

June 20, 2022

NAME: Kartik Venkatachalam, Ph.D.

PRESENT TITLE: Associate Professor of Integrative Biology and Pharmacology
McGovern Medical School
The University of Texas Health Science Center at Houston

WORK ADDRESS: Department of Integrative Biology and Pharmacology
6431 Fannin Street, MSB 4.214
Houston, TX 77030

UNDERGRADUATE EDUCATION: B.S. Biochemistry, 1997
University of Delhi
New Delhi, India

GRADUATE EDUCATION: Ph.D. Biochemistry, 2002
University of Maryland School of Medicine
Baltimore, MD

POSTGRADUATE TRAINING: Postdoctoral Research Associate, 2003-2008
Department of Biological Chemistry
Johns Hopkins University School of Medicine
Baltimore, MD

ACADEMIC AND ADMINISTRATIVE APPOINTMENTS:

Research Assistant Professor (non-tenure track), 2008-2010
Department of Biological Chemistry
Johns Hopkins University School of Medicine
Baltimore, MD

Assistant Professor (tenure track), 2010-2017
McGovern Medical School
The University of Texas Health Science Center at Houston
Houston, TX

Regular Faculty Member, 2010-Present
CRB/BCB Program
The University of Texas Graduate School of Biomedical Sciences
Houston, TX

Regular Faculty Member, 2010-Present
Neuroscience Program
The University of Texas Graduate School of Biomedical Sciences
Houston, TX

Associate Professor with tenure, 2017-Present
McGovern Medical School
The University of Texas Health Science Center at Houston
Houston, TX

Co-director, Neuroscience Graduate Program, 2021-Present
MD Anderson Cancer Center UTHealth Graduate School of Biomedical
Sciences, Houston, TX

HONORS AND AWARDS:

Academic Awards:

Postdoctoral Research Award, 2006
Mucopolipidosis IV Foundation

1st Place, Postdoctoral Association Scientific Seminar Series, 2008
Johns Hopkins University

Daniel Nathans Young Investigator Research Award, 2009
Johns Hopkins University

Chosen Speaker, 2015
Breakthrough Discoveries Symposium
Annual Medical School Faculty Research Retreat
McGovern Medical School
The University of Texas Health Science Center at Houston

Teaching Awards:

Deans Teaching Excellence Awards, 2012, 2014, 2016
 McGovern Medical School
 The University of Texas Health Science Center at Houston

Norman Weisbrodt Education Award, 2015
 Department of Integrative Biology and Pharmacology
 McGovern Medical School
 The University of Texas Health Science Center at Houston

Commendation for Service to Graduate Education, 2016
 MD Anderson Cancer Center UTHealth Graduate School of Biomedical Sciences

EDITORIAL POSITIONS:Manuscript Reviewer (2010-present):

Autophagy, Aging Cell, Biochemistry and Cell Biology, Biomolecules, Cell, Cells, Cell Calcium, Cell Reports, Cellular and Molecular Life Sciences, Current Biology, Disease Models and Mechanisms, ELife, eNeuro, Experimental Neurology, Frontiers in Cell and Developmental Biology, Frontiers in Cellular Neuroscience, Frontiers in Immunology, Gene, Genetics, Human Molecular Genetics, Journal of Biological Chemistry, Journal of Cell Biology, Journal of Neuroscience, Journal of Physiology, Learning and Memory, Molecular Psychiatry, Molecular Biology and Evolution, Nature, Nature Cell Biology, Nature Communications, Nature Methods, Nature Neuroscience, Nature Scientific Reports, Neurobiology of Aging, Neurobiology of Disease, Neuron, Neuroscience Letters, Philosophical Transactions of the Royal Society B, PLOS Biology, PLOS One, Protein and Cell, Science Signaling, Science Advances, Trends in Biochemical Sciences (TIBS)

SERVICE ON NATIONAL GRANT REVIEW PANELS, STUDY SECTIONS, COMMITTEES:Permanent/Standing member:

NIH Study Section, Neural Oxidative Metabolism and Death (NOMD)
 November 2021 —

Ad-hoc grant reviewer:

Early Career Fellowship Grant Review Panel — **2012**
 Wellcome Trust/DBT India Alliance, India

Million Dollar Bike Race Grant Review Panel — **2014, 2016, 2017**
 Penn Orphan Disease Center
 Perelman School of Medicine, University of Pennsylvania Health System

Early Career Award Grant Review Panel — **2015**
 Czech Science Foundation, Czech Republic

Sir Henry Dale Fellowship Grant Review Panel — **2015-2016**
 Wellcome Trust, UK

Grant Review Panel — **2008, 2016, 2018**
 The MLIV Foundation

MRC Research Grants — **2017**
 Medical Research Council, U.K.

Alzheimer's and Related Diseases Research Award Fund
 Commonwealth of Virginia — **2017**

NIH Study Section, Synapses and Cytoskeleton (SYN)
October 2017, June 2019

NIH Study Section, Neural Oxidative Metabolism and Death (NOMD)
February 2020, June 2020, February 2021, June 2021

NIH Special Emphasis Panel, 2021/01 ZRG1 F02B-E (20) L
October 2021

SERVICE ON THE UNIVERSITY OF TEXAS MEDICAL SCHOOL AT HOUSTON COMMITTEES:

Interviewer, 2011, 2015, 2016
 MD and MD/PhD Candidates
 UT Medical School Admissions Committee

Co-organizer, 2012-2015
 Department of Integrative Biology and Pharmacology Seminar Series

Member, 2014-2017
 UT Medical School Admissions Committee

Member, 2018-2020
 Department of Integrative Biology and Pharmacology Faculty Recruitment
 Committee

SERVICE ON GRADUATE SCHOOL COMMITTEES:

Member, 2011-2012
Recruitment Subcommittee
Graduate Program in Cell and Regulatory Biology

Member, 2012-2013
Recruitment Council (GSBS Standing Committee)

Member, 2013-Present
Examination Subcommittee
Graduate Program in Cell and Regulatory Biology
Interviewer of Graduate Student Candidates, 2012-2013

Reviewer of Student Candidacy Abstracts, 2013
Graduate Program in Neuroscience

Member, 2013-2015
Faculty Membership Committee (GSBS Standing Committee)

Member, 2014-2015
Admissions Subcommittee
Graduate Program in Cell and Regulatory Biology

Chair, 2015-2016
Examination Subcommittee
Graduate Program in Cell and Regulatory Biology

Alternative Chair and Member, 2018
Examination Committee
Graduate Program in Biochemistry and Cell Biology

Member 2020-2021
Steering Committee
Graduate Program in Biochemistry and Cell Biology

Co-director 2021-Present
Graduate Program in Neuroscience

Talk and Poster Judging:

Annual Poster Competition, 2011
Neuroscience Program
MD Anderson Cancer Center UTHealth Graduate School of Biomedical
Sciences

Annual Neuroscience Poster Competition, 2011-2021
UTHealth Neuroscience Research Center

Annual Poster and Research Talk Competition, 2012-2016
Cell and Regulatory Biology Program
MD Anderson Cancer Center UTHealth Graduate School of Biomedical
Sciences

MD Anderson Cancer Center UTHealth Graduate School of Biomedical Sciences
Graduate Student Advisory Committees:

Heather Turner, 2011-2016

Michael J. McCarthy (Master's student), 2012-2013

Alejandro Vila, 2012-2016

Denisse Meza, 2012-2013

Juyeon Jo, 2012-2016

Yu Huang, 2012-2017

Antonio J. Tito, 2012-2017

Brittany C. Parker-Kerrigan, 2012-2014

Sarah Baum, 2012-2013

Jian Xiong (Master's student), 2013-2014

Kelsey Maxwell, 2013-2018

Nabila Boukelmoune (Master's student), 2013-2014

Amanda Haltom, 2014-2015

Alexandria Plumer, 2014-2017

Jie Chen, 2017-2019

Jian Xiong, 2015-2021

Savannah West, 2018-Present

Jessica Symons, 2019-Present

Paulina Horton, 2019-Present

Jessie Morrill, 2019-Present

Janani Subramaniam 2021-Present

MD Anderson Cancer Center UTHealth Graduate School of Biomedical Sciences
Graduate Student Examination Committees:

Member, 2014
Examination Committee of Yu Huang

Member, 2014
Examination Committee of Kelsey Maxwell

Member, 2014
Examination Committee of Mariya Liu
Member, 2014
Examination Committee of Randi Stewart

Member, 2015
Examination Committee of Alexandria Plumer

Chair, 2015
Examination Committee of Courtney Olsen

Chair, 2015
Examination Committee of Michael J. McCarthy

Chair, 2015
Examination Committee of Tanya Baldwin

Member, 2020
Examination Committee of Jessie Morrill

MD Anderson Cancer Center UTHealth Graduate School of Biomedical Sciences
Rotation Students:

Yu Huang, 2012

Ryan Baumert, 2013

Leandra Mangieri, 2014

Albert Hunt, 2014

Steven Gregory, 2015

Jie Chen, 2016

Nicholas Karagas, 2016

Kristen Clemons, 2017

Jonathan Schultz, 2018

Matthew Price, 2022

SERVICE TO THE COMMUNITY:

Other Graduate Student (Ph.D.) Advisory Committees:

Bo Xiong, Baylor College of Medicine, 2011-2013

Wu-Lin Charng, Baylor College of Medicine, 2011-2013

Shiuan Wang, Baylor College of Medicine, 2012-2014

Upasana Gala, Baylor College of Medicine, 2012-2016

Gabriela David, Baylor College of Medicine, 2013-2016

Tong-Chao Li, Baylor College of Medicine, 2013-2016

Nele Haelterman, Baylor College of Medicine, 2013-2016

Kuchuan Chen, Baylor College of Medicine, 2013-2016

Lucy Liu, Baylor College of Medicine, 2014-2017

Mumine Senturk, Baylor College of Medicine, 2013-2018

Kai Li Tan, Baylor College of Medicine, 2014-2018

Dongxue Mao, Baylor College of Medicine, 2014-2018

Berrak Ugur, Baylor College of Medicine, 2014-2018

Burak Tepe, Baylor College of Medicine, 2014-2019

Hui Ye, Baylor College of Medicine, 2015-2019

Seung Yeop Han, Baylor College of Medicine, 2015-2021

Jose Salazar, Baylor College of Medicine, 2016-2022

Thomas Ravencroft, Baylor College of Medicine, 2018-2021

Liping Wang, Baylor College of Medicine, 2018-2022

Matthew Avalos, Baylor College of Medicine, 2018-Present

Outreach/Other activities:

Attendee, 2011, 2014
GSBS Faculty Meeting

Attendee, 2013
GSBS FAC for visitation

Participant, 2014
Research Mentor Training Event
Rice University

Speaker, 2014-2015
Project GRAD, Houston (Favrot Fund Advanced Biology)

- This program is designed to help children from low-income households develop and achieve their educational aspirations

Participant, 2015
“Mentoring Works” Seminars 1 and 2

Judge, 2017-2019
St. Thomas Episcopal School Science Fair

SPONSORSHIP OF CANDIDATES FOR POSTGRADUATE DEGREE:

Kristen Clemons, 2017-2018
Masters Degree, Cell and Regulatory Biology Program

Nicholas Karagas, 2016-2020
MD/PhD Candidate, Cell and Regulatory Biology Program

Matthew Price, 2022-Present
PhD candidate, Neuroscience Program

SPONSORSHIP OF POSTDOCTORAL FELLOWS:

Dr. Ching-On Wong, 2010-2020

Dr. Jewon Jung, 2017-2021

Dr. Qi Zhang, 2021-Present

Dr. Richa Gupta, 2021-Present

Dr. Elham Rastegari, 2022-Present

CURRENT AND PAST TEACHING RESPONSIBILITIES:Medical School Teaching:

Instructor, 2013-2020

Medical School Pharmacology

Number of Lecture Hours/Year: 6, Number of students/year: 250

Titles of Lectures:

- Ethanol Abuse (1 hour/year)
- Antitumor Antibiotics (1 hour/year)
- Drug Resistance (1 hour/year)
- New Directions in Cancer Treatment (1 hour/year)
- Pharmacology of Mood Disorders (1 hour/year)
- Pharmacology of Anxiety, Sleep, Hypnotics (1 hour/year)

MD Anderson Cancer Center UTHealth Graduate School of Biomedical Sciences Teaching:

Course Director, 2021

BCB Seminar Series (GS12 1011)

Number of lecture hours: NA (seminar course)

Instructor, 2011-2021

Molecular Basis of Cell Signaling (GS13 1024)

Number of Lecture Hours/Year: 3 (2011), 4.5 (2012, 2014, 2015), 6 (2013-2019), class temporarily suspended in 2020

Titles of Lectures:

- mTOR Signaling
- Ion Channels in Sensory Transduction
- Emerging Concepts in Channel Physiology
- Calcium Compartmentalization

Instructor, 2012-2021

Current Methods in Structural and Molecular Biology (GS03 1023)

Number of Lecture Hours/Year: 1

Title of Lecture:

- *Drosophila* in Biomedical Research

Instructor, 2011-2013

Cell Biology (GS04 1013)

Number of Lecture Hours/Year: 1.5 (2011-2012), 3 (2013)

Titles of Lectures:

- Sensory Transduction
- Calcium Signaling

Instructor, 2013

Seminar in Cell Signaling and Regulation (GS04 1751)

Number of Lecture Hours: 1.5

Instructor, 2013

Cell and Systems Physiology (GS12 1254)

Number of Lecture Hours: 4

Title of Lecture:

- Neuroendocrine Regulation of Metabolism

Coordinator, 2013-2014

Seminars in Integrative Biology and Pharmacology (GS12 1051)

Number of Lecture Hours/Year: 0 (2013), 5 (2014)

Instructor, 2014-2021

Foundations in Biomedical Research (GS21 1017)

Number of Lecture Hours/Year: 2

Titles of Lectures:

- Autophagy
- Pathologies of Defective Protein Degradation

Discussion Leader, 2015-2016
Seminars in Integrative Biology and Pharmacology (GS12 1051)
Number of Lecture Hours/Year: 1 (2015), 2 (2016)

MENTORING ACTIVITIES:

Undergraduate Students:

Daria Nikolaeva, 2004-2008 (co-mentored with Dr. Craig Montell)
Johns Hopkins University

Chynna Foucek, 2013
Rice University

Ryan Seo, 2013
Rice University,

Meera Namireddy, 2013-2016
Rice University

Malvika Govil, 2015
Rice University,

Kelly Tomasevich, 2015-2016
Rice University

Alexandra Bulga, 2015-2016
Rice University

Morgan Rousseau, 2016
Rice University

Shilpa Narayanan, 2017-2018
University of Connecticut

Shannon Toole, 2018
Oakwood University, Alabama

Shaoling Han, 2018
Jiao Tong University School of Medicine
Shanghai, China

Abinav Sankranti, 2020-Present
Rice University

Arnav Sankranti, 2020-Present
Rice University

Research Associates:

Geoffrey Broadhead, 2010-2012

Hongxiang Hu, 2010-2014

Yufang Chao, 2012-2019

Morgan Rousseau, 2017-2019

Shannon Coker, 2020-Present

MD Anderson Cancer Center UTHealth Graduate School of Biomedical Sciences
Graduate Students:

Kristen Clemons, 2017-2018
Masters' Degree, Cell and Regulatory Biology Program

Nicholas Karagas, 2016-2020
MD/PhD Candidate, Biochemistry and Cell Biology Program

Matthew Price, 2022-Present
PhD candidate, Neuroscience Program

Medical Students:

Mohammed Qureshi, 2011

Nicholas Karagas, 2014

Postdoctoral Fellows and Non-tenure Track Faculty:

Dr. Ching-On Wong, 2010-2019

Dr. Jewon Jung, 2017-2020

Dr. Qi Zhang, 2021-Present

Dr. Richa Gupta, 2021-Present

Dr. Elham Rastegari, 2022-Present

CURRENT GRANT SUPPORT:

Research Grant, RF1 AG069076 09/01/2020-08/31/2024
 NIH/NIA
Title: Neuropathology in tauopathies stem from depolarization-induced alterations in the planar distribution of phosphoinositides
Direct costs: \$ 1,200,070
Role: PI

Research Grant, R21 AG061646 06/01/2020-05/31/2023
 NIH/NIA
Title: Involvement of an ER to lysosome signaling axis in the onset of neurodegeneration in models of AD
Direct costs: \$ 95,109.5 /year
Role: PI

Research Grant, RF1 AG072176 05/15/2021-04/30/2024
 NIH/NIA
Title: Alterations in somatodendritic bioenergetics in Drosophila models of tauopathy
Direct costs: \$ 750,000
Role: PI

PAST GRANT SUPPORT:

Research Grant, R21 AG061646 07/01/2018-06/30/2021
 NIH/NIA
Title: Modulation of Mitochondrial Proliferation and Function in Drosophila neurons
Direct costs: \$ 137,500 /year
Role: PI

Research Grant, 2019 Starter award 09/01/2019-11/30/2020
 ALS association
Title: Role of the extracellular matrix in C9-ALS
Direct costs: \$ 50,000 /year
Role: co-PI with Dr. Jeffrey Frost

Research Grant, 5R01NS081301-03 02/01/2014 – 01/31/2019
 NIH/NINDS
Title: Alterations in Synaptic Growth and Lipid-raft Organization in a Fly MLIV Model
Direct Cost: \$218,750/year
Role: PI

Research Grant, MDBR-18-132-RAS 1/1/2018 – 12/31/2018
 PENN Orphan Disease Center
Title: Targeting Endolysosomal Proteins to Treat RASopathies
Direct costs: \$47,189/year
Role: PI

Research Grant, 1R21NS094860-01A1 07/01/2016 – 06/30/2018
 NIH/NINDS
Title: GDAP1 Mediated Cellular Damage in MLIV
Direct Cost: \$95,250/year
Role: Co-PI with Dr. Kirill Kiselyov, University of Pittsburgh

Research Grant, MDBR-15-104-ML4 05/01/2016-12/31/2017
 Penn Medicine Orphan Disease Center
Title: Mechanisms of Neurodevelopmental Defects in a Lysosomal Storage Disease
Direct Cost: \$53,000/year
Role: PI

Small Award to Conduct Research on Fly Models of ALS
 07/01/2014-09/30/2014
 The Homejoy Foundation
 The purpose of the small award of \$1000 was to pay for the imaging costs associated with the investigation of *Drosophila* models of ALS.

Postdoctoral Fellowship, 07104247 08/01/2007-07/31/2008
 The MLIV Foundation
Title: *Drosophila* as a Genetic Model for MLIV
Direct Cost: \$60,000/year
Role: PI

PUBLICATIONS:

A. Abstracts:

1. Patterson, R.L., Venkatachalam, K., and Gill, D.L.: Stress Induced Over-Expression of Inositol Trisphosphate-Receptors and the Effect of Store-Operated Calcium Entry Mechanisms. *FASEB Summer Conference: Calcium and Cell Function*, Copper Mountain, CO, 2000.
2. Venkatachalam, K., Patterson, R.L., Ma, H-T., and Gill, D.L.: Action of 2-Aminoethoxydiphenyl Borate on Inositol Trisphosphate Receptor Function, *FASEB Summer Conference: Calcium and Cell Function*, Copper Mountain, CO, 2000.

3. Venkatachalam, K., Ma, H-T., Ford, D.L., and Gill D.L.: Expression of Functional Receptor-Coupled TRPC3 Channels in DT40 Triple InsP3 Receptor-Knockout Cells, *Gordon Research Conferences: Calcium Signaling*, Oxford, U.K., 2001.
4. Venkatachalam, K., Ford, D.L., van Rossum, D.B., and Gill, D.L.: Assessment of the Mechanisms of Activation of Exogenously Expressed TRPC3 and TRPC4 Channels in DT40 Chicken Pre-B Cells and HEK Cells, *12th International Symposium on Calcium-Binding Proteins and Calcium Function in Health and Disease*, Cavalese, Italy, 2002.
5. Venkatachalam, K., Ford, D.L., and Gill, D.L.: Mechanisms of Activation of Exogenously expressed TRPC3 and TRPC5 Channels in DT40 and HEK293 Cell Lines, *FASEB Summer Conference: Calcium and Cell Function*, Salt Lake City, UT, 2002.
6. Venkatachalam, K., Long, A.A., Elsaesser, R., Broadie, K., and Montell, C.: *Drosophila melanogaster* as an Animal Model for the Lysosomal Storage Disease, Mucopolipidosis type IV, *Gordon Research Conferences*, Andover, NH, 2006.
7. Venkatachalam, K., Long, A.A., Elsaesser, R., Nikolaeva, D., Broadie, K., and Montell, C.: Development of Novel Therapeutic Strategies for the Lysosomal Storage Disease, Mucopolipidosis type IV, Using a *Drosophila melanogaster* Animal Model. *Keystone Symposium on TRP Channels*, Keystone, CO, 2007.
8. Venkatachalam, K., Long, A.A., Elsaesser, R., Nikolaeva, D., Broadie, K., and Montell, C.: Defective Clearance of Apoptotic Cells Underlies the Motor Deficit in a *Drosophila* Model of Mucopolipidosis Type IV. *Symposium on Mucopolipin Function in Disease at the National Institutes of Health*, Bethesda, MD, 2008.
9. Wong, CO., Lin, Y.Q., Broadhead G.T., Ganguly, A., Cabral, F., Bellen, H.J. and Venkatachalam, K.: TRPV Channels are Required for Glutamatergic Synapse Development. *Gordon Research Conference on Cell Biology of Neurons*, Waterville Valley, NH, 2012.
10. Gala, U., Tong, C., Jaiswal, M., Sandoval, H., Yamamoto, S., Bayat, V., Xiong, B., Zhang, K., Charng, WL., Duraine, L., Venkatachalam, K., and Bellen H.J.: A Novel Role of *Drosophila* P/Q type Voltage Gated Calcium Channel Subunits in Autophagy. *Annual Drosophila Research Conference*, Washington D.C., 2013.

11. Wong, CO., Lin, YQ., Chen, K., Broadhead, G.T., Duraine, L., Ganguly, A., Cabral, F., Bellen, H.J., and Venkatachalam, K.: A TRPV Channel Controls Presynaptic Ca^{2+} Concentration to Regulate Presynaptic Growth and Synaptic Vesicle Release Probability. *XXXVII International Congress of Physiological Sciences (IUPS)*, Bath, U.K., 2013.
12. Wong, CO., Palmieri, M., Li, J., Feng, X., Chao, Y., Broadhead, G.T., Zhu, M.X., Collins, C.A., Sardiello, M., and Venkatachalam, K.: Alterations in TORC1-Dependent JNK-Activation Underlie the Neurodevelopmental Defects Associated with Lysosomal Dysfunction. *Gordon Research Conference on Cell Biology of Neurons*, Waterville Valley, NH, 2014.
13. Wong, CO., Lin, YQ., Chen, K., Chao, Y., Duraine, L., Yoon, WH., Sullivan, J., Broadhead, G.T., Sumner, C.J., Lloyd, T.E., Macleod, G.T., Bellen, H.J., and Venkatachalam, K.: TRPV Channel in *Drosophila* Motor Neurons Regulates Presynaptic Resting Ca^{2+} Levels, Synapse Growth, and Synaptic Transmission. *Gordon Research Conference on Cell Biology of Neurons*, Waterville Valley, NH, 2014.
14. Wong, CO., Hu, H., Chao, Y., Namireddy, M., and Venkatachalam, K.: Role of a Lysosomal Chloride Transporter in Phagocytic Degradation of Bacteria. *Annual Drosophila Research Conference*, Chicago, IL, 2015.
15. Wong, CO., Palmieri, M., Li, J., Akhmedov, D., Chao, Y., Broadhead, G.T., Zhu, M.X., Berdeaux, R., Collins, C.A., Sardiello, M., and Venkatachalam, K.: Diminished MTORC1-Dependent JNK-Activation Underlies the Neurodevelopmental Defects Associated with Lysosomal Dysfunction. *Annual Drosophila Research Conference*, Chicago, 2015.
16. Wong, CO., Hu, H., Chao, Y., Namireddy, M., and Venkatachalam, K.: Role of a Lysosomal Chloride Transporter in Phagocytic Degradation of Bacteria. *Gordon Research Conference on Lysosomal Diseases*, Galveston, TX, 2015.
17. Wong, CO., Palmieri, M., Li, J., Akhmedov, D., Chao, Y., Broadhead, G.T., Zhu, M.X., Berdeaux, R., Collins, C.A., Sardiello, M., and Venkatachalam, K.: Diminished MTORC1-Dependent JNK-Activation Underlies the Neurodevelopmental Defects Associated with Lysosomal Dysfunction. *Gordon Research Conference on Lysosomal Diseases*, Galveston, TX, 2015.
18. Cho, KJ, Gregory, S., Wong, CO., Tomasevich, K., Levental, I., Zhou, Y., van der Hoeven, D., Hancock, J.F., and Venkatachalam, K.: Inhibition of TRPML1 Reveals a Selective Vulnerability of Cancer Cells to Lysosomal Dysfunction. *Gordon Research Conference on Lysosomal Diseases*, Florence, Italy, 2017.

19. Wong, CO., Gregory, S., Yu, H., Chao, Y., Sepulveda, V., He, Y., Li-Kroeger, D., Goldman, W.E., Bellen, H.J., and Venkatachalam, K.: Lysosomal Degradation is Required for Sustained Phagocytosis of Bacteria by Macrophages. *Gordon Research Conference on Organellar Ion Channels and Transporters*, West Dover, VT, 2017.

B. Original Articles:

1. Ma, H-T., Venkatachalam, K.*, Li, H-S., Montell, C., Kurosaki, T., Patterson, R.L., and Gill, D.L.: Assessment of the Role of the Inositol 1,4,5-Trisphosphate Receptor in the Activation of Transient Receptor Potential Channels and Store-Operated Ca²⁺ Entry Channels. *Journal of Biological Chemistry* **276**: 18888-18896, 2001.
(*- Joint First Author)
2. Venkatachalam, K., Ma, H-T., Ford, D.L., and Gill, D.L.: Expression of Functional Receptor-Coupled TRPC3 Channels in DT40 Triple InsP₃ Receptor-Knockout Cells. *Journal of Biological Chemistry* **276**: 33980-33985, 2001.
This article was featured in Faculty of 1000
3. Ma, H-T., Venkatachalam, K., Parys, J.B., and Gill D.L.: Modification of Store-operated Channel-coupling and InsP₃ Receptor-function by 2-Aminoethoxydiphenylborate in DT40 Lymphocytes. *Journal of Biological Chemistry* **277**: 6915-6922, 2002.
4. Venkatachalam, K., Zheng, F., and Gill, D.L.: Regulation of TRPC Channel Function by Diacylglycerol and Protein Kinase C. *Journal of Biological Chemistry* **278**: 29031-29040, 2003.
5. Ma, H-T., Venkatachalam, K.*, Rys-Sikora, K.E., He, L-P., Zheng, F., and Gill, D.L.: Modification of Phospholipase C- γ -Induced Ca²⁺ Signal-generation by 2-Amino-ethoxydiphenyl Borate. *Biochemical Journal* **376**: 667-676, 2003.
(*- Joint First Author)
6. Venkatachalam, K., Hofmann, T., and Montell, C.: Lysosomal Localization of TRPML3 Regulated by Interactions with TRPML2 and Mucopolipidosis-associated Protein TRPML1. *Journal of Biological Chemistry* **281**: 17517-17527, 2006.
7. Venkatachalam, K., Long, A., Elsaesser, R., Nikolaeva, D., Broadie, K., and Montell, C.: Motor deficit in a *Drosophila* model of mucopolipidosis type IV due to defective clearance of apoptotic cells. *Cell* **135**: 838-851, 2008.

8. Venkatachalam, K., Wasserman, D., Wang, X., Li, R., Mills, E., Elsaesser, R., Li, H-S., and Montell, C.: Dependence on a Retinophilin/Myosin Complex for Stability of PKC and INAD and Termination of Phototransduction. *Journal of Neuroscience* **30**: 11337-11345, 2010.
9. Wong, CO., Li, R., Montell, C., and Venkatachalam, K.: *Drosophila* TRPML is Required for TORC1 Activation *Current Biology* **22**: 1616-1621, 2012.
10. Feng, X., Huang, Y., Lu, Y., Xiong, J., Wong, CO., Yang, P., Xia, J., Chen, D., Du, G., Venkatachalam, K., Xia, X., and Zhu, M.X.: *Drosophila* TRPML forms PI(3,5)P2-activated cation channels in both endolysosomes and plasma membrane *Journal of Biological Chemistry* **289**: 4262-4272, 2014.
11. Wang, S., Tan, KL., Agosto, M.A., Xiong, B., Yamamoto, S., Sandoval, H., Jaiswal, M., Bayat, V., Zhang, K., Charng, WL., David, G., Duraine, L., Venkatachalam, K., Wensel, T.G., and Bellen, H.J.: The Retromer Complex is Required for Rhodopsin Recycling and its Loss Leads to Photoreceptor Degeneration *PLoS Biology* **12**: e1001847, 2014.
12. Wong, CO., Chen, K., Lin, YQ., Chao, Y., Duraine, L., Lu, Z., Yoon, WH., Sullivan, J.M., Broadhead, G.T., Sumner, C.J. Lloyd, T.E., Macleod, G.T., Bellen, H.J., and Venkatachalam, K.: A TRPV Channel in *Drosophila* Motor Neurons Regulates Presynaptic Resting Ca²⁺ Levels, Synapse Growth, and Synaptic Transmission *Neuron* **84**: 764-777, 2014.
 - **Cover Article**
 - **Accompanying this article was the following preview:**

Imler, E. and Zinsmaier, K.E.: TRPV1 Channels: Not So Inactive on the ER *Neuron* **84**: 659-661, 2014.
13. Tian, X., Gala, U., Zhang, Y., Shang, W., Jaiswal, S.N., Ronza, A.D., Jaiswal, M., Yamamoto, S., Sandoval, H., Duraine, L., Sardiello, M., Sillitoe, R.V., Venkatachalam, K., Fan, H., Bellen, H.J., and Tong, C.: A Voltage Gated Calcium Channel Regulates Lysosomal Fusion with Endosomes and Autophagosomes and is Required for Neuronal Homeostasis. *PLoS Biology* **13(3)**: e1002103, 2015.

14. Zhou, Y., Wong, CO., Cho, KJ., van der Hoeven, D., Liang, H., Thakur, D.P., Luo, J., Babic, M., Zinsmaier, K.E., Zhu, M.X., Hu, H., Venkatachalam, K., and Hancock, J.F.: Membrane Potential Modulates Plasma Membrane Phospholipid Dynamics and K-Ras Signaling. *Science*, **349(6250)**: 873-876, 2015.
- Accompanying this article was the following comment:
 Accardi, A.: Lipids Link Ion Channels and Cancer. *Science*, **349(6250)**: 789-790, 2015.
15. Wong, CO., Palmieri, M., Li, J., Akhmedov, D., Chao, Y., Broadhead, G.T., Zhu, M.X., Berdeaux, R., Collins, C.A., Sardiello, M., and Venkatachalam, K.: Diminished MTORC1-Dependent JNK-Activation Underlies the Neurodevelopmental Defects Associated with Lysosomal Dysfunction. *Cell Reports*, **12**: 2009-2020, 2015.
16. Wong, CO., Gregory, S., Hu, H., Chao, Y., Sepúlveda, V.E., He, Y., Li-Kroeger, D., Goldman, W.E., Bellen, H.J., and Venkatachalam, K.: Lysosomal Degradation Is Required for Sustained Phagocytosis of Bacteria by Macrophages. *Cell Host & Microbe*, **21**:719-730, 2017.
- Cover Article
- Accompanying this article were the following previews:
 Monahan, A.J., and Silverman, N.: Relish the Thought and Channel Your Chloride, for Bacterial Clearance Depends on It. *Cell Host & Microbe*, **21**:657-659, 2017.
 VanHook, A.M.: Macrophages Don't Take More Than They Can Eat. *Science Signaling*, **Vol. 10, Issue 484: eaao1183**, 2017.
17. Jung, J., Cho, K-J., Naji, A.K., Clemons, K.N., Wong, CO., Villanueva, M., Gregory, S., Karagas, N.E., Tan, L., Liang, H., Rousseau, M.A., Tomasevich, K.M., Sikora, A.G., Levental, I., van der Hoeven, D., Zhou, Y., Hancock, J.F. and Venkatachalam, K.: HRAS-driven cancer cells are vulnerable to TRPML1 inhibition. *EMBO Reports*, **e46685**, 2019.
- Accompanying this article was the following preview:
 Schwartz, D.M. and Muallem, S. Oncogenes calling on a lysosomal Ca²⁺ channel. *EMBO Reports*, **e7973**, 2019.
18. Wong, CO., and Venkatachalam, K.: Motor Neurons from ALS Patients with Mutations in *C9ORF72* and *SOD1* exhibit distinct transcriptional landscapes. *Human Molecular Genetics*, **28**:2799-2810, 2019.

19. Martelli, F., Zhongyuan, Z., Wang, J., Wong, CO., Karagas, N.E., Roessner, U., Rupasinghe, T., Venkatachalam, K., Perry, T., Bellen, H.J. and Batterham, P.: Low Doses of the Neonicotinoid Insecticide Imidacloprid Induce ROS Triggering Neurologic and Metabolic Impairments in *Drosophila*. *Proceedings of the National Academy of Sciences (USA)*, **117(41)**: 25840-25850, 2020.
20. Wong, CO.* , Karagas, N.E.* , Jung, J., Wang, Q., Rousseau, M. A., Chao, Y., Insolera, R., Soppina, P., Collins, C.A., Zhou, Y., Hancock, J.F., Zhu, M.X., and Venkatachalam, K.: Regulation of Longevity by Depolarization-Induced Activation of PLC β –IP $_3$ R Signaling in Neurons. *Proceedings of the National Academy of Sciences (USA)*. **118(16)**: e2004253118, 2021.
21. Jung, J., Liao, H., Liang, H., Hancock, J.F., Denicourt, C., and Venkatachalam, K.: p53 Mitigates the Effects of Oncogenic HRAS in Urothelial Cells via the Repression of *MCOLN1*. *iScience*. **24**:10271, 2021.
22. Karagas, N.E., Tan, K.L., Bellen, H.J., Venkatachalam, K.*, and Wong, CO.*: Loss of Activity-Induced Mitochondrial ATP Production Underlies the Synaptic Defects in a *Drosophila* model of ALS. *bioRxiv* **2021.12.14.472444**. <https://doi.org/10.1101/2021.12.14.472444>, 2021.
* **Corresponding authors.**
- This preprint has been favorably reviewed at *Journal of Neuroscience*, we anticipate resubmission by July 15th, 2022.
23. Martelli, F., Hernandez, N.H., Zuo, Z., Wang, J., Wong, CO., Karagas, N.E., Roessner, U., Rupasinghe, T., Robin, C., Venkatachalam, K., Perry, T., Batterham, P., and Bellen H.J.: Low Doses of the Organic Insecticide Spinosad Trigger Lysosomal Defects, Elevated ROS, Lipid Dysregulation, and Neurodegeneration in Flies. *eLife* **2022;11:e73812**. DOI: 10.7554/eLife.73812, 2022.

C. Invited Reviews:

1. Venkatachalam, K., van Rossum, D.B., Patterson, R.L., Ma, H-T., and Gill, D.L.: The Cellular and Molecular Basis of Store-Operated Calcium Entry. *Nature Cell Biology* **4**: E263-E272, 2002.
2. Spassova, M.A., Soboloff, J., He, L-P., Hewavitharana, T., Xu, W., Venkatachalam, K., van Rossum, D.B., Patterson, R.L., and Gill, D.L.: Calcium Entry Mediated by SOCs and TRP Channels: Variations and Enigma. *Biochimica et Biophysica Acta* **1742**: 9-20, 2004.

3. Soboloff, J., Spassova, M., Hewavitharana, T., He, L-P, Luncsford, P., Xu, W., Venkatachalam, K., van Rossum, D., Patterson, R.L., and Gill, D.L.: TRPC Channels: Integrators of Multiple Cellular Signals. *Handbook of Experimental Pharmacology* **179**: 575-591, 2007.
4. Kalra, D., Elsaesser, R., Gu, Y., and Venkatachalam, K.*: Transducin in Rod Photoreceptors - Translocated When Not Terminated. *Journal of Neuroscience* **27**: 6349-6351, 2007.
(*-Corresponding author)
5. Venkatachalam, K., and Montell, C.: TRP Channels. *Annual Reviews of Biochemistry* **76**: 387-417, 2007.
6. Venkatachalam, K.*, Wong, CO., and Montell, C.*: Feast or Famine: Role of TRPML in Preventing Cellular Amino Acid Starvation *Autophagy* **9**: 98-100, 2013.
(Cover Article)
(* , corresponding authors)
7. Venkatachalam, K.*, Luo, J., and Montell, C.*: Evolutionarily conserved, multitasking TRP channels—lessons from worms and flies *Handbook of Experimental Pharmacology, Edition on "Mammalian Transient Receptor Potential (TRP) Channels"*, **223**: 937-962, 2014.
(* , corresponding authors)
8. Venkatachalam, K.*, Wong, CO., and Zhu, M.X.*: The Role of TRPMLs in Endolysosomal Trafficking and Function *Cell Calcium*, **58**: 48-56, 2015.
(* , corresponding authors)
9. Kliosnky, D.J. et al.: Guidelines for the Use and Interpretation of Assays for Monitoring Autophagy (3rd edition). *Autophagy*, **12**:1-222, 2015.
10. Venkatachalam, K.: VGLUT soothes the sour synapse. *J. Physiol.*, **595**: 615-616, 2017.
11. Karagas, N.E., and Venkatachalam, K.: Roles for the endoplasmic reticulum in neuronal calcium homeostasis. *Cells*, **8(10)**: e1232, 2019.
12. Jung, K., and Venkatachalam, K.: TRPML1 and RAS-driven Cancers — Exploring a Link with Great Therapeutic Potential. *Channels (Austin)*, **13**: 374-381, 2019.
13. Jung, K., and Venkatachalam, K.: TRPing the Homeostatic Alarm — Melanoma Cells are Selectively Vulnerable to TRPML1 Deletion. *Cell Calcium* **84**: 10282, 2019.

14. Gripp, K.W., Schill, L., Schoyer, L., Stronach, B., Bennett, A.M., Blaser, S., Brown, A., Burdine, R., Burkitt-Wright, E., Castel, P., Darilek, S., Dias, A., Dyer, T., Ellis, M., Erickson, G., Gelb, B.D., Green, T., Gross, A., Ho, A., Holder, J.L. Jr., Inoue, S.I., Jelin, A.C., Kennedy, A., Klein, R., Kontaridis, M.I., Magoulas, P., McConnell, D.B., McCormick, F., Neel, B.G., Prada, C.E., Rauen, K.A., Roberts, A., Rodriguez-Viciano, P., Rosen, N., Rumbaugh, G., Sablina, A., Solman, M., Tartaglia, M., Thomas, A., Timmer, W.C., Venkatachalam, K., Walsh, K.S., Wolters, P.L., Yi, J.S., Zenker, M., and Ratner, N.: The sixth international RASopathies symposium: Precision medicine—From promise to practice. *American Journal of Medical Genetics A* **182(3)**: 597-606, 2020.
15. Venkatachalam, K.: Regulation of Aging and Longevity by Ion Channels and Transporters. *Cells*. **11**, **1180**. <https://doi.org/10.3390/cells11071180>, 2022

D. Book Chapters:

1. Venkatachalam, K., Zheng, F., and Gill D.L.: Control of TRPC and Store-Operated Channels by Protein Kinase C. *Novartis Foundation Symposium* **258**: 172-185; Discussion 185-188, 263-266, 2004.
2. Venkatachalam, K.* and Kiselyov, K.* TRPML1-Dependent Processes as Therapeutic Targets. *TRP Channels as Therapeutic targets* 469-482, 2015. (*, **corresponding authors**)
3. Karagas, N.E., Rousseau, M.A, and Venkatachalam, K.: TRPML Family of Endolysosomal Channels: Concepts and Methods. *Ion and Molecule Transport in Lysosomes (1st Edition)*. **Chapter 4**, 2021.

E. Other Professional Communications: Seminars (International seminars are bolded):

1. Johns Hopkins Postdoctoral Association Scientific Seminar Series, Baltimore, MD (2008). Host, Johns Hopkins Post-doctoral Association (JHPDA)
2. National Institute of Dental and Craniofacial Research/National Institutes of Health, Bethesda, MD (2009). Host, Dr. Indu S. Ambudkar
3. Departments of Neurology and Neurosurgery, Johns Hopkins Medical Institute, Baltimore, MD (2009). Host, Dr. Thomas Lloyd

4. National Institute of Neurological Diseases and Stroke/National Institutes of Health, Bethesda, MD (2009). Hosts, Drs. Howard Nash and Chi-Hon Lee
5. Young Investigator Award Day, Johns Hopkins University, Baltimore, MD (2009). Host, Dr. Randall Reed
- 6. XXXVI International Congress of Physiological Sciences (IUPS), Kyoto, Japan (2009). Host, Dr. Shmuell Muallem**
7. Department of Physiology, Case Western Reserve University, Cleveland, OH (2009). Host, Dr. Walter Boron
8. Department of Biology, University of Toronto, Toronto, Canada (2009). Host, Dr. Greg Vanlerberghe
9. Department of Microbiology and Molecular Genetics, Duke University School of Medicine, Durham, NC (2009). Host, Dr. Hiroaki Matsunami
10. Department of Anesthesiology, Washington University School of Medicine, St. Louis, MI (2009). Host, Dr. Michael Crowder
11. Annual Research Retreat Day, University of Texas Health Science Center at Houston, Houston, TX (2010). Host, Dr. John Byrne
12. Department of Biochemistry and Molecular Biology, University of Texas Health Science Center at Houston, Houston, TX (2011). Host, Dr. Eric Wagner
13. Department of Biology and Biochemistry, University of Houston, Houston, TX (2011). Host, Dr. Gregg Roman
14. Department of Neuroscience and Cell Biology, UTMB-Galveston, Galveston, TX (2012). Host, Dr. Darren Boehning
15. Department of Pediatrics, University of Texas Health Science Center at Houston, Houston, TX (2012). Host, Dr. Karen Posey
16. Mucopolipidosis IV Foundation, Agenda Setting Conference, Tarrytown, NY (2013). Host, Dr. Rebecca Oberman and the ML4 Foundation
17. Institute of Molecular Medicine, University of Texas Health Science Center at Houston, Houston, TX (2013). Host, Dr. Sheng Zhang
18. Mucopolipidosis IV Foundation, Annual Conference, Atlanta, GA (2014). Host, Dr. Rebecca Oberman and the ML4 Foundation

19. Department of Genetics, MD Anderson Cancer Center, Houston, TX (2014). Host, Dr. Swathi Arur
- 20. Garvan Institute, Sydney, Australia (2014). Host, Dr. Greg Nealy**
- 21. Gordon Conference on Lysosomal Storage Diseases, Galveston, TX (2015). Host, Dr. Steven Walkley**
22. The Scripps Research Institute, Jupiter, FL (2015). Hosts, Dr. Gregory Macleod and Dr. William Ja
23. University of California Santa Barbara (UCSB), Santa Barbara, CA (2015). Host, Dr. Craig Montell
- 24. VIB Center for the Biology of Diseases, University of Leuven Department of Human Genetics, Leuven, Belgium (2015). Host, Dr. Patrik Verkstreken**
- 25. 3rd Annual Leuven TRP Symposium, Leuven, Belgium (2015). Host, Dr. Thomas Voets**
26. Center for Human Genetic Research, Massachusetts General Hospital and Harvard Medical School (HMS), Boston, MA (2015). Host, Dr. Susan Slaugenhaupt
27. Department of Biological Sciences, Kenneth P. Dietrich School of Arts and Sciences, University of Pittsburgh, Pittsburgh, PA (2015). Host, Dr. Kirill Kiselyov
28. Department of Human and Molecular Genetics, Baylor College of Medicine, Houston, TX (2016). Host, Dr. Marco Sardiello
29. Mucopolidosis IV Foundation Conference, Atlanta, GA (2016). Host, Dr. Rebecca Oberman and the ML4 Foundation
30. National Heart Lung and Blood Institute, National Institutes of Health, Bethesda, MD (2016). Host, Dr. Hong Xu
- 31. International Symposium on Regulation of Cell Function by Transient Receptor Potential Channels, Herrsching (near Munich), Germany (2016). Host, Dr. Viet Flockerzi**
32. Department of Molecular, Cellular, and Developmental Biology, University of Michigan, Ann Arbor, MI (2016). Host, Dr. Haoxing Xu

33. Department of Neuroscience and the Mitchell Neurodegeneration Center, University of Texas Medical Branch (UTMB), Galveston, TX (2017). Host, Dr. Yogesh Wairkar
34. BioSciences at Rice, Rice University, Houston, TX (2017). Host, Dr. Kathleen Beckingham
35. Mucopolidosis IV Foundation Conference, Atlanta, GA (2018). Host, Dr. Rebecca Oberman and the ML4 Foundation
36. 7th annual “Metabolism in Cancer” symposium, The University of Texas, MD Anderson Cancer Center (2018). Host, Dr. Pratip Bhattacharya
37. Huffington Center on Aging, Baylor College of Medicine (2019). Host, Dr. Melanie Samuel
38. Alzheimer’s Disease Research Seminars, Texas Tech University Health Sciences Center (2021, *Virtual*). Host, Dr. Hemachandra Reddy
- 39. ICOB and NPAS Joint Webinar, Academia Sinica, Taipei, Taiwan (2021, *Virtual*). Hosts, Drs. Chi-Kuang Yao and Hwei-Jan Hsu**
40. Department of Pharmacology and Chemical Biology, Emory University School of Medicine (2021, *Virtual*). Host, Dr. Zixu Mao
41. Distinguished Lecture at the Research Forum of the Oklahoma Medical Research Foundation (OMRF) (2022, *Virtual*). Hosts, Drs. Wan-Hee Yoon and Rodger McEver
42. Burke Neurological Institute, Weill Cornell Medicine (2022, *Virtual*). Host, Dr. Rajiv Ratan
43. Department of Pharmacology and Chemical Biology, University of Pittsburgh (2022, *Virtual*). Host, Dr. Mohamed Trebak
44. Department of Cellular and Integrative Physiology, UT Health San Antonio (2022). Host, Dr. Manzoor A. Bhat