Curriculum Vitae

Name and full correspondence address

Hemlata Agnihotri
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Academic Qualification (Undergraduate Onwards)

	Degree	Year	Subject	University/Institution
1.	B.Sc	2005	Chemistry,Botany,Zoology	CSJM University, Kanpur
2.	M.Sc	2007	Life Science	CSJM University, Kanpur
3.	Ph.D	2016	Sciences (Biological Science)	AcSIR (Academy of Scientific and Innovative Research) CSIR-Central Drug Research Institute, Lucknow.

Work experience

Sl.no.	Positions Held	Name of the Institute	From	To
1	Assistant Professor	Department of Biophysics, University of Delhi, South Campus	July, 2022	Till date
2	DBT-BioCaRE Women Scientist	Indian Institute of Technology, Kanpur	Sep, 2019	July, 2022
3	Research Associate	Indian Institute of Technology, Kanpur	Apr 2019	Aug 2019
4	DST-SERB NPDF	Indian Institute of Technology, Kanpur	Apr 2017	Mar 2019

Professional Recognition/ Award/ Prize/ Certificate, Fellowship received

- **DBT-BioCaRE Fellowship** Sep 2019-2022
- **SERB-ACS Online Research Poster Competition winner in Life Sciences** Category, 2020 , (Conducted by Science and Engineering Research Board & American Chemical Society Publications)
- **DST-SERB National Post Doctoral Fellowship** : April 2017-2019
- **Senior Research Fellowship** (April 2012 – 2015): from **Council of Scientific and Industrial Research, New Delhi.**
- **Senior Research Fellowship** (December 2011–Mar, 2012): from **Indian Council of Medical Research**, New Delhi.
- **CSIR-UGC NET- Lectureship** (June 2007): Qualified test of Eligibility for Lectureship conducted jointly by Council of Scientific and Industrial Research and University Grants Commission, New Delhi

Publications

I. First author/Joint first author publications

i. Baidya M*, Chaturvedi M*, **Dwivedi-Agnihotri H***, Ranjan A, Devost D, Namkung Y, Stepniewski TM, Pandey S, Baruah M, Panigrahi B, Sarma P, Yadav MK, Maharana J, Banerjee R, Kawakami K, Inoue A, Selent J, Laporte SA, Hébert TE, Shukla AK. Allosteric modulation of GPCR-induced β-arrestin trafficking and signaling by a synthetic intrabody. ***Nature Communications***. 2022 Aug 8;13(1):4634. doi: 10.1038/s41467-022-32386. (***Equal contribution/ Joint first author) (Impact factor: 17.69)**

ii. **Dwivedi-Agnihotri, H**., Chaturvedi, M., Baidya, M., Stepniewski, T.M., Pandey, S., Maharana, J., Srivastava, A., Caengprasath, N., Hanyaloglu, A.C., Selent, J. and Shukla, A.K., 2020. Distinct phosphorylation sites in a prototypical GPCR differently orchestrate β-arrestin interaction, trafficking, and signaling. ***Science advances***, 6(37), p.eabb8368. **(Impact factor: 14.14)**

iii. Baidya, M*., Kumari, P*., **Dwivedi-Agnihotri, H***., Pandey, S., Chaturvedi, M., Stepniewski, T. M., Kawakami, K., Cao, Y., Laporte, S. A., Selent, J., Inoue, A. and Shukla, A. K. (2020) Key phosphorylation sites in GPCRs orchestrate the contribution of beta-Arrestin 1 in ERK1/2 activation. ***EMBO Reports***, e49886. (***Equal contribution/ Joint first author) (Impact factor: 9.421)**

iv. Baidya, M*., Kumari, P*., **Dwivedi-Agnihotri, H***., Pandey, S., Sokrat, B., Sposini, S., Chaturvedi, M., Srivastava, A., Roy, D., Hanyaloglu, A. C., Bouvier, M., and Shukla, A. K. (2020) Genetically encoded intrabody sensors report the interaction and trafficking of beta-arrestin 1 upon activation of G-protein-coupled receptors. *The* ***Journal of Biological Chemistry*****.** 295, 10153-10167. (***Equal contribution/ Joint first author) (Impact factor: 5.486)**

v. **Dwivedi-Agnihotri H**, Sarma P, Deeksha S, Kawakami K, Inoue A, Shukla AK. An intrabody sensor to monitor conformational activation of β-arrestins. **Methods Cell Biol.** 2022;169:267-278. doi: 10.1016/bs.mcb.2021.12.023.

vi. **Dwivedi-Agnihotri, H.**, Srivastava, A., and Shukla, A. K. (2020) Reversible biotinylation of purified proteins for measuring protein-protein interactions. ***Methods in Enzymology*****.** 633, 281-294

vii. **Dwivedi, H.,** Baidya, M., and Shukla, A. K. (2018) GPCR Signaling: The Interplay of Galphai and beta-arrestin. ***Current Biology*** 28, R324-R327 . **(Impact factor: 10.83)**

viii. **Dwivedi, H**., Singh, S. K., Chauhan, B. S., Gunjan, S., and Tripathi, R. (2016) Potential cerebral malaria therapy: intramuscular arteether and vitamin D co-administration. ***Parasitology*** **143**, 1557-1568. (**Impact factor: 3.243)**

ix. **Dwivedi H**. and Tripathi R (2018). Cerebral Malaria: Players in the Pathogenic Mechanism and Treatment Strategies. *Infectious diseases and your health*. Singapore: ***Springer Nature***; p.33-50.

Other Publications

x. Shiraishi Y, Kofuku Y, Ueda T, Pandey S, **Dwivedi-Agnihotri H**, Shukla AK, Shimada I. Biphasic activation of β-arrestin 1 upon interaction with a GPCR revealed by methyl-TROSY NMR. ***Nature Communications*****.** 2021 Dec 9;12(1):7158. doi: 10.1038/s41467-021-27482-3. **(Impact factor: 17.69)**

xi. Pandey S, Kumari P, Baidya M, Kise R, Cao Y, **Dwivedi-Agnihotri H**, Banerjee R, Li XX, Cui CS, Lee JD, Kawakami K, Maharana J, Ranjan A, Chaturvedi M, Jhingan GD, Laporte SA, Woodruff TM, Inoue A, Shukla AK. Intrinsic bias at non-canonical, β-arrestin-coupled seven transmembrane receptors. ***Molecular Cell***. 2021 Nov 18;81(22):4605-4621.e11. doi: 10.1016/j.molcel.2021.09.007. **(Impact factor: 19.33)**

xii. Che T, **Dwivedi-Agnihotri H**, Shukla AK, Roth BL. Biased ligands at opioid receptors: Current status and future directions. ***Science Signaling***. 2021 Apr 6;14(677):eaav0320. doi: 10.1126/scisignal.aav0320. **(Impact factor: 9.517)**

xiii. Min, K., Yoon, H. J., Park, J. Y., Baidya, M., **Dwivedi-Agnihotri, H.,** Maharana, J., Chaturvedi, M., Chung, K. Y., Shukla, A. K., and Lee, H. H. (2020) Crystal Structure of beta-Arrestin 2 in Complex with CXCR7 Phosphopeptide. ***Structure.*** 19:S0969-2126(20)30205-7. **(Impact factor: 5.871)**

xiv. Lee, Y., Warne, T., Nehme, R., Pandey, S., **Dwivedi-Agnihotri, H**., Chaturvedi, M., Edwards, P. C., Garcia-Nafria, J., Leslie, A. G. W., Shukla, A. K., and Tate, C. G. (2020) Molecular basis of beta-arrestin coupling to formoterol-bound beta1-adrenoceptor. ***Nature.*** **583**, 862-866 **(Impact factor: 69.504)**

xv. Goncharuk, M. V., Roy, D., Dubinnyi, M. A., Nadezhdin, K. D., Srivastava, A., Baidya, M., **Dwivedi-Agnihotri, H**., Arseniev, A. S., and Shukla, A. K. (2020) Purification of native CCL7 and its functional interaction with selected chemokine receptors. ***Protein Expression and Purification*** **171**, 105617. **(Impact factor: 2.025)**

xvi. Ghosh, E., **Dwivedi, H**., Baidya, M., Srivastava, A., Kumari, P., Stepniewski, T., Kim, H. R., Lee, M. H., van Gastel, J., Chaturvedi, M., Roy, D., Pandey, S., Maharana, J., Guixa-Gonzalez, R., Luttrell, L. M., Chung, K. Y., Dutta, S., Selent, J., and Shukla, A. K. (2019) Conformational Sensors and Domain Swapping Reveal Structural and Functional Differences between beta-Arrestin Isoforms**.** ***Cell Reports*** 28, 3287-3299 e3286. **(Impact factor: 9.995)**

xvii. Singh, S. K., **Dwivedi, H**., Gunjan, S., Chauhan, B. S., Pandey, S. K., and Tripathi, R. (2019) Potential role of arteether on N-methyl-D-aspartate (NMDA) receptor expression in experimental cerebral malaria mice and extension of their survival. *Parasitology* 146, 1571-1577. (**Impact factor: 3.243)**

xviii. Pandey, S., Li, X. X., Srivastava, A., Baidya, M., Kumari, P., **Dwivedi, H**., Chaturvedi, M., Ghosh, E., Woodruff, T. M., and Shukla, A. K. (2019) Partial ligand-receptor engagement yields functional bias at the human complement receptor, C5aR1. ***The Journal of Biological Chemistry*** 294, 9416-9429. (**Impact factor: 5.486)**

xix. Ranjan, R., **Dwivedi, H.,** Baidya, M., Kumar, M., and Shukla, A. K. (2017) Novel Structural Insights into GPCR-beta-Arrestin Interaction and Signaling. ***Trends in Cell Biol*****ogy 27**, 851-862 . **(Impact factor: 20.81)**

xx. Baidya, M., **Dwivedi, H.,** and Shukla, A. K. (2017) Frozen in action: cryo-EM structure of a GPCR-G-protein complex. ***Nature Structure and Molecular Biology*** 24, 500-502 . **(Impact factor: 18.36)**

xxi. Ghosh, E., Srivastava, A., Baidya, M., Kumari, P., **Dwivedi, H.**, Nidhi, K., Ranjan, R., Dogra, S., Koide, A., Yadav, P. N., Sidhu, S. S., Koide, S., and Shukla, A. K. (2017) A synthetic intrabody-based selective and generic inhibitor of GPCR endocytosis. ***Nature Nanotechnology*** 12, 1190-1198. **(Impact factor: 39.213)**

xxii. Singh, N., Shah, P., **Dwivedi, H.**, Mishra, S., Tripathi, R., Sahasrabuddhe, A. A., and Siddiqi, M. I. (2016) Integrated machine learning, molecular docking and 3D-QSAR based approach for identification of potential inhibitors of trypanosomal N-myristoyltransferase. ***Molecular Biosystems*** 12, 3711-3723 . (**Impact factor: 3.743).**

xxiii. Gunjan, S., Singh, S. K., Sharma, T., **Dwivedi, H**., Chauhan, B. S., Imran Siddiqi, M., and Tripathi, R. (2016) Mefloquine induces ROS mediated programmed cell death in malaria parasite: Plasmodium. ***Apoptosis*** **21**, 955-964. (**Impact factor: 4.677).**

xxiv. Dwivedi, P., Khatik, R., Chaturvedi, P., Khandelwal, K., Taneja, I., Raju, K. S., **Dwivedi, H**., Singh, S. K., Gupta, P. K., Shukla, P., Tripathi, P., Singh, S., Tripathi, R., Wahajuddin, Paliwal, S. K., Dwivedi, A. K., and Mishra, P. R. (2015) Arteether nanoemulsion for enhanced efficacy against Plasmodium yoelii nigeriensis malaria: an approach by enhanced bioavailability. ***Colloids Surface B Biointerfaces*** **126**, 467-475 . (**Impact factor: 5.268).**

xxv. Dwivedi, P., Khatik, R., Khandelwal, K., Srivastava, R., Taneja, I., Rama Raju, K. S., **Dwivedi, H.,** Shukla, P., Gupta, P., Singh, S., et.al, Mishra PR (2014). Self-nanoemulsifying drug delivery systems (SNEDDS) for oral delivery of arteether: pharmacokinetics, toxicity and antimalarial activity in mice. ***RSC Advances***, 4, 64905-64918. (**Impact factor: 4.036).**

xxvi. Tripathi, R., Rizvi, A., Pandey, S. K., **Dwivedi, H**., and Saxena, J. K. (2013) Ketoconazole, a cytochrome P(450) inhibitor can potentiate the antimalarial action of alpha/beta arteether against MDR Plasmodium yoelii nigeriensis. *Acta Tropica* **126**, 150-155. (**Impact factor: 3.222).**

xxvii. Pandey, S. K., **Dwivedi, H**., Singh, S., Siddiqui, W. A., and Tripathi, R. (2013) Antimalarial interaction of quinine and quinidine with clarithromycin. ***Parasitology*** **140**, 406-413 . (**Impact factor: 3.243)**

xxviii. Shukla, A. K., and **Dwivedi-Agnihotri, H**. (2020) Structure and function of beta-arrestins, their emerging role in breast cancer, and potential opportunities for therapeutic manipulation. ***Advances in Cancer Research***. 145,139-156.

xxix. Srivastava, A., Baidya, M., **Dwivedi-Agnihotri, H.**, and Shukla, A. K. (2020) Site-directed labeling of beta-arrestin with monobromobimane for measuring their interaction with G protein-coupled receptors. ***Methods inEnzymology*** 633, 271-280.

xxx. Kumari, P., **Dwivedi, H**., Baidya, M., and Shukla, A. K. (2019) Measuring agonist-induced ERK MAP kinase phosphorylation for G-protein-coupled receptors**.** ***Methods in Cell Biology***. **149**, 141-153