Siddhesh S. Kamat, Ph.D.
Professor (Biology)

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Educational Qualifications

2007-12 Ph.D., Department of Chemistry, Texas A&M University (Advisor: Frank M. Raushel)
2003-07 B. Tech. (Pharmaceuticals & Fine Chemicals), UDCT Mumbai (Advisor: K. G. Akamanchi)

Professional Positions

2025 – present Professor, Department of Biology, IISER Pune
2022 – present SwarnaJayanti Fellow, IISER Pune, India.
2021 – present Chairperson, National Facility for Gene Function in Health and Disease, IISER Pune, India.
2020 – 2025 Associate Professor, Department of Biology, IISER Pune, India.
2020 – 2025 EMBO Young Investigator, IISER Pune, India.
2020 – 2024 Adjunct Faculty, Department of Biological Sciences, TIFR Mumbai, India.
2016 – 2021 Adjunct Faculty, Department of Chemistry, IISER Pune
2016 – 2021 Intermediate Fellow, DBT/Wellcome Trust India Alliance, IISER Pune, India.
2016 – 2019 Assistant Professor, Department of Biology, IISER Pune, India.
2013 – 2016 9th Irving S. Sigal ACS Postdoctoral Fellow, Scripps Research, CA, USA (Advisor: Benjamin F. Cravatt).

Awards/Fellowships/Elected Memberships (since joining IISER Pune)

2026 Fellow, National Academy of Sciences, India (NASI) (from 2027)
2026 Fellow, Royal Society of Biology
2025 Tarun Tejankit Award, Loksatta (for the year 2024)
2024 Infosys Prize in Life Sciences
2024 Fellow, Royal Society of Chemistry
2022 Member, Guha Research Conference
2021 SwarnaJayanti Fellowship (Life Sciences category)
2021 CDRI Award for Excellence in Drug Research (Life Sciences category)
2020 EMBO Young Investigator Award
2019 Merck Young Scientist Award in Biological Sciences
2019 Indian National Science Academy (INSA) Young Scientist Medal
2019 UDCT Distinguished Alumni Award – Young Achiever
2017 Early Career Research Award (SERB)
2016 DBT/Wellcome Trust India Alliance, Intermediate Fellowship

Research Grants (since joining IISER Pune)

2026-29 ANRF Advanced Research Grant (PI, Rs. 84,78,720)
2026-28 BFI-BIOME research donation (PI, $175,000)
2024-27 Extramural Centre for Advanced Research grant, ICMR (co-PI, Rs. ~ 8,00,00,000 to IISER Pune)
2023-26 Infectious Biology Special grant, DBT (co-PI, Rs. 2,64,91,600 to IISER Pune)
2022-27 SwarnaJayanti Fellowship, DST-SERB (PI, Rs. 4,98,95,600)
2020-25 Young Investigator Grant, EMBO (PI, ~ Rs. 45,00,000)
2020-24 Core Research Grant, DST-SERB (PI, Rs. 60,19,400)
2020-23 STAG on Medical Biotechnology, DBT (Co-PI, Rs. 34,38,360 to IISER Pune)
2017-20 Early Career Research Award, DST-SERB (PI, Rs. 46,92,671)
2016-21 Intermediate Fellowship, DBT/Wellcome Trust India Alliance (PI, Rs. 3,51,18,504)

Professional Activities (since joining IISER Pune)

- Editorial Board Member: (i) British Journal of Pharmacology (January 2023 – December 2026), (ii) Journal of Biological Chemistry (July 2023 – June 2028)
- Department of Biotechnology (DBT): (i) Technical Evaluation Committee (TEC) Member on Chronic Disease and Neurobiology (2022 – 2025); (ii) Selection Committee Member of the MK Bhan Research Fellowship (2022 – 2025; 2025 – 2028), (iii) Biotech Cluster Management Committee of Pune Biotech Cluster: Model Organisms to Human Disease (2024 – 2027); (iv) Technical Evaluation Committee (TEC) Member on Cardiovascular Health and Diseases (2025 – 2028).

- Anusandhan National Research Foundation (ANRF): Technical Program Committee member for Advanced Research Grant – Interdisciplinary Biological Sciences program (2025 – 2028)
- Member: Research Area Panel - Scientific Advisory Committee (RAP-SAC), NCCS Pune (2023)
- Member, IISER Pune Senate (2025 – present)
- Adhoc Reviewer for Nature, Nature Chemical Biology, Cell Chemical Biology, Cell Metabolism, Nature Communications, JACS, Angewandte Chemie, EMBO J., Cell Reports, ACS Chemical Biology, Disease Models and Mechanisms, Biochemistry.

Research Publications: From IISER Pune (2016 – present) (*denotes corresponding author)

1. Kapoor, Y., Dutta, D., Suhas, K. S., Chakraborty, A., Birua, S., Priya, A., Khan, M. Z., Adicherla, H., Singh, A., **Kamat, S. S.**, Dhar, N., Singh, A., Nandicoori, V. K. (2026) CidIVA, a novel DivIVA domain-containing protein is critical for cell envelope integrity and intracellular survival of mycobacteria, ***PLoS Pathogens*** (*Accepted, In Press*).
2. Chandramouli, A. **Kamat, S. S.*** (2026) The hunt for cholesteryl ester hydrolases: Identification of lipoprotein lipase as a cholesterylesterase, ***Biochemistry*** (*Accepted, Online*).
3. Yadav., M., Firzan, N. C. A., Mandal, D., Shukla, J., Sarkar, B., Mahtha, S. K., Chandramouli, A., Prasad, A., **Kamat, S. S.**, Mohanty, D., Dutta, S., Mahendran, K. R., Gokhale, R. S. (2026) A voltage-gated porin PPE1 regulates secretion and drug resistance in Mycobacterium. Tuberculosis, ***PNAS*** (*Accepted, In Press*).
4. Agrawal, S., Chandramouli, A., Mohela, K., Ganie, H. A., Puthalath, I. R., Mony, B., Jenal, U., **Kamat, S. S.**, Hallez, R., Radhakrishnan, S. K. (2026) A hierarchical metabolic flux orchestrates cell cycle transitions in bacteria, ***Nature Communications*** (*Accepted, In Press*).
5. Garg, L., Karthik, H., Chandramouli, A., Deivasigamani, S., **Kamat, S. S.**, Ratnaparkhi, A., Ratnaparkhi, G. S. (2026) Glial ceramide orchestrates lipid homeostasis and age-dependent motor function, ***Disease Models & Mechanisms*** (*Accepted, In Press*).
6. Kumar, S., Shambhavi, S., Zehra, A., Chakraborty, A., Saleem, S. M. H., Mohapatra, A., Pal, B., Kalivedi, S. V., **Kamat, S. S.**, Sankaranarayanan, R. (2026) A lipid acyl code-based Dip2-Pkc1 signalling axis maintains mitochondrial integrity in eukaryotes, ***eLife*** (*Accepted, In Review*).
7. Garg, L., Chaplot, K., Kuppili, G., Tendulkar, S., Joseph, J., **Kamat, S. S.**, Ratnaparkhi, G. S. (2026) Neuro-glial imbalance in a Drosophila model of Amyotrophic Lateral Sclerosis 8, ***Acta Neuropathologica Communications*** 14 (1), 189.
8. Gupta, S., Dhaware, M., **Kamat, S. S.*** (2026) Biochemical characterization of ABHD14A, an outlying member of the metabolic serine hydrolase family, ***Biochemistry*** 65 (15), 2431-2440.
9. Roy, A., Roy, A. E., Ibragimov, A., DaSilva, J., Kumar, K., Schedl, P., **Kamat, S. S.**, Ratnaparkhi, G. S., Deshpande, G. (2026) Wunen(s) help navigate primordial germ cells by attenuating hedgehog signaling, ***eLife*** 15, RP111629.
10. Gupta, S., Duraiswamy, S., Takata, T., Akaike, T., **Kamat, S.S.**, Allimuthu, D., Chakrapani, H. (2026) Engineered substrates for a sulfurtransferase enhance endogenous hydropersulfides and inhibit ferroptosis, ***Angewandte Chemie*** 65 (38) e4893359, 1-12.
11. Adhur, K. A., Nirdosh, Chandramouli, A., Basu, S., Lahiri, A., **Kamat, S. S.**, Mishra, S., Habib, S. (2026) A bacterial-type cardiolipin synthase in Plasmodium spp. supports mitochondrial respiration and is important for liver stage maturation, ***PLoS Pathogens*** 22 (5), e1014215.
12. Tripathy, S., Mahapatra, A., Saharan, O., Chatterjee, H., Sengupta, N., **Kamat, S. S.**, Nair, S., Mallik, R. M. (2026) Selective targeting of kinesin on lipid droplets in the liver reduces serum lipids, ***PNAS*** 123 (20), e2528332123.
13. Mondal, A., Chakraborty, A., Nandi, S., Singh, V., **Kamat, S. S.**, Das, C. (2026) Transcription factor 19 modulates fatty acid elongation and unfolded protein response to attenuate palmitic acid induced hepatic dysfunction, ***Nature Communications*** 17, 5596.
14. Srivastava, S., Chandramouli, A., Gupta, P., Manzer, A. R., Choudhary, R., Reddy, D. S., Yazdani, S., **Kamat, S. S.**, Mohanty, D., Nandicoori, V. K., Gokhale, R. S. (2026) Novel routes for bioproduction of delta lactone aroma compounds, ***Metabolic Engineering*** 94, 295-304.
15. Wong, T. Y., Sharma, S., Mehdiratta, K., Bhosale, R. S., Nimmakayala, K., Wilharm, R. K., Chakraborty, A., Orimoyole, M., Liu, Q., **Kamat, S. S.**, Pierre, V. C., Gokhale, R. S., Aldrich, C. C. (2025) Kupyaphores – self assembling diisocyanolipopeptide Zn(II) inophores in Mycobacterium tuberculosis Zn(II)/Cu(I/II) homeostasis and antibacterial effects, ***JACS*** 147 (44), 40652-40652.
16. Walvekar, A., Pandey, S., **Kamat, S. S.**, Ladher, R. K., Vyas, N. (2025) The patterning and proliferation roles of Shh are partitioned on distinct exosomes, ***Developmental Biology***, 528, 239-254.
17. Kagemann, C. H., Babu, S. P., Ezhumalai, K., Chakraborty, A., Raghupathy, K., **Kamat, S. S.**, Viswanathan, V., Huey, S. L., Narasimhan, P. B., Sinha, P., Yu, E. A., Mehta, S., Sarkar, S. (on behalf of the Regional Prospective Observational Research on Tuberculosis India Consortium) (2025) Metabolite dynamics over the course of anti-tuberculosis treatment in individuals with mild and severe tuberculosis, ***PLoS Global Public Health*** 5 (1), e0004925.
18. Bhosale, R., Chakraborty, A., Wong, T. Y., Masal, D., Choudhary, R., Srivastava, S., Reddy, D. S., Aldrich, C., **Kamat, S. S.**, Mohanty, D., Gokhale, R. S. (2025) Enzymatic pathway for kupyaphore degradation in *Mycobacterium tuberculosis*: mechanism of metal homeostasis and turnover, ***ACS Chemical Biology*** 20 (7), 1492-1504.

19. Shanbhag, K., Mhetre, A., Saharan, O., Devarajan, A., Rai, A., Madhusudhan, M. S., Chakrapani, H.*, **Kamat, S. S.*** (2025) Chemoproteomics identifies protein ligands for monoacylglycerol lipids, ***Communications Chemistry*** 8, 197.
20. Garde, S., Selvaraj, H., Chandramouli, A., Reddy, G. S., Bahety, D., Chodisetti, P. K., **Kamat, S. S.**, Reddy, M. (2025) A conserved editing mechanism for the fidelity of bacterial cell wall biosynthesis, ***PNAS*** 122 (8), e2505676122.
21. Tripathi, S., Gupta, E., Naik, R., Khare, S., Mir, R., **Kamat, S. S.**, Galande, S. (2025) Statins exhibit anti-tumor potential by modulating Wnt/β-catenin signalling in colorectal cancer, ***Oncotarget*** 16, 562-581.
22. Manna, S., Gupta, S., Bora, P., Chakraborty, A., Kumar, A. T., **Kamat, S. S.***, Chakrapani, H.* (2025) Tandem biocatalysis to generate hydrogen sulphide and promote endogenous antioxidant response, ***Angewandte Chemie*** 64 (24), e202502917.
23. Mondal, A., Nandi, S., Singh, V., Chakraborty, A., Banerjee, I., Sen, S., Gadad, S. S., Roy, S., **Kamat, S. S.**, Das, C. (2025) TCF7I2 regulates fatty acid elongase HACD3 during lipid-induced stress, ***Biochemistry*** 64 (8), 1828-1840. *Featured on the April 2025 issue cover of Biochemistry*
24. Chakraborty, A., Devarajan, A., Kumar, K., Rohith, C. S., Madhusudhan, M. S., Ratnaparkhi, G. S., **Kamat, S. S.*** (2025) Bioinformatics analysis identifies sequence determinants of enzymatic activity for the PHARC associated lipase ABHD12, ***Biochemistry*** 64 (8), 1852-1863.
25. Chakraborty, A., Punnamraju, P., Sajeevan, T., Kaur, A., Kolthur-Seetharam, U., **Kamat, S. S.*** (2025) Identification of ABHD6 as a lysophosphatidylserine lipase in the mammalian liver and kidneys, ***J. Biological Chemistry*** 301 (2), 108157, 1-13.
26. Kapoor, Y., Khurana, H., Chakraborty, A., Dutta, D., Priya, A., Singh, A., **Kamat, S. S.**, Dhar, N., Pucadyil, T. P., Nandicoori, V. K. (2025) Wag31, a membrane tether, is crucial for lipid homeostasis in mycobacteria, ***eLife*** 14, RP104268.
27. Sarkar, B., Singh, J., Yadav, M., Sharma, P., Sharma, R. D., Singh, S., Chandramouli, A., Mehdiratta, K., Kumar, A., **Kamat, S. S.**, Ghorpade, D. S., Mohanty, D., Kumar, D., Gokhale, R. S. (2025) PPAR-gamma mediated enhanced lipid biogenesis fuels Mycobacterium tuberculosis growth in drug tolerant hepatocyte environment, ***eLife*** 14, RP103817.
28. Shambhavi, S., Mondal, S., Chakraborty, A., Panda, B. K., Shukla, N., Kumar, S., Kinatukara, P., Pal, B., **Kamat, S. S.**, Sankarnarayanan (2025) Emergence of Dip2 mediated specific DAG-based PKC signalling axis in eukaryotes, ***eLife*** 14, RP104011.
29. Jog, E., Jainarayanan, A. K., Ferlita, A. L., Chakraborty, A., Dalwai, A., Yahya, S., Shivshankar, A., Choudhary, B. S., Chandramouli, A., Kazi, M., Jain, D., Khapare, N., Akshaya, B., Khan, B. K., Gera, P., Patil, P., Thorat, R., Verma, N., Sehgal, L., Saklani, A., **Kamat, S. S.**, Dalal, S. N., Chaudhary, N. (2025) Inhibiting de novo lipogenesis identifies a therapeutic vulnerability in therapy-resistant colorectal cancer, ***Redox Biology*** 79, 103458, 1-16.
30. Sinha, A., Saini, K. K., Chandramouli, A., Tripathi, K., Khan, M. A., Satrusal, S. R., Verma, A., Mandal, B., Rai, P., Meena, S., Nengroo, M. A., Singh, M. P., Bhushan, N. S., Vasudevan, M., Singhai, A., Singh, K., Mishra, A. K., **Kamat, S. S.**, Datta, D. (2024) ACSL4 mediated H3K9 and H3K27 hyperacetylation upregulates SNAIL to drive TNBC metastasis, ***PNAS*** 121 (52), e2408049121.
31. Kumar, K., Pazare, M., Ratnaparkhi, G. S., **Kamat, S. S.*** (2024) CG17192 is a phospholipase that regulates signalling lipids in the Drosophila gut upon infection, ***Biochemistry*** 63 (22), 3000-3010.
32. Chandramouli, A., **Kamat, S. S.*** (2024) A facile LC-MS method for profiling cholesterol and cholesteryl esters in mammalian cells and tissues, ***Biochemistry*** 63 (18), 2300-2309. *Featured on the September 2024 issue front cover of Biochemistry*
33. Talwadekar, M., Khatri, S., Balaji, C., Chakraborty, A., Basak, N. P., **Kamat, S. S.***, Kolthur-Seetharam, U.* (2024) Metabolic transitions regulate global protein fatty acylation, ***J. Biological Chemistry*** 300 (1), 105563, 1-14.
34. Vaidya, K., Rodrigues, G., Gupta, S., Devarajan, A., Yeolekar, M., Madhusudhan, M. S.*, **Kamat, S. S**.* (2025) Identification of sequence determinants for the ABHD14 enzymes, ***Proteins: Structure, Function & Bioinformatics*** 93 (1), 255-266.
35. Sen, D., Maniyadath, B., Khatri, S., Chakraborty, A., Mehendale, N., Chowdhury, S., Nadagouda, S., Kaur, A., **Kamat, S. S.**, Kolthur-Seetharam, U. (2023) Interplay between CTCF and feed-fast cycles rewires hepatic transcription and metabolism, ***iScience*** 26 (7), 107128.
36. Kumari, P., Kaul, G., Kumar, A., Akhil, A., Shukla, M., Sharma, S., **Kamat, S. S.***, Chopra, S.*, Chakrapani, H.* (2023) Heterocyclic diaryliodonium-based inhibitors of Carbapenem-resistant *Acinetobacter baumannii* (CRAB), ***Microbiology Spectrum*** 11 (2), e04773-22.
37. Mehdiratta, K., Nain, S., Sharma, M., Singh, S., Srivastva, S., Dhamale, B D., Mohanty, D., **Kamat, S. S.**, Natarajan, V. T., Sharma, R., Gokhale, R. S. (2023) Respiratory quinone switch from menaquinone to polyketide quinone during the development cycle in Streptomycin sp. MNU77, ***Microbiology Spectrum*** 11 (1), e02597-22.
38. Mondal, S., Kinatukara, P., Singh, S., Shambhavi, S., Patil, G. S., Dubey, N., Singh, S. M., Pal, B., Shekar, P. C., **Kamat, S. S.**, Sankarnarayanan, R. (2022) Dip2 is a unique regulator of diacylglycerol lipid homeostasis in eukaryotes, ***eLife*** 11, e77665.
39. Rajendran, A., Soory, A., Khandelwal, N., Ratnaparkhi, G. S., **Kamat, S. S.*** (2022) A multi-omics analysis reveals that the lysine deacetylase ABHD14B influences glucose metabolism in mammals, ***J. Biological Chemistry*** 298 (7), 102128, 1-14.
40. Kumar, S., Khan, M. Z., Khandelwal, N., Chongtham, C., Singha, B., Dabla, A., Behera, D., Singh, A., Gopal, B., Arimbasseri, G. A., **Kamat, S. S.**, Nandicoori, V. K. (2022) *Mycobacterium tuberculosis* transcription factor, EmbR, regulates the expression of key virulence factors that aid in ex vivo and in vivo survival, ***mBio*** 13 (3), e03836-21.
41. Mehdiratta, K., Singh, S., Sharma, S., Bhosale, R. S., Choudhary, R., Masal, D. P., Manocha, A., Dhamale, B. D., Khan, N., Vivekanand, A., Sharma, P., Ikeh, M., Brown A. C., Parish, T., Ojha, A., Michael, J. S., Faruq, M., Medigeshi, G. R., Mohanty, D., Reddy, D. S., Natarajan, V. T., **Kamat, S. S.***, Gokhale, R. S.* (2022) Kupyaphores are zinc homeostatic metallophores required for colonization of *Mycobacterium tuberculosis*, ***PNAS*** 119(8), e2110293119.

42. Mehendale, N., Mallik, R. M., **Kamat, S. S.*** (2021) Mapping sphingolipid metabolism pathways during phagosomal maturation, ***ACS Chemical Biology*** 16(12), 2757-2765. *Featured on the December 2021 issue front cover of ACS Chemical Biology*
43. Singh, S., **Kamat, S. S.*** (2021) The loss of enzymatic activity of the PHARC associated lipase ABHD12 results in increased phagocytosis that causes neuroinflammation, ***European Journal of Neuroscience*** 54(10), 7442-7457.
44. Bora, P., Manna, S., Nair, M., Sathe, R. R., Singh, S., Adury, V. S. S., Gupta, K., Mukherjee, A., Saini, D. K., **Kamat, S. S.**, Hazra, A. B., Chakrapani, H. (2021) Leveraging an enzyme/artificial substrate system to enhance cellular persulfides and mitigate neuroinflammation, ***Chemical Science*** 12, 12939-12949.
45. Khandelwal, N., Shaikh, M., Mhetre, A., Singh, S., Sajeevan, T., Joshi, A., Balaji, K. N., Chakrapani, H., **Kamat, S. S.*** (2021) Fatty acid chain length drives lysophosphatidylserine dependent immunological outputs, ***Cell Chemical Biology*** 28, 1169-1179. *Featured on August 2021 issue front cover of Cell Chemical Biology*
46. Kumar, K., Mhetre, A., Ratnaparkhi, G. S., **Kamat, S. S.*** (2021) A superfamily-wide activity atlas of serine hydrolases in *Drosophila melanogaster*, ***Biochemistry*** 60 (16), 1312-1324.
47. Kinatukara, P., Subramaniyan, P. S., Patil, G. S., Shambhavi, S., Singh, S., Mhetre, A., Madduri, M. K., Soundararajan, A., Patel, K. D., Shekar, P. C., **Kamat, S. S.**, Kumar, S., Sankaranarayanan, R. (2020) Peri-natal growth retardation rate and fat mass accumulation in mice lacking Dip2A is dependent on the dietary composition, ***Transgenic Research*** 29, 553-562.
48. Lote-Oke, R., Pawar, J., Kulkarni, S., Sanas, P., Kajale, N., Gondhalekar, K., Khadilkar, V., Kamat, S. S., Khadilkar, A. (2020) A LC-MS method for 25-hydroxy-vitamin D3 measurements from dried blood spots for an epidemiological survey in India, ***Scientific Reports*** 10, 19873.
49. Singh, S., Joshi, A., **Kamat, S. S.*** (2020) Mapping the neuroanatomy of ABHD16A-ABHD12 & lysophosphatidylserines provides new insights into the pathophysiology of the human neurological disorder PHARC, ***Biochemistry*** 59 (24), 2299-2311.
50. Chattopadhyay, T., Maniyadath, B., Bagul, H. P., Chakraborty, A., Shukla, N., Budnar, S., Rajendran, A., Shukla, A., **Kamat, S. S.**, Kolthur-Seetharam, U. (2020) Spatiotemporal gating of SIRT1 functions by O-GlcNAcylation is essential for liver metabolic switching and prevents hyperglycemia, ***PNAS*** 117, 6890-6900.
51. Rajendran, A., Vaidya, K., Mendoza, J., Bridwell-Rabb, J., **Kamat, S. S.*** (2020) Functional annotation of ABHD14B, an orphan serine hydrolase enzyme, ***Biochemistry*** 59 (2), 183-196. *Featured in Future of Biochemistry – Asia Pacific issue*
52. Kumar, M., Ojha, S., Rai, P., Joshi, A., **Kamat, S. S.***, Mallik, R. M.* (2019) Insulin activates intracellular transport of lipid droplets to release triglycerides from the liver, ***J. Cell Biology*** 218, 3697-3713.
53. Kulkarni, A., Soni, I., Kelkar D. S., Dharmaraja, A. T., Sankar, R. K., Beniwal, G., Rajendran, A., Tamhankar, S., Chopra, S.*, **Kamat, S. S.***, Chakrapani, H.* (2019) Chemoproteomics of an indole-based quinone-epoxide identifies druggable vulnerabilities in Vancomycin-resistant *Staphylococcus aureus*, ***J. Medicinal Chemistry*** 62, 6785-6795.
54. Malik, S. A., Acharya, J., Mehendale, N., **Kamat, S. S.**, Ghaskadbi, S. (2019) Pterostilbene reverses palmitic acid mediated insulin resistance in HepG2 cells by reducing oxidative stress and triglyceride accumulation, ***Free Radical Research*** 53, 815-827.
55. Kelkar, D. S., Ravikumar, G., Mehendale, N., Singh, S., Joshi, A., Sharma, A. K., Mhetre, A., Rajendan, A., Chakrapani, H., **Kamat, S. S.*** (2019) A chemical genetic screen identifies ABHD12 as an oxidized phosphatidylserine lipase, ***Nature Chemical Biology*** 15, 169-178.
56. Chaplot, K., Pimpale, L., Ramalingam, B., Deivasigamani, S., **Kamat, S. S.**, Ratnaparkhi, G. S. (2019) SOD1 activity thresholds and TOR signaling modulate VAP(P58S) aggregation via ROS-induced proteasomal degradation in a *Drosophila* model of Amylotrophic Lateral Sclerosis, ***Disease Models & Mechanisms*** 12, dmm.033803, 1-15. *Featured on February 2019 issue front cover of Disease Models & Mechanisms*
57. Abhyankar, V., Kaduskar, B., **Kamat, S. S.**, Deobagkar, D., Ratnaparkhi, G. S. (2018) *Drosophila* DNA/RNA methyltransferase contributes to robust host defense in ageing animals by regulating sphingolipid metabolism, ***J. Experimental Biology*** 221 (22), 1-10.
58. Joshi, A., Shaikh, M., Singh, S., Rajendran, A., Mhetre, A., **Kamat, S. S.*** (2018) Biochemical characterization of the PHARC associated serine hydrolase ABHD12 reveals its preference for long chain lipids, ***J. Biological Chemistry*** 293, 16953-16963. *Featured on the November 2018 issue front cover of JBC*
59. Pathak, D., Mehendale, N., Singh, S., Mallik, R. M., **Kamat, S. S.*** (2018) Lipidomics suggests a new role for ceramide synthase in phagocytosis, ***ACS Chemical Biology*** 13, 2280-2287. *Featured on the August 2018 issue front cover of ACS Chemical Biology*
60. Rai, P., Kumar, M., Sharma, G., Barak, P., Das, S., **Kamat, S. S.**, Mallik, R. M. (2017) Kinesin-dependent mechanism for controlling triglyceride secretion from the liver, ***PNAS*** 114, 12958-12963.

Book Chapters, Reviews, News, Editorials: From IISER Pune (2016 – present) (*denotes corresponding author)

1. Banerjee, I., Mondal, A., **Kamat, S. S.***, Das, C.* (2026) Metabolites with a message: Impacts on epigenetics and implications for epimetabopathies, ***EMBO Reports*** 27, 4969-4985.
2. Saharan, O., Pal, T., **Kamat, S. S.*** (2026) Signaling lipids: an overview of emerging physiological functions, ***Current Opinion in Cell Biology*** 101, 102654, 1-9.
3. Chandramouli, A., **Kamat, S. S.*** (2026) Signaling lipids: Molecular targets for targeted therapies, ***Current Opinion in Chemical Biology*** 91, 102654, 1-9.

4. Thoughts for the future (2025) ***Nature Chemical Biology*** 21, 6-15. (Question: What do you think are the most exciting frontiers or the most needed developments in your main field of research?)
5. Chakraborty, A., **Kamat, S. S.*** (2024) Lysophosphatidylserine: a signaling lipid with implications in human diseases, ***Chemical Reviews*** 124 (9), 5470 – 5504. *Featured on May 2024 issue front cover of Chemical Reviews*
6. Saharan, O., **Kamat, S. S.*** (2023) Mapping lipid pathways during phagocytosis, ***Biochemical Society Transactions*** 51 (3), 1279 – 1287. *Featured on June 2023 issue front cover of Biochemical Society Transactions*
7. Shanbhag, K., Sharma, K., **Kamat, S. S.*** (2023) Photoreactive bioorthogonal lipid probes and their applications in mammalian biology, ***RSC Chemical Biology*** 4, 37 – 46. *Featured on January 2023 issue front cover of RSC Chemical Biology*
8. Saharan, O., Mehendale, N., **Kamat, S. S.*** (2022) Phagocytosis: A (Sphingo)Lipid Story, ***Current Research in Chemical Biology*** 2, article: 10030.
9. Voices of Chemical Biology (2021) ***Nature Chemical Biology*** 17, 1-4. (Question: What is the most exciting frontier area in chemical biology and what key technology is needed to advance knowledge and applications in this area?)
10. Voices of Chemical Biology (2020) ***Nature Chemical Biology*** 16, 598-599. (Question: What was the most exciting research achievement or technology innovation in chemical biology in the last five years?)
11. Shanbhag, K., Mhetre, A., Khandelwal, N., **Kamat, S. S.*** (2020) The Lysophosphatidylserines – an emerging class of signaling lysophospholipid, ***J. Membrane Biology*** 253, 381-397.
12. **Kamat, S. S.***, Singh, S. S., Rajendran, A., Gama, S., Zechel, D. L. (2020) Enzymatic strategies for the catabolism of organophosphates, ***Comprehensive Natural Products III: Chemistry & Biology***: Vol 4: Enzymes and Enzyme Mechanisms, Chapter 16, 399-429.
13. **Kamat, S. S.*** (2019) Understanding the role of molecular motors in living cells: an odyssey from physics to biology, ***Current Science*** 116, 14-16.
14. Ulrich, E., **Kamat, S. S.***, Hove-Jensen, B.*, Zechel, D. L.* (2018) Methylphosphonic acid biosynthesis and catabolism in pelagic bacteria, ***Methods in Enzymology*** Vol. 605, 351-426.

Preprints:

1. Chandramouli, A., Sharma, K., Kallattu, A., Katkar, C., Deshmukh, M., Thakral, P., Chakrapani, H., **Kamat, S. S.*** (2026) Orthogonal chemical proteomic strategies reveal the cholesteryl ester interactome in mammalian cells [**bioRxiv**: https://doi.org/10.64898/2026.09.21.753363]
2. Saharan, O., Bhawna, Saraswati, S. S. K., Akhir, A., Chopra, S., Kumar, D., Mallik, R., **Kamat, S. S.*** (2026) Lysosomal acid lipase regulates cholesterol metabolism during phagosomal maturation [**bioRxiv**: https://doi.org/10.64898/2026.09.18.752819]
3. Biswas, T., Chongtham, C., Kumari, N., Saneja, Y., Yadav, N. K., Maras, J. S., **Kamat, S. S.**, Arimbasseri, G. A. (2026) Linolenic acid induces a vitamin D receptor-independent program by activating CaMKII-SMAD2/3 pathway in calvarial osteoblasts [**bioRxiv**: https://doi.org/10.64898/2026.06.10.731289]
4. Shah, A., Chandramouli, A., Abhayakumar, A., Rajmani, R. S., **Kamat, S. S.**, Balaji, K. N. (2026) Lysine specific demethylase I (LSD1) regulates host alpha-ketoglutarate levels to modulate lipid peroxidation during Mycobacterium tuberculosis infection [**bioRxiv**: https://doi.org/10.64898/2026.04.20.719577]
5. Ullmann, S., Ehrnstrom, B., Stenvick, J., Pinto, S., Subbannayya, Y., Boyarchuk, V., Mestvedt, I. B., Dhaware, M., **Kamat, S. S.**, Ryan, L., Vagle, H., Dahl, T. B., Halvorsen, B. E., Damas, J. K., Espevik, T., Yurchenko, M. (2025) SLAMF1-peptide mediated epigenetic priming reprograms innnate immune responses in sepsis [**bioRxiv**: https://doi.org/10.64898/2025.12.29.696918]
6. Thakral, P., Chakrapani, H.*, **Kamat, S. S.*** (2025) Synthesis of lysophosphatidylglycerol, a bioactive lipid [**ChemRxiv**: https://doi.org/10.26434/chemrxiv-2025-89b6h]
7. Agrawal, U., Nataraj, P., Chandramouli, A., Krishnan, S., **Kamat, S. S.**, Urulangodi, M., Thakur, P. (2025) Integrative lipidomics of brain and plasma uncovers sex-specific metabolic signatures in Parkinson's disease [**bioRxiv**: https://doi.org/10.1101/2025.10.02.679990]
8. Dahiya, P., Bisht, M. K., Saha, A., Chandramouli, A., **Kamat, S. S.**, Nandicoori, V., Ghosh, S., Mukhopadhyay, S. (2025) PE11 promotes intracellular persistence of Mycobacterium tuberculosis by inhibiting autophagy and lysosomal biogenesis by targeting the FLCN-lactate-TFEB signaling axis [**bioRxiv**: https://doi.org/10.1101/2025.07.31.668032]
9. Shetty, S. R., Chakraborty, A., Dongre, S., **Kamat, S. S.**, Sonawane, M. (2025) Developing epidermis acquires nutrients from the external milieu by mTOR-dependent micropinocytosis [**bioRxiv**: https://doi.org/10.1101/2025.03.18.644068]
10. Teli, A., Iyer, R., Shanbhag, K., Gawarguru, R., Gayan, S., Shaikh, S., Tamhankar, A., **Kamat, S. S.**, Dey, T. (2024) Breast cancer spheroids prefer activated macrophages as an accomplice: An *in vitro* study [**bioRxiv**: https://doi.org/10.1101/2024.09.24.614655]

Selected Publications from Postdoc and Ph.D. (2007 – 2016)

1. **Kamat, S. S.**, Camara, K., Parsons, W. H., Chen, D. H., Dix, M. M., Bird, T. D., Howell, A. R., Cravatt, B. F. (2015) Immunomodulatory lysophosphatidylserines are regulated by ABHD16A and ABHD12 interplay, ***Nature Chemical Biology*** 11,164-171.

2. **Kamat, S. S.**, Williams, H. J., Dangott L. J., Chakrabarti, M., Raushel, F. M. (2013) The catalytic mechanism for the aerobic formation of methane by bacteria, ***Nature*** 497, 132-36.
3. **Kamat, S. S.**, Williams, H. J., Raushel, F. M. (2011) Intermediates in the transformation of phosphonates to phosphate by bacteria, ***Nature*** 480, 570-73.
4. **Kamat, S. S.**, Fan, H., Sauder, J. M., Burley, S. K., Shoichet, B. K., Sali, A., Raushel, F. M. (2011) Enzymatic deamination of the epigenetic base N-6-methyladenine, ***JACS*** 133, 2080-83.
5. **Kamat, S. S.**, Bagaria, A., Kumaran, D., Holmes-Hampton, G. P., Fan, H., Sali, A., Sauder, J. M., Burley, S. K., Lindahl, P. A., Swaminathan, S., Raushel, F. M. (2011) Catalytic mechanism and three-dimensional structure of adenine deaminase, ***Biochemistry*** 50, 1917-27.

Invited Talks since joining IISER Pune (**denotes virtual talk)

2026 ARUMDA Annual Symposium, TIFR Hyderabad, India.
2026 Foundation Day Symposium, BRIC-NII, New Delhi, India.
2026 Departmental Colloquium, Department of Bioscience and Bioengineering, IIT Bombay, India.
2026 ARUMDA workshop on Metabolomics, TIFR Hyderabad, India.
2026 EMBO PhD course, IISc Bangalore, India.
2026 National Science Day, IISER Pune, India.
2026 Research Day, Department of Bioscience and Bioengineering, IIT Jodhpur, India.
2026 ATW 2026 meeting, IACS and SINP Kolkata, India.
2025 International Chemical Biology & Molecular Imaging Conference, Shiv Nadar Institute of Eminence, India.
2025 Institute Colloquium, IGIB New Delhi, India.
2025 Society of Mitochondrial Research and Medicine, Manipal, India.
2025 Infosys Prize Lecture, CCMB Hyderabad, India.
2025 Institute Colloquium, TIFR Mumbai, India.
2025 EMBO Sectoral Meeting for Indian YIP & GIN members, IIT Mandi, India.
2025 Departmental Colloquium, School of Bioscience and Bioengineering, IIT Mandi, India.
2025 Workshop on Research Methods in Big Data Analytics for Healthcare: From Basics to Applications, ICMR, India**.
2025 Recent Trends in Biology, SPPU, Pune, India.
2025 Mentor Talk, 17th Young Investigator's Meeting, IndiaBioscience, Agra, India.
2025 Workshop on Stable-Isotope and Metabolomics-based Methods for Nutrition & Metabolism, TIFR Hyderabad, India.
2025 Global Summit on Metabolomics and Lipidomics, IIT Mumbai, India.
2025 SBCI Mumbai Chapter Annual Meeting, NMIMS Mumbai, India.
2025 Infosys Prize Symposium, Edition IV, Taj West End Bangalore, India.
2024 Infosys Award Function for the International Olympiad Medalists, HBCSE Mumbai, India.
2024 ChemCareers iRISE, IISER Pune, India.
2024 Proteomics Society of India 16th Annual Meeting, NCL Pune, India.
2024 EMBO 60th Anniversary Meeting, EMBO Heidelberg, Germany.
2024 NIBMG Colloquium Talks, NIBMG Kalyani, Kolkata, India.
2024 Metabolomics in Drug Discovery Symposium, NIPER-A, Ahmedabad, India.
2024 Nencki Conference for Life Sciences – Focus on Lipid Metabolism, Warsaw, Poland.
2024 EMBO Sectoral meeting in Metabolism and Lipid Biology, Warsaw, Poland.
2024 EMBO Global Investigator's Meeting, NTU Singapore City, Singapore.
2024 Annual YIN PhD Course, EMBO Heidelberg, Germany.
2024 ARUMDA Annual Meeting, TIFR Hyderabad, India.
2024 EMBO YIP: Global Network, Borderless Science, Impactful Research: IndiaBioscience Webinar**
2024 Cutting Edge Lecture Series, ACTREC, Navi Mumbai, India.
2024 Bioconclave, Department of Biology, IISER Pune, India.
2023 NIUS Chemistry Camp, HBCSE, Mumbai, India.
2023 Chemsymphoria, Chemistry IISER Pune, Pune, India.
2023 Winter Symposium, BSBE IIT Kanpur, Kanpur, India.
2023 Proteomics Society of India 15th Annual Meeting**, NIPGR, New Delhi, India.
2023 EMBO Day, Academia Sinica, Taipei, Taiwan.
2023 EMBO Day, National Cheng Kung University, Tainan, Taiwan.
2023 Institute Invited Lecture, InStem Bangalore, India.
2023 EMBO Young Investigator's Annual Meeting, Milan, Italy.
2023 Student Invited Talk, DBS TIFR Mumbai, India.
2023 Redox Biology of Health and Disease, IISER Pune, India.
2023 ARUMDA Annual Meeting**, TIFR-Hyderabad, India.
2023 Mitometab meeting, 42nd Mahabaleshwar seminar series, IISER Pune, Pune, India.

2023 MBU50 meeting, IISC Bangalore, India.
2022 Annual Meeting, Society of Biological Chemists of India, Kolkata, India.
2022 NII Seminar Series, NII, New Delhi, India
2022 FEBS Advanced Course: 360º Lysosome Meeting, Kusadasi-Izmir, Turkey.
2022 Asian Chemical Biology Initiative (ABCI) Annual Meeting, IISER Pune, India
2022 Cell Biology Lecture Series, NCCS Pune, India.
2022 EMBO Young Investigator's Annual Meeting, Heidelberg, Germany.
2022 EMBO-India Investigators Network (IIN)**, India.
2022 Guha Research Conference, Bhimtal-Nainital, Uttarakhand, India.
2022 10th International Singapore Lipid Symposium (ISLS)**, National University of Singapore, Singapore.
2022 Mumbai Chapter Webinar**, Society of Biological Chemists of India, BARC Mumbai, India.
2021 Annual Meeting**, Society of Biological Chemists of India, Amity University, Haryana, India.
2021 OMICS 2021**, Proteomics Society of India Annual Meeting, CCMB Hyderabad, India.
2021 Contemporary Webinar Series**, Regional Centre for Biotechnology (RCB), Faridabad, NCR, India.
2021 Annual Talks**, Department of Biological Sciences, TIFR Mumbai, India.
2021 CDRI Award Ceremony, CDRI, Lucknow, Uttar Pradesh, India.
2021 Young Investigator's Meeting**, EMBO, Heidelberg, Germany.
2021 Annual Talks**, Department of Biological Sciences, TIFR Hyderabad, India.
2020 CCMB Biologue**, CCMB Hyderabad, India.
2020 The Cancer Genome Atlas Conference**, Center of Translational Cancer Research, Pune, India.
2020 International Symposium on Cell Surface Macromolecules, IISER Pune, India.
2019 International Chemical Biology Society, 8th Annual meeting, IICT Hyderabad, India.
2019 Young Investigator's Meeting, EMBO, Heidelberg, Germany.
2019 Advances in Mass Spectrometry Symposium, IISER Tirupati, India.
2019 Indo-UK Chemical Biology Symposium, University of Glasgow, Scotland.
2018 Proteomics Society of India 10th Annual meeting, NCCS, Pune, India.
2018 Indo-US Symposium on Understanding Biology by Proteomics & Metabolomics, NCCS, Pune, India.
2018 Proteomics Day, CSIR-NCL Pune, India.
2017 iCeMS-NCBS India Alliance Symposium, NCBS Bangalore, India.
2016 Omics to Structural Basis of Disease National Symposium, MSU Baroda, India.

Conferences/Meetings Organizations: From IISER Pune (2016 – present)

1. EMBO Young Investigator Network Ph.D. Course, IISc Bangalore (March 2026)
2. 1-day symposium on "Proteins: Structure, Function & Beyond" at IISER Pune (December 2025).
3. EMBO Sectoral Meeting for Indian EMBO YIP/GIN members, IIT Mandi (April 2025)
4. EMBO Young Investigator Network Ph.D. Course, IISER Pune (February 2025)
5. Lab Leadership Course, EMBO Solutions, IISER Pune (October 2024)
6. 43rd Annual conference of The Indian Association for Cancer Research, IISER Pune (January 2024)
7. Macromolecular Assemblies (structure, function and evolution), IISER Pune (August 2023)
8. EMBO India Delegation, various parts of India, including IISER Pune (March 2023)
9. IISER Pune – Weizmann Institute of Science: Conference on Chemical Biology, IISER Pune (December 2018)
10. 10th Annual Proteomics Society of India meeting, NCCS Pune (December 2018).

Current Lab Members

1. Dr. Kavita Sharma, Postdoctoral Research Associate, IISER Chemistry (jointly with Harinath Chakrapani)
2. Dr. Preeti John, Postdoctoral Research Associate, IISER Biology
3. Dr. Shabda Kulsange, Postdoctoral Research Associate, IISER Biology
4. Ojal Saharan, Int. Ph.D. student, IISER Biology (pre-synopsis completed)
5. Aakash Chandramouli, Ph.D. student, IISER Biology
6. Abhishek Kumar, Ph.D. student, IISER Chemistry (jointly with Harinath Chakrapani)
7. Neeraj Kumar Yadav, Ph.D. student, IISER Biology
8. Adithya Kallathu, Int. Ph.D. student, IISER Biology
9. Shrutika Raje, Ph.D. student, IISER Biology
10. Tathagata Pal, Ph.D. student, IISER Biology
11. Anwesha Mukherjee, Int. Ph.D. student, IISER Biology
12. Rajnish Kumar, Int. Ph.D. student, IISER Biology (jointly with Girish Ratnaparkhi)
13. Surabhi VT, Ph.D. student, IISER Biology
14. Charvi Joshi, MS Thesis Student
15. Mahamaya Dhaware, Research Scientist

Alumni

1. Ines Leleu (Raman Charpak Fellow, MS Thesis, August 2018 – October 2018)
2. Sharvari Tamhankar (Project Student, January 2018 – August 2018)
3. Alaumy Joshi (Research Fellow, November 2016 – August 2019)
4. Dhanashree Kelkar, Ph.D. (Postdoc, January 2017 – January 2020)
5. Theja Sajeevan (MS Thesis Student, January 2019 – June 2020)
6. Shubham Singh, Ph.D. (Doctoral Student, August 2016 – July 2021)
7. Neelay Mehendale, Ph.D. (Doctoral Student, August 2016 – October 2021)
8. Minhaj Shaikh, Ph.D. (Doctoral Student, January 2017 – October 2021)
9. Neha Khandelwal, Ph.D. (Postdoc, April 2018 – November 2021)
10. Amol Mhetre, Ph.D. (Postdoc, August 2017 – February 2022)
11. Abinaya Rajendran, Ph.D. (Doctoral Student, August 2016 – June 2022)
12. Anisha Rai (MS Thesis Student, January 2022 – May 2023)
13. Prajwal Punnamraju (MS Thesis Student, May 2022 – May 2023)
14. Rohith C. S. (MS Thesis Student, January 2022 – May 2023)
15. Mihika Yeolekar (Research Intern, June 2022 – May 2023)
16. Kaveri Vaidya, Ph.D. (Doctoral Student & Research Associate, August 2017 – April 2024)
17. Chaitanya Katkar (MS Thesis Student, January 2023 – May 2024)
18. Sreedev H (MS Thesis Student, January 2023 – May 2024)
19. Archit Devarajan (Intern, July 2023 – June 2024)
20. Kundan Kumar, Ph.D. (Doctoral Student, August 2019 – December 2024)
21. Karthik Shanbhag, Ph.D. (Doctoral Student, August 2018 – January 2025)
22. Arnab Chakraborty, Ph.D. (Doctoral Student, August 2019 – April 2025)
23. Pushti Gandhi (MS Thesis Student, May 2025 – November 2025)
24. Manish Deshmukh (MS Thesis Student, May 2024 – December 2025)
25. Sonali Gupta (Doctoral Student, August 2020 – March 2026)
26. Pooja Thakral (Doctoral Student, August 2021 – March 2026)
27. Sansthita Pramanik (MS Thesis Student, January 2025 – May 2026)
28. Jyotsna Singh, Ph.D. (Postdoc, June 2024 – July 2026)

Teaching Experience (since joining IISER Pune)

- Advanced Biochemistry I (Course coordinator) (August Semester 2017-2026: 4 credit)
- Biology and Disease (Course instructor) (January Semester 2017-19: 3 credit) (January Semester 2020-24: 4 credit)
- 1st year Biology Practical Lab (Course Instructor) (August Semester 2021; January Semester 2024-27: 4 credit)

Science Outreach Activities: From IISER Pune (2016 – present)

1. Mentor, National Initiative for Undergraduate Sciences, Homi Bhabha Center for Science Education, Mumbai
2. Consultant, iGEM Synthetic Biology, iGEM Grand Jamboree
3. Volunteer, SERB Karyashala Workshop for Hands-on training in biological mass spectrometry
4. Coordinator, EMBO Young Investigator Network Ph.D. Course for India
5. Mentor, India Bioscience Young Investigator Forum
6. Mentor, Lodha Genius program at IISER Pune (LGIP)