BIOGRAPHICAL SKETCH

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NAME **THEOHARIDES, THEOHARIS C.**	POSITION TITLE **Professor of Pharmacology and Internal Medicine (Allergy & Clinical Immunology)**
eRA COMMONS USR NAME (credential, e.g. agency login) **THEOHAR**	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
Yale University, New Haven, CT	B.A.	1972	Biology & Hist. Medicine
Yale University, New Haven, CT	M.S.	1975	Neuroimmunology
Yale University, New Haven, CT	M.Phil.	1975	Immunopharmacology
Yale University, New Haven, CT	Ph.D.*	1978	Pharmacology
Yale University, New Haven, CT	M.D.	1983	Medicine
Tufts University, Fletcher School Law & Diplomacy	Certificate	1999	Leadership& Management
Harvard Univ, J.F. Kennedy School of Government	M.P.A.	Deferred	Biomedical Res Policy

*Doctoral *Thesis advisors: W.W. Douglas, M.D.-Royal Acad. Sciences; Paul Greengard, Ph.D.-2000 Nobel Laureate in Physiol & Med; Doctoral Thesis examiner, George E. Palade, M.D.- 1974 Nobel Laureate in Physiology& Medicine*

A. Personal Statement

I have been studying the regulation of mast cell activation and its role in neuroinflammatory diseases for over 30 years. I was the first to report that mast cells: (a) can secrete specific mediators selectively without degranulation; (b) can regulate blood-brain-barrier permeability; (c) can be activated by corticotropin-releasing hormone (CRH) to release VEGF selectively; (d) can be activated by synergistic action of CRH and neurotensin under stress; (e) can be activated by IL-33 and substance P synergistically, to secrete TNF, accompanied by extracellular secretion of mitochondrial DNA; (f) stimulate microglia activation. I have been placed in the top 5% of authors most cited in pharmacological and immunological journals.

B. Positions and Honors

1968-1971 Assistant in Research, Department of Biology, Yale University, New Haven, CT
1971-1978 Assistant in Research, Department of Pharmacology, Yale University, New Haven, C
1978-1983 Research Associate, Allergy & Clin. Immunology, Dept. Internal Med, Yale
1984-1986 Associate in Clinical Immunology, Tufts University School of Medicine, Boston, MA
1986-1993 Training in Internal Medicine, Dept. of Internal Medicine, NEMC, Center, Boston,
1985-1992 Director of Medical Pharmacology, Tufts University School of Medicine, Boston,
1983-1988 Assistant Professor of Pharmacology, Biochemistry and Psychiatry, Tufts University
1989- Associate Professor of Pharmacology (1989-1994), Biochemistry and Psychiatry, Tufts
1995- Professor of Pharmacology, and Biochemistry (2002-), Tufts U (tenured 11/2/91)
1995- Professor of Internal Medicine (Allergy Section), Tufts Univ & Tufts Medical Center
2004- Director, Molecular Immunopharmacology and Drug Discovery Laboratory, Tufts

Honors

1971 *Connecticut Commission for Undergraduate Research Award*
1971 *Yale College Dean's Award* for senior research thesis
1972 *Cum Laude & Divisional Honors* for joint Bachelor of Arts, Yale College
1972 T*heodore Cuyler Award* "for outstanding Yale College graduates," Yale University
1975-1977 *Advisory Committee to the Dean,* Yale University Graduate School
1977 *G. Papanicolaou Graduate Research Award,* Hellenic University Club of New York
1979-1983 *Medical Award,* Hellenic Medical Society of New York
1980 *Winternitz Prize* "for the best work in Pathology," Yale Univ. School of Medicine
1981-1982 *Research Fellowship,* International Inst. of Cellular & Molecular Pathology, Brussels

1986-1989 *Chairman - Neuroimmunology,* 2nd & 3rd World Conf on Inflammation, Monte Carlo
1986 *Distinguished Service Citation* for faculty excellence, Tufts University
1987-1988 *Special Faculty Recognition Award,* Tufts University School of Medicine
1987 *Member, Alpha Omega Alpha* National Medical Honor Fraternity, USA
1989-1996 *Citation for Excellence in Teaching,* Tufts University School of Medicine
1993 *Medical Awareness and Patient Support Award,* Interstitial Cystitis Association, NY
1994 *Diocean Award for Humanitarian Health Care,* Greek Orthodox Diocese of Boston
1995 C*hairman,* International Committee to Upgrade Medical Education in Greece
1997-2001 *Supreme Scientific Advisory Health Council,* Secretary of Health, Hellenic Republic
1998 *Community Service Award*, Mayor Thomas Menino of Boston, MA
1999-2002 Supreme Health Board, Instit of Social Welfare, Sec. of Labor & Human Res,
1999 *Oliver Smith Award* "recognizing excellence, compassion and service", NEMC
1999 *Archon of the Ecumenical Patriarchate of Constantinople*, Greek Orthodox Church
2002 Dr. George Papanicolaou Gold Medal for contributions in humanism and medicine
2003-2008 National Public Health Council, Secretary of Health, Hellenic Republic
2006 *Hygeia Award*, New Engl. Hellenic Medical & Dental Society, Boston, MA
2007 *Science and Medicine Award*, Fed. HASNE, Boston, MA
2008 *Fellow*, American Academy of Allergy, Asthma, Immunology
2009 *Fellow*, European Academy of Allergology and Clinical Immunology
2011 *Honorary Doctor of Medicine,* Athens University (conferred January, 2011)
2013 *Honorary Doctor of Science,* HellenicAmerican University (conferred October, 2013)

Public Advisory Committees

1986-2018 Massachusetts Drug Formulary Commission
2001-2002 NSF Div. Integrative Biology and Neuroscience
2000-2002 NIH Biobehavioral & Behavioral Processes-SS2
2002 NIH ZDK1 GRB-B (J2) Biol Neuroendoc Peptides
2002 NIH ZDK11 GRB-9 Urology Research Centers
2002 NIDDK Reparative Medicine Section (SSS-M)
2003 VA Neurobiology Section A
2004 Italian Ministry of Universities and Research
2007 ZAI1 SV-IS1 Cellular & Inflammatory Pathways
2007 NIAID Asthma & Allergic Diseases Cooperative Research Centers
2008 NIH ZRG1 CFS-D
2009 NIH ZDK1 GRB-6 Urology Research Centers
2009 SEP, National Center for Minority Health & Disparities (NCMHD)
2010 NIMSD ZRG1 MOSS-D12B SBIR: Dermatology, Rheumatology and Inflammation
2012 ZRG1 CFS-M (80) S-Chronic Fatigue Syndrome
2012 ZRG1 MOSS T12- Small Business: Dermatology, Rheumatology and Inflammation
2012 ZRG1 MOSS-S (04) S-Musculoskeletal, Oral a& Skin Sciences
2013 ZRG1 VH-D 02M Molecular and Cellular Hematology
2015 ZRG1 MOSS-V (02) M Special Emphasis Panel
2015 ZRG1 MOSS-C (02) Skin Immunology-CHAIR
2016 ZRG1 MOSS-C (02) Skin Immunology

Patents

Methods: US No. 5,250,529; 5,648,350; 5,821,259; 5,855,884; 5,994,357; 6,020,305; 6,689,748; 7,759,307; 7,923,0431; 8,268,365; 9,050,275; 9,176,146. EPO No. 0618796; EPO No. 0748217
Compositions: US No. 6,624,148; 6,635,625; 6,641,806; 6,645,482; 6,984,667; 7,155,278; 7,906,153; 7,799,766

Administrative experience

President, Theta Biomedical Consulting and Development Co., Inc.
President, BiomedAdvice, LLC
President, BrainGate (non-profit-Greece)
Scientific Director, AutismFreeBrain (non-profit-USA)
Scientific Director and Manager, Algonot, LLC

C. Contribution to Science (publications selected from 388 in Pubmed.gov; 24,302 citations; h-index 74).

1. Mast cells secrete the mediators selectively, thus participating in different biological processes.

- Sieghart W, Theoharides TC, Alper LS, Douglas WW, Greengard P. Calcium dependent protein phosphorylation during exocytotic release of mast cell secretory granules. ***Nature*** 1978; 275:329-331. PMID: 357989
- Theoharides TC, Douglas WW. Secretion in mast cells induced by calcium entrapped within phospholipid vesicles. ***Science*** 1978; 201:1143-1145. PMID: 684435
- Theoharides TC, Sieghart W, Greengard P, Douglas, WW. Anti-allergic drug cromolyn may inhibit histamine secretion by regulating phosphorylation of a mast cell protein. ***Science*** 1980; 207:80-82. PMID: 6153130
- Theoharides TC, Bondy PK, Tsakalos ND, Askenase PW. Differential release of serotonin and histamine from mast cells. ***Nature*** 1982; 297:229-231. PMID: 6176873
- Kandere-Grzybowska K, Letourneau R, Kempuraj D, Donelan J, Poplawski S, Boucher W, Athanassiou A, Theoharides TC. L-1 induces vesicular secretion of IL-6 without degranulation from human mast cells. ***J Immunol.*** 2003; 171(9):4830-6. PMID:14568962

2. Stress has pro-inflammatory effects through CRH-induced mast cell activation.

- Esposito P, Chandler N, Kandere K, Basu S, Jacobson S, Connolly R, Tutor D, Theoharides TC. Corticotropin-releasing hormone and brain mast cells regulate blood-brain-barrier permeability induced by acute stress. ***J Pharmacol Exp Ther.*** 2002; 303(3):1061-6. PMID: 12438528
- Cao J, Papadopoulou N, Kempuraj D, Boucher WS, Sugimoto K, Cetrulo CL, Theoharides TC. Human mast cells express corticotropin-releasing hormone (CRH) receptors and CRH leads to selective secretion of vascular endothelial growth factor (VEGF). ***J Immunol.*** 2005; 174:7665-7675. PMID: 15944267
- Donelan J, Papadopoulou N, Marchand J, Kempuraj D, Lytinas M, Boucher W, Papaliodis D, Theoharides TC. Corticotropin-releasing hormone (CRH) induces skin vascular permeability through a neurotensin (NT)-dependent process. ***Proc Natl Acad Sci USA.*** 2006; 103:7759-7764. PMID: 16682628; PMCID: 2840132
- Vasiadi M, Therianou A, Sideri K, Smyrnioti M, Delivani D, Sismanopoulos N, Asadi S, Katsarou-Katsari A, Petrakopoulou D, Theoharides A, Antoniou C, Stavrianeas N, Kalogeromitros D, Theoharides TC. Increased serum CRH levels with decreased skin CRH-R1 gene expression in psoriasis and atopic dermatitis. ***J Allergy Clin Immunol.*** 2012; 129(5):1410-3. PMID: 22360979; PMCID: PMC3340539
- Karagkouni A, Alevizos M, Theoharides TC. Effect of stress on brain inflammation and multiple sclerosis. ***Autoimmun Rev.*** 2013; 12(10):947-53. PMID: 23537508

3. Mast cells, microglia and objective biomarkers in autism spectrum disorders.

- Tsilioni I, Dodman N, Petra AI, Taliou A, Francis K, Moon-Fanelli A, Shuster L, Theoharides TC. Elevated serum neurotensin and CRH levels in children with autistic spectrum disorders and tail-chasing bull terriers with a phenotype similar to autism. ***Translational Psychiatry***. 2014; 4:e466. PMID: 25313509
- Tsilioni I, Taliou A, Francis K, Theoharides TC. Children with autism spectrum disorders, who improved with a luteolin-containing dietary formulation, show reduced serum levels of TNF and IL-6. ***Translational Psychiatry***. 2015 Sep 29;5:e647. PMID:26418275
- Theoharides TC, Stewart JM, Panagiotidou S, Melamed I. Mast cells, brain inflammation and autism. ***Eur J Pharmacol.*** 2016 May 5;778:96-102. PMID: 25941080
- Theoharides TC, Tsilioni I, Patel AB, Doyle R. Atopic diseases and inflammation of the brain in autism spectrum disorders. ***Translational Psychiatry***. 2016, Jun 28;6(6):e844. PMID:27351598
- Patel AB, Tsilioni I, Leeman SE, Theoharides TC. Human microglia stimulation via neurotensin receptor 3/sortilin: a therapeutic target in autism inhibitable by methoxyluteolin. ***Proc Natl Acad Sci***. 2016, in press.

4. Luteolin and methoxyluteolin have potent anti-oxidant and anti-inflammatory actions.

- Middleton E Jr, Kandaswami C, Theoharides TC. The effects of plant flavonoids on mammalian cells: implications for inflammation, heart disease, and cancer. ***Pharmacol Rev***. 2000; 52(4):673-751. PMID: 11121513
- Kempuraj D, Tagen M, Iliopoulou BP, Clemons A, Vasiadi M, Boucher W, House M, Wolfberg A, Theoharides TC. Luteolin inhibits myelin basic protein-induced human mast cell activation and mast cell-dependent stimulation of Jurkat T cells. ***Br J Pharmacol.*** 2008; 155(7):1076-84. PMID: 15912140; PMCID: 2597265
- Kandere-Grzybowska K, Kempuraj D, Cao J, Cetrulo CL, Theoharides TC. Regulation of IL-1 induced selective release of IL-6 from human mast c ells and inhibition by quercetin. ***Br J Pharmacol***. 2006 May;148(2):208-15. PMID:16532021
- Weng Z, Patel AB, Panagiotidou S, Theoharides TC. The novel flavone tetramethoxyluteolin is a potent inhibitor of human mast cells. ***J Allergy Clin Immunol.*** 2014; 135(4):1044-1052.e5. PMID: 25498791
- Theoharides TC, Stewart JM, Hatziagelaki E, Kolaitis G. Brain "fog," inflammation and obesity: key aspects of neuropsychiatric disorders improved by luteolin. ***Front Neurosci*** 2015;9:225. PMID: 26190965

5. Mast cells are involved in inflammatory conditions.

- Theoharides TC and Canellakis ZN. Spermine inhibits induction of ornithine decarboxylase by cAMP but not by dexamethasone in rat hepatoma cells. ***Nature*** 1975; 255:733-734. PMID: 49027
- Theoharides TC, Zhang B, Kempuraj D, Tagen M, Vasiadi M, Angelidou A, Alysandratos KD, Kalogeromitros D, Asadi S, Stavrianeas N, Peterson E, Leeman S, Conti P. IL-33 augments substance P-induced VEGF secretion from human mast cells and is increased in psoriatic skin. ***Proc Natl Acad Sci USA.*** 2010; 107(9):4448-53. PMID: 20160089; PMCID: 2840132I
- Theoharides TC, Alysandratos KD, Angelidou A, Delivanis DA, Sismanopoulos N, Zhang B, Asadi S, Vasiadi M, Weng Z, Miniati A, Kalogeromitros D. Mast cells and inflammation. ***Biochim Biophys Acta.*** 2012; 1822(1):21-33. PMID: 21185371; PMCID: PMC3318920
- Theoharides TC. Atopic conditions in search of pathogenesis and therapy. ***Clin Ther***. 2013; 35(5):544-7. PMID: 23642292
- Theoharides TC, Valent P, Akin C. Mast cells, mastocytosis and related disorders. ***New Engl J Med***. 2015; 373(2):163-72. PMID:26154789

For a full list of my publications, please copy and paste into a browser the following link:

http://www.ncbi.nlm.nih.gov/sites/myncbi/theoharis.theoharides.1/bibliography/40779374/public/?sort=date&direction=ascending

D. Research Support

Ongoing Research Support

Pfizer #WI194875 Duration 1/1/15-12/31/16
PI: Theoharides
Efffect of inflammasome in psoriasis

Completed Research Support

National Psoriasis Foundation Translational Award Duration: 6/1/13-5/31/15
PI: Theoharides
The role of the novel mTOR pathway in psoriasis and the effect of methoxyluteolin

Autism Research Institute Duration: 7/1/14-6/30/15
PI: Theoharides
Serum levels of CRH, neurotensin and mitochondrial DNA in children with autism

1 R01 NS071361-05 Duration: 7/1/10-6/30/15
PI: Theoharides
Brain mast cells and chronic fatigue syndrome

1 R01 NS066205-04 Duration: 7/1/10-6/30/15
MPI: Veves and LoGerfo; Role: Subcontract
Role of neuropeptides in diabetic foot problems