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Brief bio sketch

Ravi Manjithaya received his PhD degree studying Post-transcriptional Gene Regulation from Indian Institute of Science (Advisor: Prof. Rajan Dighe). He did his postdoctoral training in the autophagy related pathways at the University of California, San Diego (Mentor: Prof. Suresh Subramani) before joining JNCASR in 2011. He was a Wellcome Trust-DBT Intermediate fellow (2011-2016). His lab is interested in understanding the mechanisms that govern autophagy and related pathways in health and disease. He was a Wellcome Trust-DBT Intermediate fellow (2011-2016). He has received the CDRI Award 2020 for Excellence in Drug Research in Life Sciences category and S Ramachandran-National Bioscience Award for Career Development by the Department of Biotechnology, Government of India.

Education

2017 Jun – present	Associate Professor, MBGU, JNCASR
2016-present	Associate Faculty, Neuroscience Unit, JNCASR
2011 Jun – May 2017	Faculty Fellow (Assistant Professor), Molecular Biology and Genetics Unit (MBGU), Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR), Bangalore, India
2009 Dec-May2011	Assistant Specialist I, Suresh Subramani lab, University of California, San Diego
2004-2009	Post-doctoral research scholar, Subramani lab, University of California, San Diego, USA
1998-2004	Ph.D. in Molecular Biology Indian Institute of Science (I.I.Sc.), India
1996-1998	M.Sc. in Microbiology University of Pune, India

Publications

Research publications

2022-

1. Anushka Chakravorty, Ankit Sharma, Sheeba Vasu* and Ravi Manjithaya*. Glutamatergic synapse dysfunction in *Drosophila* neuromuscular junctions can be rescued by proteostasis modulation. **Front Mol Neurosci**. Accepted April 2022.
2. Jetto CT, Nambiar A, Manjithaya R*. Mitophagy and Neurodegeneration: Between the Knowns and the Unknowns. **Front Cell Dev Biol**. 2022 Mar 22;10:837337. doi: 10.3389/fcell.2022.837337.
3. Verma V, Kumar MJV, Sharma K, Rajaram S, Muddashetty R, Manjithaya R, Behnisch T, Clement JP*. Pharmacological intervention in young adolescents rescues synaptic physiology and behavioural deficits in Syngap1+/- mice. **Exp Brain Res**. 2022 Jan;240(1):289-309. doi: 10.1007/s00221-021-06254-x.

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4. Barve G, Manjithaya R. Cross-talk between autophagy and sporulation in *Saccharomyces cerevisiae*. **Yeast**. 2021 Jul;38(7):401-413. doi: 10.1002/yea.3556.

5. Suresh SN, Jayaprakash Rao M, Manjithaya R*. XCT 790 is a pharmacological aggrephagy inducer in a yeast model of proteotoxicity. **Cell Biol Int.** 2021 Mar;45(3):654-661. doi: 10.1002/cbin.11518.
6. Klionsky DJ, *et al.* Guidelines for the use and interpretation of assays for monitoring autophagy (4th edition). **Autophagy.** 2021 Jan;17(1):1-382.
7. Kumar MJV, Shah D, Giridharan M, Yadav N, Manjithaya R*, Clement JP*. Spatiotemporal analysis of soluble aggregates and autophagy markers in the R6/2 mouse model. **Sci Rep.** 2021 Jan 8;11(1):96.

2020

8. Chalapathi D, Padmanabhan S, Manjithaya R*, Narayana C*. Surface-Enhanced Raman Spectroscopy as a Tool for Distinguishing Extracellular Vesicles under Autophagic Conditions: A Marker for Disease Diagnostics. **J Phys Chem B.** 2020 Dec 3;124(48):10952-10960.
9. Mahendran TS, Suresh SN, Garimella L, Manjithaya R*. Soluble 4R0N Tau Abrogates Endocytic Vesicular Dynamics. **Front Aging Neurosci.** 2020 Nov 5;12:537712.
10. Singh A, Karmakar S, Abraham IM, Rambabu D, Dave D, Manjithaya R, Maji TK. Unraveling the Effect on Luminescent Properties by Postsynthetic Covalent and Noncovalent Grafting of GFP Chromophore Analogues in Nanoscale MOF-808. **Inorg Chem.** 2020 Jun 15;59(12):8251-8258.
11. Ranjitha HB, Veena Ammanathan, Neha Guleria, Madhusudan Hosamani, Sreenivasa BP, Dhanesh VV, Rashmi Santhoshkumar, B K Chandrasekhar Sagar, BP Mishra, RajKumar Singh, Aniket Sanyal, Ravi Manjithaya, and Suresh H Basagoudanavar. Foot-and-mouth disease virus induces PERK mediated autophagy to suppress antiviral interferon response. **J Cell Sci.** 2020 Jul 9;134(5):jcs240622.
12. Sarkar P, Samaddar S, Ammanathan V, Yarlagadda V, Ghosh C, Shukla M, Kaul G, Manjithaya R, Chopra S, Haldar J. Vancomycin Derivative Inactivates Carbapenem-Resistant *Acinetobacter baumannii* and Induces Autophagy. **ACS Chem Biol.** 2020 Apr 17;15(4):884-889.
13. Ammanathan V, Vats S, Abraham IM, Manjithaya R*. Xenophagy in cancer. **Semin Cancer Biol.** 2020 Feb 29:S1044-579X(20)30048-1.
14. Suresh SN, Chakravorty A, Giridharan M, Garimella L, Manjithaya R*. Pharmacological Tools to Modulate Autophagy in Neurodegenerative Diseases. **J Mol Biol.** 2020 Apr 3;432(8):2822-2842.
15. Agrawal P, Manjithaya R*, Surolia N*. Autophagy-related protein PfATG18 participates in food vacuole dynamics and autophagy-like pathway in *Plasmodium falciparum*. **Mol Microbiol.** 2020 Apr;113(4):766-782.

2019

16. Chakravorty A, Jetto CT, Manjithaya R*. Dysfunctional Mitochondria and Mitophagy as Drivers of Alzheimer's Disease Pathogenesis. **Front Aging Neurosci.** 2019 Nov 20;11:311.
17. Das Saha N, Sasmal R, Meethal SK, Vats S, Gopinathan PV, Jash O, Manjithaya R, Gagey-Eilstein N, Agasti SS. Multichannel DNA sensor-array fingerprints cell states and identifies pharmacological effectors of catabolic processes. **ACS Sens.** 2019 Dec 27;4(12):3124-3132.
18. Ammanathan V, Mishra P, Chavalmane A, Muthuswamy S, Jadhav V, Siddamadappa C, Manjithaya R*. Restriction of intracellular *Salmonella* replication by restoring TFEB mediated xenophagy. **Autophagy** 2019 Nov 19:1-14. doi: 10.1080/15548627.2019.1689770.
19. SN Suresh, Pandurangi J, Murumalla R, Dj V, Garimella L, Acharya A, Rai S, Paul A, Yarreiphang H, Pillai MS, Giridharan M, Clement JP, Alladi PA, Saiyed T, Manjithaya R*. Small molecule modulator of aggrephagy regulates neuroinflammation to curb pathogenesis of neurodegeneration. **EBioMedicine.** 2019 Nov 11. pii: S2352-3964(19)30706-6. doi: 10.1016/j.ebiom.2019.10.036. Commentary: A new avenue for treating Parkinson's disease targeted at aggrephagy modulation and neuroinflammation:

20. Suresh SN, Manjithaya R*. A small molecule autophagy inducer exerts cytoprotection against alpha-synuclein toxicity. **European Journal of Pharmacology** 2019 Nov 5;862:172635. doi: 10.1016/j.ejphar.2019.172635.
21. Vats S, Manjithaya R*. A reversible autophagy inhibitor blocks autophagosome-lysosome fusion by preventing Stx17 loading onto autophagosomes. **Mol Biol Cell**. 2019 Aug 1;30(17):2283-2295.
22. Sikder S, Kumari S, Mustafi P, Ramdas N, Padhi S, Saha A, Bhaduri U, Banerjee B, Manjithaya R, Kundu TK*. Nonhistone human chromatin protein PC4 is critical for genomic integrity and negatively regulates autophagy. **FEBS J**. 2019 Jun 6. doi:10.1111/febs.14952.
23. Singh S, Kumari R, Chinchwadkar S, Aher A, Matheshwaran S, Manjithaya R*. Exocyst Subcomplex Functions in Autophagosome Biogenesis by Regulating Atg9 Trafficking. **J Mol Biol**. 2019 Jul 12;431(15):2821-2834.

2018

24. Padmanabhan S, Biswal MR, Manjithaya R, Prakash MK*. Exploring the context of diacidic motif DE as a signal for unconventional protein secretion in eukaryotic proteins. **Wellcome Open Res**. 2018 Nov 19;3:148.
25. Shiny Joy, Lavanya Thirunavukkarasu, Palak Agrawal, Anjali Singh, BKC Sagar, **Ravi Manjithaya***, Namita Surolia*. Basal and starvation-induced autophagy mediates parasite survival during intraerythrocytic stages of *Plasmodium falciparum*. **Cell Death Discov**. 2018 Oct 3;5:43.
26. Gaurav Barve, Priyadarshini Sanyal and **Ravi Manjithaya***. Septin localization and function during autophagy. **Curr Genet** 2018 Oct;64(5):1037-1041.
27. S. N. Suresh, Aravinda K. Chavalmame, Malini Pillai, Veena Ammanathan, Vidyadhara DJ, Haorei Yarreiphang, Shashank Rai, Abhik Paul, James P Clement, Phalguni Anand Alladi and **Ravi Manjithaya***. Modulation of Autophagy by a Small Molecule Inverse Agonist of ERR α Is Neuroprotective. **Front. Mol. Neurosci**. 2018 Apr 9;11:109.
28. Gaurav Barve, Shreyas Sridhar, Amol Aher, Mayurbhai H. Sahani, Sarika Chinchwadkar, Sunaina Singh, K. N. Lakshmeesha, Michael A. McMurray, **Ravi Manjithaya***. Septins are involved at the early stages of macroautophagy in *S. cerevisiae*. **J Cell Sci** 2018 Feb 22;131(4).

2017

29. S. N. Suresh, Aravinda K. Chavalmame, Vidyadhara DJ, Haorei Yarreiphang, Shashank Rai, Abhik Paul, James P Clement, Phalguni Anand Alladi and **Ravi Manjithaya***. A novel autophagy modulator 6-Bio ameliorates SNCA/ α -synuclein toxicity. **Autophagy** 2017 Jul 3;13(7):1221-1234.
30. Piyush Mishra, Adrian N. Dauphinee, Carl Ward, Sovan Sarkar, Arunika H.L.A.N. Gunawardena, and **Ravi Manjithaya***. Discovery of pan autophagy inhibitors through a highthroughput screen highlights macroautophagy as an evolutionarily conserved process across three eukaryotic kingdoms. **Autophagy** 2017 Sep 2;13(9):1556-1572.
31. Piyush Mishra, Shashank Rai and **Ravi Manjithaya***. A dual luciferase based novel highthroughput assay to monitor autophagy in real time in yeast *S. cerevisiae*. **Biochemistry and Biophysics Reports** 2017 Jul 20;11:138-146.
32. Chelur K. Rasmi, Sreedevi Padmanabhan, Kalyanee Shirlekar, Kanhirodan Rajan, **Manjithaya R**, Varsha Singh, and Partha Pratim Mondal. Integrated light-sheet imaging and flow-based enquiry (iLIFE) system for 3D *in-vivo* imaging of multicellular organism. **Applied Physics Letters** 2017 111, 243702.

Before 2017

33. Rajasekhar K, Suresh SN, **Manjithaya R***, Govindaraju T*. Rationally designed peptidomimetic modulators of $\alpha\beta$ toxicity in Alzheimer's disease. **Sci Rep**. 2015 Jan 30;5:8139.
34. Dilipkumar S, **Manjithaya R** and Mondal PP. Multispectral Bayesian reconstruction technique for real-time two color fluorescence microscopy. **RSC Adv**. 2015 Jan 5, 13175-13183.
35. Rajasekhar K, Narayanaswamy N, Mishra P, Suresh SN, **Manjithaya R** and Govindaraju T. Synthesis of Hybrid Cyclic Peptoids and Identification of Autophagy Enhancer. **ChemPlusChem** 2014 79, 25–30.
36. **Manjithaya R**, Jain S, Farré JC, Subramani S. Involvement of a yeast MAP kinase cascade in pexophagy, but not in non-selective or other selective autophagy pathways. **J Cell Biol**. 2010 Apr 19;189(2):303-10.
This paper was highlighted/commented upon:
Deciding what to eat. *J Cell Biol*. 2010 Apr 19;189(2):19., **and**, Faculty of 1000 Biology: evaluations for Manjithaya R *et al* <http://f1000biology.com/article/id/3087957/evaluation>
37. **Manjithaya R**, Anjard C, Loomis W, Subramani S. Unconventional secretion of *Pichia pastoris* Acb1 is dependent on GRASP protein, peroxisomal functions, and autophagosome formation. **J Cell Biol**. 2010 Feb 22;188(4):537-46. Epub 2010 Feb 15.
This paper was highlighted/commented upon:
Unconventional secretion by autophagosome exocytosis. Pfeffer SR. *J Cell Biol*. 2010 Feb 22;188(4):451-2., **and**, Membrane trafficking: Mapping a new route. Skinner MA. *Nat Rev Mol Cell Biol*. 2010 Mar;11, 234-235., **and**, Protein Secretion: Unconventional Exit by Exophagy. Abrahamsen H, Stenmark H. *Curr Biol*. 2010 May 11;20(9):R415.
38. Farré JC, Mathewson RD, **Manjithaya R**, Subramani S. Roles of *Pichia pastoris* Uvrag in vacuolar protein sorting and the phosphatidylinositol 3-kinase complex in phagophore elongation in autophagy pathways. **Autophagy**. 2010 Jan;6(1):86-99.
39. Farré JC, **Manjithaya R**, Mathewson RD, Subramani S. PpAtg30 tags peroxisomes for turnover by selective autophagy. **Dev Cell**. 2008 Mar;14(3):365-76.
40. Nazarko TY, Polupanov AS, **Manjithaya RR**, Subramani S, Sibirny AA. The requirement of sterol glucoside for pexophagy in yeast is dependent on the species and nature of peroxisome inducers. **Mol Biol Cell**. 2007 Jan;18(1):106-18.
41. **Manjithaya RR**, Dighe RR. The 3' untranslated region of bovine follicle-stimulating hormone beta messenger RNA downregulates reporter expression: involvement of AU-rich elements and transactors. **Biol Reprod**. 2004 Oct;71(4):1158-66.

Reviews

1. Barve G, Manjithaya R*. Cross-talk between autophagy and sporulation in *Saccharomyces cerevisiae*. *Yeast*. 2021 Feb 19. doi: 10.1002/yea.3556.
2. Padmanabhan S and Manjithaya R*. Facets of autophagy based unconventional protein secretion—The road less travelled. **Front in Mol. Biosci**. 2020 Dec 9;7:586483.
3. Ammanathan V, Vats S, Abraham IM, Manjithaya R*. Xenophagy in cancer. **Semin Cancer Biol**. 2020 Feb 29. pii: S1044-579X(20)30048-1.
4. Suresh SN, Chakravorty A, Giridharan M, Garimella L, Manjithaya R*. Pharmacological Tools to Modulate Autophagy in Neurodegenerative Diseases. **J Mol Biol**. 2020 Apr 3;432(8):2822-2842.
5. Chakravorty A, Jetto CT, Manjithaya R*. Dysfunctional Mitochondria and Mitophagy as Drivers of Alzheimer's Disease Pathogenesis. **Front Aging Neurosci**. 2019 Nov 20;11:311.

6. Piyush Mishra, Veena Ammanathan and **Manjithaya R***. Chemical biology strategies to study autophagy. **Frontiers in Cell and Developmental Biology**, section **Membrane Traffic**. 2018 Nov 27;6:160. doi: 10.3389/fcell.2018.00160. eCollection 2018. *Invited review*
7. Suresh S N, Vijaya Verma, Shruthi Sateesh, James P Clement and **Manjithaya R***. Neurodegenerative diseases: model organisms, pathology and autophagy. **Journal of Genetics**. 2018 Jul;97(3):679-701. *Invited review*
8. Shikha Satendra Singh, Somya Vats, Amelia Yi-Qian Chia, Tuan Zea Tan, Shuo Deng, Mei Shan Ong, Frank Arfuso, Celestial T. Yap, Boon Cher Goh, Gautam Sethi, Ruby Yun-Ju Huang, Han Ming Shen, **Manjithaya R*** and Alan Prem Kumar*. Dual role of autophagy in hallmarks of cancer. **Oncogene**, 2017 Mar;37(9):1142-1158. doi: 10.1038/s41388-017-0046-6.
9. Sarika Chinchwadkar, Sreedevi Padmanabhan, Piyush Mishra, Sunaina Singh, Suresh S N, Somya Vats, Gaurav Barve, Veena A and **Ravi Manjithaya***. Multifaceted housekeeping functions of autophagy. **Journal of Indian Institute of Science**. 2017 Mar;97(1):79-94. doi: 10.1007/s41745-016-0015-z. *Invited review*
10. Rai S and **Manjithaya R***. Fluorescence microscopy: A tool to study autophagy. **AIP Advances** 2015, 5, 084804. *Invited review*
11. **Manjithaya R**, Subramani S. Autophagy: a new role in unconventional protein secretion. **Trends Cell Biol** 2011 Feb;21(2):67-73. *Invited review*
12. **Manjithaya R**, Subramani S. Role of autophagy in unconventional protein secretion. **Autophagy** 2010 Jul 1;6(5):650-1. *Invited review*
13. **Manjithaya R**, Nazarko TY, Farré JC, Subramani S. Molecular mechanism and physiological role of pexophagy. **FEBS Lett**. 2010 Apr 2;584(7):1367-73. *Invited review*

Book Chapter

Singh, S and **Manjithaya, R***. (2013). Role of the Golgi Complex and Autophagosome Biogenesis in Unconventional Protein Secretion. In: Hayat, MA. Autophagy: Autophagy: Cancer, Other Pathologies, Inflammation, Immunity, Infection, and Aging. Elsevier. 105-114.

Review Editor for the journal Frontiers in Nanobiotechnology.

Awards and membership

S Ramachandran-National Bioscience Award for Career Development from the Department of Biotechnology, Govt. of India 2020-21
 CDRI Awards 2020 for Excellence in Drug Research in Life Sciences category awarded jointly to Dr. Ravi Manjithaya, JNCASR.
 Sir C.V. Raman Young Scientist State Award in the field of Life Sciences for the year 2019
 Wellcome Trust-DBT India Alliance Intermediate Fellow (2011-2016)
 American Society of Cell Biology member
 Elected member of Guha Research Conference