

## Fu-Tong Liu, MD, PhD

### Current Position

Vice President  
Academia Sinica, Taipei

### Education

National Taiwan University, Taipei, Taiwan, 1966-1970  
B.S. in Chemistry, 1970  
The University of Chicago, Chicago, Illinois, 1971-1975  
Ph.D. in Chemistry, 1976  
Postdoctoral Research Fellow, Department of Chemistry, The University of Illinois, Urbana, Illinois, 1975-1977  
Postdoctoral Research Fellow, Department of Cellular and Developmental Immunology, Research Institute of Scripps Clinic, La Jolla, California, 1977-1979  
The University of Miami School of Medicine (Ph.D. to M.D. Program), 1985-1987. M.D., 1987  
Residency in Dermatology, University of California, San Diego, California, 1990-1993

### Positions

1979-1982 Assistant Member, Department of Cellular and Developmental Immunology, Research Institute of Scripps Clinic, La Jolla, CA  
1982-1990 Associate Member (1982-1987), Member (1987-1990), Department of Immunology, Med. Biology Institute, La Jolla  
1990-1996 Associate Member/Head, Allergy Research Section, Dept. of Molecular & Experimental Medicine, The Scripps Research Institute, La Jolla, CA  
1993-2001 Member, Division of Dermatology and Cutaneous Surgery, Scripps Clinic, La Jolla, CA  
1996-2001 Member and Head, Division of Allergy, La Jolla Institute for Allergy and Immunology, San Diego, CA  
2001-present Professor and Chair (2001-2011), Distinguished Professor and Chair (2011-2012), Distinguished Professor Emeritus (2012-present), Department of Dermatology, University of California, Davis, CA  
2010-present Distinguished Fellow and Director (2010-2017), Distinguished Research Fellow (2017-2018), Corresponding Research Fellow (2018-present), Institute of Biomedical Sciences, Academia Sinica, Taipei  
2011-present Professor, Department of Dermatology and Graduate Institute of Immunology, National Taiwan University, College of Medicine  
2016-present Vice President, Academia Sinica, Taipei

### Board Certification

1993-present American Board of Dermatology

### Awards and Honors

1985-1989 Member, Allergy and Immunology Study Section, National Institutes of Health  
1988-present Elected to Member, American Society for Clinical Investigation  
1993-1997 Member, Allergy, Immunology and Transplantation Research Committee, National Institutes of Health  
2004-present Elected to Member, Association of American Physicians  
2004-present Member, American Skin Association Medical/Scientific Advisory Committee  
2005 Joan Oettinger Memorial Award (Cancer and Pulmonary Research), UC Davis  
2006 Lu Yau-Chin Memorial Lectureship, Taiwanese Dermatological Association  
2011-present Honorary member, Taiwanese Dermatological Association  
2011-present Elected to Member, American Dermatological Association  
2012-present Academician, Academia Sinica, Taiwan  
2013-present Elected to American Association for the Advancement of Science (AAAS) Fellow

2013-present Chair Professor, Kaohsiung Medical University  
2014-present Chair Professor, China Medical University  
2015 First KIA Laureate of the 28th Khwarizmi International Award  
2015-present Chair Professor, Tzu Chi University  
2016 President Shih-Liang Chien Lectureship, Academia Sinica  
2016-present Chair Professor, I-Shou University  
2017 Distinguished Scholar Award, the Phi Tau Phi Scholastic Honor Society

### Editorial Boards

1993-1997 Associate Editor, Journal of Clinical Investigation  
2005-2018 Section Editor, Journal of Dermatological Science  
2005-present Editorial Board, Clinical Reviews in Allergy and Immunology  
2007-present Editorial Board, Journal of Medicinal Food  
2008-present Reviewer Board, Journal of Allergy and Clinical Immunology  
2013-present Editorial Board, Experimental Dermatology  
2016-present Editorial Board, Glycobiology

### Major Committees

2011-2018 Program Director, Taiwan Biobank  
2012-2017 Associate Director, Translational Medicine Graduate Program, Academia Sinica  
2014-present Program Director, National Glycoscience Program, Ministry of Science and Technology  
2015-2016 Co-Director, International Collaborations, National Research Program for Biopharmaceuticals  
2015-2018 President, Taiwanese Society for Investigative Dermatology  
2016-present Board of Directors, National Health Research Institutes  
2017-2018 Program Director, Taiwan Animal Consortium (mouse phenotyping and drug evaluation)  
2017-present Chair, Joint Governing Board, National Biotechnology Research Park  
2018-present President, Chinese Society of Immunology

### Research Interests

Allergic inflammation, Glycobiology (Galectins: roles in immunity, inflammation, cancer, and adiposity), and Dermatology

### Research Summary

Our lab contributed to the discovery of the galectin family of animal lectins. Now, over 15 galectins have been identified and studied by a large number of laboratories. Investigations of galectins have become a major branch of glycobiology. There are now close to 7,000 scientific papers published with the keyword "galectin". Our work demonstrated many functions of galectin-3 in the immune system. We discovered the anti-apoptotic function of galectin-3, which is the first demonstration of the intracellular function of galectins. My lab developed galectin-3-deficient mice. Studies of these mice have provided significant insights into the functions of galectin-3, especially its role in immune and inflammatory responses, as well as pathogenesis of inflammatory diseases and host responses to infectious agents.

My lab has also tackled the biology of galectin-7 and established its pro-apoptotic function. We discovered the remarkable tumor suppression activity of this protein. More recently, we have been devoting efforts to studying its role in skin homeostasis and inflammation. We also discovered galectin-12 and demonstrated its activity in regulation of the cell cycle and adipocyte differentiation. My lab developed galectin-12-deficient mice and showed the critical role of this protein in lipid metabolism.

**Selected Peer-reviewed Publications** [from a total of over **283** original research articles and **68** reviews, including many in prestigious and high impact journals, such as Nature, Nature Biotechnol, Nature Medicine (2 commentaries), Nature Rev Cancer, Immunity, J Clin Invest (2+1 commentary), J Exp Medicine (9 total), and Proc Natl Acad Sci USA (15 total)]. **Total citation~29,000; h-Index 91** (Google Scholar).

Liu, F.-T. and Katz, D.H. Immunological tolerance to allergenic protein determinants: A therapeutic approach for selective inhibition of IgE antibody production. **Proc Natl Acad Sci USA** 76:1430-1434, 1979.

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- Hill, P. and Liu, F.-T. An enzyme-linked immunosorbent assay (ELISA) for measurement of murine immunoglobulin E. **J Immunol Method** 45:51-63, 1981
- Liu, F.-T., Albrandt, K., Sutcliffe, J.G. and Katz, D.H. Cloning and nucleotide sequence of mouse immunoglobulin e chain cDNA. **Proc Natl Acad Sci USA** 79:7852-7856, 1982.
- Orida, N., Feldman, J.D., Katz, D.H. and Liu, F.-T. IgE-mediated chemotaxis of rat basophilic leukemia cells towards specific antigen. **J Exp Med** 157:2166-2171, 1983.
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- Liu, F.-T. and Orida, N. Synthesis of surface immunoglobulin E receptor in Xenopus oocytes by translation of mRNA from rat basophilic leukemia cells. **J Biol Chem** 259:10649-10652, 1984.
- Liu, F.-T., Albrandt, K., Mendel, E., Kulczycki, A., Jr. and Orida, N.K. Identification of an IgE-binding protein by molecular cloning. **Proc Natl Acad Sci USA** 82:4100-4104, 1985.
- Albrandt, K.A., Orida, N.K. and Liu, F.-T. An IgE-binding protein with a distinctive repetitive sequence and homology with an IgG receptor. **Proc Natl Acad Sci USA** 84:6859-6863, 1987.
- Gritzmacher, C.A. and Liu, F.-T. Expression of a recombinant murine IgE in transfected myeloma cells. **J Immunol** 138:324-399, 1987.
- Gritzmacher, C.A. and Liu, F.-T. Conserved organization of the murine immunoglobulin e gene region: Restriction endonuclease maps and switch-region nucleotide sequence. **J Immunol** 139:603-607, 1987.
- Gritzmacher, C.A., Robertson, M.W. and Liu, F.-T. IgE-binding protein: Subcellular location and gene expression in many murine tissues and cells. **J Immunol** 141:2801-2806, 1988.
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