesterol acyltransferase (ACAT) and its potential as a target for pharmaceutical intervention against atherosclerosis. *Acta Biochim Biophys Sin (Shanghai)* **38**: 151-156.
19. Chang, T. Y., and C. Chang. 2008. Ezetimibe blocks internalization of the NPC1L1/cholesterol complex. *Cell metabolism* **7**: 469-471.

20. Chang, T. Y., B. L. Li, C. C. Chang, and Y. Urano. 2009. Acyl-coenzyme A:cholesterol acyltransferases. *Am J Physiol Endocrinol Metab* **297**: E1-9.
21. Chang, T. Y., C. C. Y. Chang, E. Y. Bryleva, M. A. Rogers, and S. R. Murphy. 2010. Neuronal cholesterol esterification by ACAT1 in Alzheimer's disease. *IUBMB-Life*. 62, 261.
22. Chang, C. C.Y., J. Sun, and T. Y. Chang. 2011. Membrane bound O-acyltransferases (MBOAT). *Frontiers in Biology* **6**: 177-182.
23. Rogers, M. A., J. Liu, B. L. Song, B. L. Li, C. C. Y. Chang, and T. Y. Chang. 2014. Acyl-CoA:cholesterol acyltransferases (ACATs/SOATs): Enzymes with multiple sterols as substrates and as activators. *The Journal of steroid biochemistry and molecular biology*.
24. Shibuya, Y., C. C. Chang, and T. Y. Chang. 2015. ACAT1/SOAT1 as a therapeutic target for Alzheimer's disease. *Future Med Chem* **7**: 2451-2467.
25. Chang, T. Y., and C. Chang. 2017. ApoE and Lipid Homeostasis in Alzheimer's Disease: Introduction to the Thematic Review Series. *Journal of lipid research* **58**:8
26. Chang, T. Y., Y. Yamauchi, M. Hasan, and C. C. Chang. 2017. Cellular Cholesterol Homeostasis in Alzheimer's Disease. *Journal of lipid research* **58**:2239
27. Yamauchi, Y., S. Yokoyama, and T. Y. Chang. 2017. Methods for Monitoring ABCA1-Dependent Sterol Release. *Methods Mol Biol* **1583**: 257-273.
28. Duong, M. T., I. M. Nasrallah, D. A. Wolk, C. C. Y. Chang, and T. Y. Chang. 2021. Cholesterol, Atherosclerosis, and APOE in Vascular Contributions to Cognitive Impairment and Dementia (VCID): Potential Mechanisms and Therapy. *Frontiers in aging neuroscience* **13**: 647990.

III. Book (as Editor):

Intracellular Cholesterol Trafficking (Ed. by T.Y. Chang and D. Freeman). Kluwer Academic Press. (1998)

List of Published Work in My Bibliography (No. of publications: 133):

<https://www.ncbi.nlm.nih.gov/myncbi/ta%20yuan.chang.1/bibliography/public/>

IV. Patents:

Inventor of ten patents issued to Dartmouth College:

1. U.S. Patent # 5,484,727 (Issued 01/16/96)
2. U.S. Patent # 5,834,283 (Issued 11/10/98)
3. U.S. Patent # 5,968,749 (Issued 10/19/99)
4. U.S. Patent # 6,602,710 (Issued 08/05/03)
5. U.S. Patent # 8,673,587 (Issued 03/18/04)
6. U.S. Patent # 8,466,121 (Issued 06/18/13)
7. U.S. Patent # 8,802,646 (Issued 08/12/14)
8. U.S. Patent # 9,206,425 (Issued 12/08/15)
9. U.S. Patent # 9,388,414 (Issued 07/12/2016)
10. U.S. Patent # 9,856,478 (issued 01/02/2018)

