

BIOGRAPHICAL SKETCH

Ravindra Thakkar

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(a) Personal Statement

The goal of the proposed research is to validate the structure of therapeutic peptide on the surface of spike protein subunit S1 by CryoEM single particle analysis and compare the intermolecular interaction with the computationally predicted ensembles. This data will be helpful to develop molecular modelling algorithms and set-up the benchmark. This professional training program will boost my contribution to design novel therapeutic molecules. My present expertise involves morphological study of cells, cell-organelles and bio-molecules at room temperature electron microscopy and my prior experience on cryo electron microscopy will be advantageous for this training program.

(b) Education & Training

Kansas State University	Manhattan KS (USA)	Physiology	Ph.D., 2018 – Present
Sardar Patel University	Vidhyanagar, Gujarat (INDIA)	Bio-Technology	M.S., 2008
Sardar Patel University	Vidhyanagar, Gujarat (INDIA)	Bio-Chemistry	B.S., 2006

(c) Research & Professional Experience

2021 – present	Scientist, St Jude Children's Research Hospital, Memphis TN (USA)
2014 – 2021	Associate Scientist, Kansas State University, Manhattan KS (USA)
2012 – 2014	Sr. Scientific Assistant, NIMHANS, Bangalore, Karnataka (INDIA)
2008 – 2012	Technical Assistant, Indian Institute of Technology, Mumbai, Maharashtra (INDIA)

(d) Talk and research presentations

1. Computational design of peptides for cancer immunotherapy, American Chemical Society, Spring 2021 (virtual event) – (2021)
2. *de novo* design of therapeutic peptides for cancer immunotherapy, Phi Zeta Research Day, Kansas State University, Manhattan KS (USD) – (2020)
3. Computational design of peptides for selective graphene binding, Phi Zeta Research Day, Kansas State University, Manhattan KS (USD) – (2019)
4. National workshop on advances in instrumental techniques for nanomaterial characterization organized by International and Inter University center for Nanoscience and Nanotechnology, Mahatma Gandhi University, Kottayam, Kerala (INDIA) – (2014)
5. An Introduction to Electron Microscopy as a diagnostic tool, organized by NIMHANS and Interlaboratory Quality Assessment, Bangalore, Karnataka (INDIA) – (2014)
6. Fundamental and Applications of Electron Microscopy, Annual Hands on workshop in Neurochemistry and Electron Microscopy organized by NIMHANS, Bangalore, Karnataka (INDIA) – (2013)
7. Epidermolysis Bullosa – A diagnostic approach by ultrastructural studies” in International conference on Electron Microscopy and XXXIV Annual meeting of EMSI at Kolkata, West Bengal (INDIA) – (2013)

8. Ultra-structural Diagnosis of Neuronal Ceroid Lipofuscinosis – Skin Biopsy, in The XXXIII annual meet of Electron Microscopy Society of India (EMSI) at IISc, Bangalore, Karnataka (INDIA) – (2012)
9. “Characterization of Fe-Co catalyst for CNTs Synthesis” in International Conference on advances in Electron Microscopy and related techniques Organized by EMSI at BARC, Mumbai, Maharashtra (INDIA) – (2010)

(e) Publications

1. Uhlig, Manuel R and Benaglia, Simone and Thakkar, Ravindra and Comer, Jeffrey and Garcia, Ricardo (2021) Atomically resolved interfacial water structures on crystalline hydrophilic and hydrophobic surfaces. *Nanoscale* doi: [10.1039/D1NR00351H](https://doi.org/10.1039/D1NR00351H)
2. Ishiguru S, Robben N, Burghart R, Cote P, Greenway S, Thakkar R, Upreti D, Ayaka N, Suzuki K, Comer J, Tamura M (2020) Cell wall membrane fraction of *Chlorella sorokiniana* enhances host anti-tumor immunity and inhibits colon carcinoma growth in mice. *Integr Cancer Ther* 19:1–10. doi: [10.1177/1534735419900555](https://doi.org/10.1177/1534735419900555)
3. Ishiguro, Susumu and Upreti, Deepa and Robben, Nicole and Burghart, Riley and Loyd, Mayme and Ogun, Damilola and Le, Tran and Delzeit, Jennifer and Nakashima, Arashi and Thakkar, Ravindra and Ayaka, Nakashima and Keng, Suzukib and Jeffrey, Comer and Masaki, Tamura(2020) Water extract from (*E*)*uglenagracilis* prevents lung carcinoma growth in mice by attenuation of the myeloid-derived cell population. *Biomedicine & Pharmacotherapy* 127:110166 doi: [10.1016/j.biopha.2020.110166](https://doi.org/10.1016/j.biopha.2020.110166)
4. Azhagiya Singam ER, Zhang Y, Magnin G, Miranda-Carvajal I, Coates L, Thakkar R, Poblete H, Comer J (2019) Thermodynamics of adsorption to graphenic surfaces from aqueous solution. *J Chem Theory Comput* 15(2):1302–1316. doi: [10.1021/acs.jctc.8b00830](https://doi.org/10.1021/acs.jctc.8b00830)
5. Nguyen, Tuyen Duong Thanh and Pitchaimani, Arunkumar and Ferrel, Colin and Thakkar, Ravindra and Aryal, Santosh. (2018) Nano-confinement-driven enhanced magnetic relaxivity of SPIONs for targeted tumor bioimaging *Nanoscale* 10(1):284–294 doi: [10.1039/C7NR07035G](https://doi.org/10.1039/C7NR07035G)
6. Riviere JE, Jaber-Douraki M, Lillich J, Azizi T, Joo H, Choi K, Thakkar R, Monteiro-Riviere NA. (2018) Modeling gold nanoparticle biodistribution after arterial infusion into perfused tissue: effects of surface coating, size and protein corona. *Nanotoxicology* 12(10):1093-1112 doi: [10.1080/17435390.2018.1476986](https://doi.org/10.1080/17435390.2018.1476986)
7. Hoffman, Amanda and Wu, Xiaotong and Wang, Jianjie and Brodeur, Amanda and Thomas, Rintu and Thakkar, Ravindra and Hadi, Halena and Glaspell, Garry P and Duszynski, Molly and Wanekaya, Adam and others (2017) Two-Dimensional Fluorescence Difference Spectroscopy of ZnO and Mg Composites in the Detection of Physiological Protein and RNA Interactions. *Materials* 10(12):1430 doi: [10.3390/ma101214305](https://doi.org/10.3390/ma101214305)
8. Dhinakaran, Sathiyabama and Kumar, Rashmi Santhosh and Thakkar, Ravindra and Narayanappa, Gayathri (2016) Coexistence of central nucleus, cores, and rods: Diagnostic relevance *Journal of Indian Academy of Neurology* 19(2):201–204 doi: [10.4103/0972-2327.176861](https://doi.org/10.4103/0972-2327.176861)
9. Asha, Unchagi and Mahadevan, Anita and Sathiyabama, Dhinakaran and Ravindra, Thakkar and Sagar, BK Chandrashekar and Bhat, Dhananjaya Ishwar and Aravinda, Hanumantapura Ramalingaiah and Pandey, Paritosh and Vilanilam, George C (2015) Lack of IDH1 mutation in astroblastomas suggests putative origin from ependymoglia cells? *Neuropathology* 35(4):303–311 doi: [10.1111/neup.12194](https://doi.org/10.1111/neup.12194)
10. D. Sathiyabama, U. Asha, S. D. Shwetha, R. Thakkar, J. S. Dil, Vani Santosh (2014) Crooke's

- cell adenoma of the pituitary: A histological, immunocytochemical, and electron microscopic study of a rare case. *Neurology India* 62(2):216–217 doi: [10.4103/0028-3886.132435](https://doi.org/10.4103/0028-3886.132435)
11. Menon, Ramshekhar N and Jagtap, Sujith and Thakkar, Ravindra and Narayanappa, Gayathri and Nair, Muralidharan (2013) Bilateral symmetrical globus pallidus lesions following disulfiram ingestion *Neurology India* 61(5):539–40 doi: [10.4103/0028-3886.121944](https://doi.org/10.4103/0028-3886.121944)
 12. Ramshekhar N Menon, Sujith Jagtap, Ravindra Thakkar, Gayathri Narayanappa, Muralidharan Nair (2013) Mucopolidosis and progressive myoclonus epilepsy: A distinctive phenotype. *Neurology India* 61(5):537–539 doi: [10.4103/0028-3886.121943](https://doi.org/10.4103/0028-3886.121943)
 13. Mrinal Singha, Manju Tiwari, Ravi Thakkar, Sanjay Kumar (2011) Applications of RNAi technologies in pharmaceutical fields. *International journal of pharmaceutical sciences review and research* 125(1):5135–140
 14. Argal, Mohar Singh and Kumar, Sanjay and Choudhary, Hotam Singh and Thakkar, Ravindra M and Verma, Santosh K and Seniya, Chandrabhan (2011) The efficacy of (*M*)*urrayakoenigii* leaf extract on some bacterial and a fungal strain by disc diffusion method. *Journal of Chemical and Pharmaceutical Research* 3(5):697–704
 15. Dwivedi, Sudhanshu and Thakkar, Ravindra and Upadhyay, Vijay and Kumar, Sanjay (2011) Isolation and characterization of actinomycetes producing antimicrobial substance against human pathogenic bacteria *Journal of Pharmacy Research* 4(11):4066–406