

Santosh Chauhan, PhD**Personal details**

Phone: 91-7077702598 (Mobile)

E.mails: schauhan@ils.res.in

chauhan2010santosh@gmail.com.

Website: <https://www.autophagylab.com/>**Present Affiliation**

Senior Scientist- E

Institute of Life Sciences,

(An autonomous Institute of Department of Biotechnology, Govt. of India)

Bhubaneswar, Odisha, India.

Education and Research

Nov, 2012 - Aug, 2014	Postdoctoral fellow	University of New Mexico, US
Nov, 2009 - Nov, 2012	Postdoctoral fellow	MD Anderson Cancer Center, US
Feb, 2009 - Oct, 2009	Postdoctoral fellow	AIIMS, New Delhi, India
Feb, 2004 - Feb, 2009	PhD	AIIMS, New Delhi, India
Aug, 2003 - Jan, 2004	Junior Research Fellow	AIIMS, New Delhi, India
July, 2001 - July 2003	Master in Science	GNDU, Amritsar, India
1997 - 2000	Bachelor in Science	Rajasthan University, India

Professional positions

Sept, 2014 -August, 2015: Assistant Professor (Research-track) at University of New Mexico, US.

Sept, 2015 –December 2018: Scientist-D (Assistant Professor), Institute of Life Sciences, Bhubaneswar, Odisha.

January, 2019 –Present: Scientist-E (Associate Professor), Institute of Life Sciences, Bhubaneswar, Odisha.

Academic honors and Awards/scholarships/fellowships

1. Elected Fellow of **National Academy of Sciences (NASI)**-2020
2. S Ramachandran-**National Bioscience Award for Career Development**- DBT, India-2019
3. **EMBO Global Investigator Fellowship**-EMBO, Germany- 2019-2023
4. Runner up- **Merck young Scientist Award**-2019
5. Selected for **Wellcome-DBT intermediate** fellowship-2015
6. Selected for **Ramanujan** Fellowship-2015
7. Selected for **Ramalingaswami** Fellowship-2015
8. Associate **Faculty Member for F1000Prime**, 2014-present
9. Associate of Indian Academy of Sciences, 09-2013.

10. Research Associateship CSIR, New Delhi. India, 2009.
11. Junior and Senior Research Fellowship, CSIR, India 2004-2009.
12. Qualified Graduate Aptitude Test in Engineering-2003, India.
13. Qualified national level combined biotechnology test, 2001 for M.Sc (Biotechnology).
14. Topper in M.Sc (Biotechnology), GNDU, Amritsar.

Publications

2021

1. Nath P, Chauhan NR, Jena KK, Datey A, Kumar ND, Mehto S, De S, Nayak TK, Priyadarsini S, Rout K, Bal R, Murmu KC, Kalia M, Patnaik S, Prasad P, Reggiori F, **Chattopadhyay S*, Chauhan S***. *Inhibition of IRGM establishes a robust antiviral immune state to restrict pathogenic viruses*. **EMBO Rep.** 2021 Sep 1:e52948. doi: 10.15252/embr.202152948. * **Corresponding author**
2. Kolapalli SP, Sahu R, Chauhan NR, Jena KK, Mehto S, Das SK, Jain A, Rout M, Dash R, Swain RK, Lee DY, Rusten TE, **Chauhan S***, Chauhan S*. *RNA binding RING E3-ligase DZIP3/hRUL138 is a novel driver of cell cycle and cancer progression by employing a unique mechanism to stabilize Cyclin D1*. **Cancer Research**, 2021 Jan 15;81(2):315-331. * **Corresponding author. Cover Page Article**
3. Klionsky et al., Guidelines for the use and interpretation of assays for monitoring autophagy. *Autophagy*. 2021 Jan;17(1):1-382.

2020

4. Jena KK, Mehto S, Nath P, Chauhan NR, Sahu R, Dhar K, Das SK, Kolapalli SP, Murmu KC, Jain A, Krishna S, Sahoo BS, Chattopadhyay S, Rusten TE, Prasad P, Chauhan S, **Chauhan S***. *Autoimmunity gene IRGM suppresses cGAS-STING and RIG-I-MAVS signaling to control interferon response*. **EMBO Rep.** 2020 Jul 27:e50051.* **Corresponding author**
5. Nath P, Jena KK, Mehto S, Chauhan NR, Sahu R, Dhar K, Srinivas K, Chauhan S, **Chauhan S***. *IRGM Links Autoimmunity to Autophagy*. **Autophagy**. 2021 Feb;17(2):578-580. ***Corresponding author. Cover Page Article**

2019

6. Mehto S, Jena KK, Nath P, Chauhan S, Kolapalli SP, Das SK, Sahoo PK, Jain A, Taylor GA, **Chauhan S***. *The Crohn's disease risk factor IRGM limits NLRP3 inflammasome activation by impeding its assembly and by mediating its selective autophagy*. **Molecular Cell**. 2019 Feb 7;73(3):429-445.e7. ***Corresponding author**

Preview: Nabar NR, Kehrl JH. Inflammasome Inhibition Links IRGM to Innate Immunity. Mol Cell. 2019 Feb 7;73(3):391-392.

7. Mehto S, Chauhan S, Jena KK, Chauhan NR, Nath P, Sahu R, Dhar K, Das SK, **Chauhan S***. *IRGM restrains NLRP3 inflammasome activation by mediating its SQSTM1/p62-dependent selective autophagy. Autophagy.* 2019 Jun 20:1-3. ***Corresponding author**
8. Jena KK, Mehto S, Kolapalli SP, Nath P, Sahu R, Chauhan NR, Sahoo PK, Dhar K, Das SK, Chauhan S, **Chauhan S***. *TRIM16 governs the biogenesis and disposal of stress-induced protein aggregates to evade cytotoxicity: implication for neurodegeneration and cancer. Autophagy.* 2019 May;15(5):924-926. ***Corresponding author**
9. Jena KK, Mehto S, Kolapalli SP, Nath P, Chauhan S, **Chauhan S***. *TRIM16 employs NRF2, ubiquitin system and aggrephagy for safe disposal of stress-induced misfolded proteins. Cell Stress.* 2018 Nov 16;2(12):365-367. ***Corresponding author**
10. Saha S, Murmu KC, Biswas M, Chakraborty S, Basu J, Madhulika S, Kolapalli SP, **Chauhan S**, Sengupta A, Prasad P. *Transcriptomic Analysis Identifies RNA Binding Proteins as Putative Regulators of Myelopoiesis and Leukemia. Front Oncol.* 2019 Aug 6;9:692.

2018

11. Jena KK, Kolapalli SP, Mehto S, Nath P, Das B, Sahoo PK, Ahad A, Syed GH, Raghav SK, Senapati S, Chauhan S, **Chauhan S***. *TRIM16 controls assembly and degradation of protein aggregates by modulating the p62-NRF2 axis and autophagy. EMBO J.* 2018 Sep 14;37(18). ***Corresponding Author**
12. Jena KK, Kolapalli SP, Mehto S, Chauhan S, Chauhan S. *TRIM16 controls turnover of protein aggregates by modulating NRF2, ubiquitin system, and autophagy: implication for tumorigenesis. Mol Cell Oncol.* 2018 Oct 22;5(6):e1532251. ***Corresponding Author**

2017

13. Kumar S, **Chauhan S**, Jain A, Ponpuak M, Choi SW, Mudd M, Peters R, Mandell MA, Johansen T, Deretic V. *Galectins and TRIMs directly interact and orchestrate autophagic response to endomembrane damage. Autophagy.* 2017 Jun 3;13(6):1086-1087.

2016

14. **Chauhan S**, Kumar S, Jain A, Ponpuak M, Mudd MH, Kimura T, Choi SW, Peters R, Mandell M, Bruun JA, Johansen T, Deretic V (2016) *TRIMs and Galectins*

*Globally Cooperate and TRIM16 and Galectin-3 Co-direct Autophagy in Endomembrane Damage Homeostasis. **Developmental Cell** 39: 13-27.*

15. Klionsky DJ et al.,. *Guidelines for the use and interpretation of assays for monitoring autophagy (3rd edition).* **Autophagy** Jan 2;12(1):1-222, 2016

2015

16. **Chauhan S**, Ahmed Z, Bradfute SB, Arko-Mensah J, Mandell MA, Won Choi S, Kimura T, Blanchet F, Waller A, Mudd MH, Jiang S, Sklar L, Timmins GS, Maphis N, Bhaskar K, Piguet V, Deretic V (2015) *Pharmaceutical screen identifies novel target processes for activation of autophagy with a broad translational potential.* **Nature Communications** Oct 27 6: 8620.
17. **Chauhan, S.***, Mandell, M. and Deretic, V.*. *IRGM governs the core autophagy machinery to conduct antimicrobial defense.* Volume 58, Issue 3, p507–521, 7 May, **Molecular Cell**. * **Corresponding author.**
18. **Chauhan S**, Mandell MA, Deretic V. *Mechanism of action of the tuberculosis and Crohn disease risk factor IRGM in autophagy.* **Autophagy**. 2015 Aug 27:0.
19. Ponpuak M, Mandell MA, Kimura T, **Chauhan S**, Cleyrat C, Deretic V. *Secretory autophagy.* **Curr Opin Cell Biol**. 2015 May 16;35:106-116.
20. Deretic V, Kimura T, Timmins G, Moseley P, **Chauhan S**, Mandell M. *Immunological manifestations of autophagy.* **J Clin Invest**. 2015 Jan; 125(1):75-84.

2014

21. Mandell MA, Jain A, Arko-Mensah J, **Chauhan S**, Kimura T, Dinkins C, Silvestri G, Münch J, Kirchhoff F, Simonsen A, Wei Y, Levine B, Johansen T, Deretic V. *TRIM proteins regulate autophagy and can target autophagic substrates by direct recognition.* **Developmental Cell**. 2014 Aug 25; 30(4):394-409.
22. Dupont N, **Chauhan S**, Arko-Mensah J, Castillo EF, Masedunskas A, Weigert R, Robenek H, Proikas-Cezanne T, Deretic V. *Neutral lipid stores and lipase PNPLA5 contribute to autophagosome biogenesis.* **Current Biology**. 2014 Mar 17;24 (6):609-20.

2013

23. **Chauhan, S.**, Goodwin, J.G., Chauhan, S., Manyam, G., Wang, J., Kamat, A.M., and Boyd, D.D. (2013). *ZKSCAN3 Is a Master Transcriptional Repressor of Autophagy.* **Molecular Cell**. Apr 11;50(1):16-28.
- Highlighted in Cancer Discovery (AACR) journal, February 28, 2013; doi:10.1158/2159-8290.CD-RW2013-046.*
- Recommended by Faculty of 1000 (<http://f1000.com/prime/717980675>)*

2012

24. Bradfute SB, Castillo EF, Arko-Mensah J, **Chauhan S**, Jiang S, Mandell M, Deretic V. *Autophagy as an immune effector against tuberculosis*. **Curr Opin Microbiol**. 2013 Jun 18. pii: S1369-5274(13)00070-2.
25. **Chauhan, S.** and Boyd DD. *Regulation of u-PAR gene expression by H2A.Z is modulated by the MEK-ERK/AP-1 pathway*. **Nucleic Acids Research**. 2012 Jan; 40 (2):600-13.
26. **Chauhan, S.**, Sharma, D., Singh, A., Surolia, A. and Tyagi, J.S. *Comprehensive insights into Mycobacterium tuberculosis DevR (DosR) regulon activation switch*. **Nucleic Acids Research**. 2011 Sep 1;39(17):7400-14.
27. **Chauhan, S** and Tyagi, J.S. (2011) *Analysis of transcription at the oriC locus in Mycobacterium tuberculosis*. **Microbiol Res**. 2011 Sep 20;166(6):508-14.
28. Avila H, Wang H, **Chauhan S**, Hartig S, Boyd DD. *Accelerated urokinase-receptor protein turnover triggered by interference with the addition of the glycolipid anchor*. **Biochem J**. 2011 Mar 1;434(2):233-42.
29. Gupta, R.K., **Chauhan, S.** and Tyagi, J.S. *K182G substitution in DevR or C(8)G mutation in the Dev box impairs protein-DNA interaction and abrogates DevR-mediated gene induction in Mycobacterium tuberculosis*. **FEBS J**. 2011 Jun; 278(12):2131-9.
30. Gautam, U.S., **Chauhan, S.** and Tyagi, J.S. *Determinants outside the DevR C-terminal domain are essential for cooperativity and robust activation of dormancy genes in Mycobacterium tuberculosis*. **PLoS One**. 2011 Jan 27;6(1): e16500.

2010

31. Majumdar, S.D., Sharma, D., Vashist, A., Kaur, K., Taneja, N.K., **Chauhan, S.**, Challu, V.K., Ramanathan, V.D., Balasangameshwara, V., Kumar, P. et al. *Co-expression of DevR and DevR(N)-Aph proteins is associated with hypoxic adaptation defect and virulence attenuation of Mycobacterium tuberculosis*. **PLoS One**. 2010, Feb 26;5(2):e9448.
32. **Chauhan S**, Singh A, Tyagi JS. *A single-nucleotide mutation in the -10 promoter region inactivates the narK2X promoter in Mycobacterium bovis and Mycobacterium bovis BCG and has an application in diagnosis*. **FEMS Microbiol Lett**. 2010, Feb;303(2):190-6.

2009

33. **Chauhan S**, Tyagi JS. *Powerful induction of divergent tgs1-Rv3131 genes in Mycobacterium tuberculosis is mediated by DevR interaction with a high-affinity site and an adjacent cryptic low-affinity site*. **Journal of Bacteriology**. 2009, Oct;191(19):6075-81.
34. **Chauhan S**, Kumar A, Singhal A, Tyagi JS, Krishna Prasad H. *CmtR, a cadmium-sensing ArsR-SmtB repressor, cooperatively interacts with multiple operator sites to*

autorepress its transcription in Mycobacterium tuberculosis. **FEBS J.** 2009, Jul; 276(13):3428-39.

2008

35. **Chauhan S**, Tyagi JS. *Interaction of DevR with Multiple Binding Sites Synergistically Activates Divergent Transcription of narK2-Rv1738 Genes in Mycobacterium tuberculosis*. **Journal of Bacteriology**. Aug 2008, p. 5394–5403, 190, No. 15.
36. **Chauhan S**, Tyagi JS. *Cooperative binding of phosphorylated DevR to upstream sites is necessary and sufficient for activation of the Rv3134c-devRS operon in Mycobacterium tuberculosis: Implication in the induction of DevR target genes*. **Journal of Bacteriology**, June 2008, p. 4301–4312, 190, No.12.

2005

37. Bagchi G^Ψ, **Chauhan S**^Ψ, Sharma D, Tyagi JS. *Transcription and autoregulation of Rv3134c-devR-devS operon of Mycobacterium tuberculosis*. **Microbiology** (2005), 151, 4045-4053.

Adhoc reviewer of Journals

Molecular Cell, eLife, EMBO J, Nature Communication, Autophagy, FEBS Journal, Cell Death and Differentiation, etc.

Editor/Guest editor of Journals

Editorial Board-Autophagy

Academic Editor- PLoS One

Guest Editor – Frontiers in Cell and Developmental Biology (Stress Granules)

Poster Presentations/talks conferences

1. Short talk, Selective Autophagy, Keystone conference-2018, Kyoto, Japan.
2. Keystone autophagy Conference, Breikeridge, US-2015. Poster Presented
3. Keystone autophagy Conference, Austin, US-2014. Poster Presented.
4. Gordon Autophagy Conference, Ventura, US -2012. Poster Presented.
5. Epigenetics retreat, MD Anderson Cancer Center, Houston, US 2011. Poster Presented.
6. International Symposium on TB Diagnostics: Innovating to Make an Impact, 2008, New Delhi. Poster Presented.
7. US-India joint training programme workshop on the intracellular pathogen, 21-24, January, 2008, Hyderabad. Poster Presented.
8. Tenth Asian conference on transcription, 13-16, January, 2008, Bangalore. Poster Presented.
9. International symposium on emerging trends in tuberculosis research: Biomarkers, Drugs and Vaccines, 2008, New Delhi. Poster Presented.

Invited Talks

- Microbiology in the new Millennium: from Molecules to Communities (MNM 2017), JC BOSE INSTITUTE, Kolkata, India.
- Talk, ACGM (Autophagy Core Group Meeting)-1, ILS, Bhubaneswar, 2017
- Invited talk, IISER Thiruvananthapuram, 16th January, 2017
- Invited Talk, ACGM (Autophagy Core Group Meeting) –II, THSTI, Faridabad, 2018
- Annual Biology Meet at the Department of Biological Sciences, IISER Bhopal, January 10-12, 2018
- Invited Talk, ACGM (Autophagy Core Group Meeting) –III, JNCASR, Bangalore, 2019
- Emerging trends in Biology research, ILS, Bhubaneswar, 18-19th March, 2019
- Invited talk , IISC, Bangalore 14th June 2019
- Invited talk , CDFD, Hyderabad, 26th September, 2019
- Invited talk , inSTEM Bangalore 26th September, 2019
- Invited talk, Extra Mural Lecture during National Science Day, Utkal University, Bhubaneswar, 28th February, 2019.
- 9th India Alliance Wellcome-DBT Fellows Meeting Bangalore 13-15 June 2019 .
- Invited talk , University of Hoheinheim, Germany, 13th December, 2019
- Invited talk, International conference of Autophagy and lysosomes (ICAL-2020), Jan 16-20th 2020, IISC, Bangalore.
- Invited talk, Young Investigator meeting-2020, Mahabalipuram.
- Invited Talk, RCB Contemporary Webinar Series, 18th December 2020.
- Invited Talk, National Webinar on Advances in Cancer Biology: Basic to Translational Research 30th Oct 2020, Amity Institute of Biotechnology, Amity University.

Conference and Symposia conducted

1. **Organizer**, International Webinar Series Autophagy, Lysosomes, and Membrane Trafficking: Mechanisms and Diseases, 15 October- 6th November 2020 (25 international speakers). Sponsored by EMBO.
2. **Organizer**, ILS Cell Biology Conference and Workshop-2019:, 09-15 December, 2019.
3. **Organizer**, India/EMBO Symposia- Autophagy: Cellular mechanisms and significance in health and disease, 11-13 December, 2017.
4. **Organizing Committee**, 12th Indo-Australian Biotechnology conference, 7th- 9th August, 2016

Grants (Running /Approved/ completed)

1. Wellcome/DBT India Alliance Intermediate Fellowship- “*Understanding the role of IRGM-mediated innate immune responses in diseases.*” INR 36000000 (546,525 USD) for Five years, 2016-2021 - **Principle investigator** (Running)
2. SERB, DST (EMR)- *Determine whether IRGM is a novel therapeutic target for inducing broad-spectrum antiviral immunity*- INR 6300000 (90000 USD) for 3 years- (2020-2023)-**Principle investigator** (Running)
3. DBT (EMR) - “*Deciphering the role of DZIP3, a RNA binding E3-Ligase in innate immunity*”- **Principle investigator** (Approved, 2020)

4. DHR/ICMR - “*Understanding the enigma of interconnection between inflammatory bowel disease (IBD) and neurodegeneration utilizing genetically predisposed IBD mice model*”- **Principle investigator** (Approved, 2020)
5. DBT-AYUSH Network “*Harnessing the Potential of Traditional Knowledge-based Medicinal Plants for Identifying Anti- SARS-CoV2 Compounds*”- INR 2304000- **Co-Principle investigator** (Running, 2020-21)
6. DBT- special call- *Harnessing the Potential of Marine Bio-resources from Odisha Coast for Development of Therapeutic Products*- INR 34181520-**Co-Principle investigator** (Running, 2021-2024)
7. SERB, DST- Young Scientist Start up research grant- INR 3600000 (56214 USD) for 3 Years, 2016-2019) - **Principle investigator** (Completed)

Member of Society and Founder Member

Life member- Indian Society of Cell Biology

Autophagy India Network (<https://autophagyindianetwork.weebly.com/>) Twitter @Autophagy_India

Lab students honors/awards/fellowships

1. Parej Nath- Sunpharma Science Scholar Award-2020
2. Kautilya Kumar Jena- NASI-Young Scientist Platinum Jubilee Award-2020
3. Kautilya Kumar Jena- INSA Young Scientist Medal-2020
4. Dr. Subhash Mehto- Inspire Faculty Fellowship-2020
5. Dr. Subhash Mehto- Merit certificate “N-PDF online poster competition” organized by DST-SERB and ACS publication-2020
6. Dr. Subhash Mehto - DST-DFG Young Scientist Award for attending Lindau Nobel Laureate Meeting-2020/21
7. Kautilya Kumar Jena - DST-DFG Young Scientist Award for attending Lindau Nobel Laureate Meeting-2020/21
8. Dr. Subhash Mehto- TNQ-Cell Press Inspiring Science Award Winner-2020
9. Dr. Subhash Mehto- NASI-Young Scientist Platinum Jubilee Award-2019
10. Kautilya Kumar Jena- TNQ-Inspiring Science Award Runner up-2019
11. AWSAR DST Award in pdf category- Dr. Nuzhat Ahsan
12. Paper selected for a short talk in Keystone conference on innate immunity, Taipei, Taiwan, 2019- Dr. Subhash Mehto (Postdoctoral Fellow)
13. Travel award from DST and Immunology Foundation to attend the conference- Dr. Subhash Mehto (Postdoctoral Fellow)

Journal Cover Page

1. Cancer Research (AACR)- January 2021, Volume 81, Issue 2



2. Autophagy (Taylor and Francis)- February 2021, Volume 17, Issue 2

