
VISION STATEMENT:

I believe in the applications of advanced Life Sciences specifically, the Molecular Biotechnology for the betterment of the society by igniting enthusiasm among the students in the academia towards high quality Biomedical and Biotechnology research. I strongly believe that students are capable of novel ideas towards patents and start-ups with the right guidance through proper mentorship. My goal is “students first” and train them as future Scientific Entrepreneurs.

EDUCATION:

2004-2009: Ph.D. Double major in Biochemistry & Molecular Biology with a **minor in Pharmacology**, Department of Biochemistry & Molecular Biology, **Wayne State Medical School**, Detroit, MI. **USA**.

2000-2003: M.S. Major in Molecular Biotechnology with a **minor in Genetic Engineering**, Department of Biological Sciences, **Wayne State University**, Detroit, MI. **USA**.

1998-2000: M.Sc. Major in Biotechnology, Dept. of Biotechnology, **Andhra University**, Visakhapatnam, AP. **India**.

1995-1998: B.Sc. Major in Biology and Chemistry, **Andhra University**, Visakhapatnam, AP. **India**.

SUMMARY OF ACCOMPLISHMENTS:

- 1. Research:** Worked on more than 50 research projects funded by the U.S. National Institutes of Health; Canadian Institutes of Health Research; NSERC-Canada; Health Canada; DBT-India and Startup funds.
- 2. Positions:** Scientist-F (DBT-India), Structural Biology at inStem, Bengaluru, India; Cancer Research Training (CRT) fellow at the U.S. National Cancer Institute; Founder of startup companies.
- 3. Teaching:** Professor of Practice (Biotechnology), Guest Faculty (Pharmaceutical Biotechnology) & Visiting Professor (Zoology) at Andhra University, India.
- 4. Startups:** Two startups: (i) The Yedidi Institute of Discovery and Education (TyiDE)-Toronto in Canada and (ii) The Center for Advanced-Applied Biological Sciences & Entrepreneurship (TCABS-E) in Rajamahendravaram/Visakhapatnam, India.
- 5. Publications:** PubMed visibility: 26 articles; Without PubMed visibility: 56 articles. Total: 82 articles.
- 6. Patents:** Indian patents filed: 17.
- 7. Scientific Review:** Reviewed multiple research articles in peer-reviewed international journals.
- 8. Invited talks:** More than 50 national and international invited talks given in India, USA and Canada.
- 9. Mentoring:** Mentored nearly 1,000 students in research and laboratory training in India, USA and Canada.
- 10. Collaborations:** Initiated 20 national and international (USA, Canada, UK & Japan) research collaborations.
- 11. Awards & Honors:** Recipient of multiple awards and honors in the USA, Canada and India.
- 12. Workshops:** Organized multiple conferences, symposia and colloquia in the USA and India.
- 13. Structures in protein data bank:** Deposited 36 X-ray crystal structures in the protein data bank.

DETAILS:**MAJOR MULTIDISCIPLINARY-RESEARCH ACCOMPLISHMENTS:**

2000-2024: TCABS-E, Visakhapatnam, AP. India.

- **Discovery of Novel Antibiotics:** MA01027, the first antibiotic active against antibiotic-resistant *Helicobacter pylori*, a bacterium that causes gastric ulcers/cancers. Computer-aided virtual screening was used to identify MA01027.
 - Manuscript under review for publication, **2024**.
 - Indian Patent No. **202141058294**.

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- **Yogurt Vaccine:** YoVac, the first edible probiotic vaccine for COVID-19 prepared using genetically engineered *Lactobacillus* bacteria that is capable of producing pieces of coronavirus spike protein as antigens when consumed.
 - Research article published in [Biochem Biophys Res Commun.](#), 2024.
 - Indian Patent No. **202341008573**.
 - Indian Patent No. **202341074497**.
 - Indian Patent No. **202441062616**.
 - **Cloverleaf plot for COVID-19 vaccine efficacy:** Cloverleaf plot, the first multivariate plot hand drawn to generate an atlas for instantaneous prediction of COVID-19 vaccine efficacy against different strains of SARS CoV-2.
 - Research article published in [Medical Research Archives](#), 2024.
 - Copyright filing in progress...
 - **Protein liquid-liquid phase separation (LLPS) vs. COVID-19 vaccine efficacy:** The first proof that the spike protein receptor binding domain of SARS CoV-2 can exhibit LLPS behavior *in vitro* that can affect COVID-19 vaccine efficacy.
 - Manuscript under review for publication, 2024.
 - **Early diagnosis of atherosclerosis:** ArtEspy, the first zymogram-based *in vitro* mobile diagnostic kit that can identify blood-based biomarkers for the early detection of atherosclerosis to avoid cardiac bypass surgeries, stents and other invasive medical procedures.
 - Manuscript in preparation, 2024.
 - Indian Patent No. **202341017482**.
 - Indian Patent No. **202341073807**.
 - **Stem Cell Biology:** Menstrunoids, the first insulin producing organoids prepared by the isolation and purification of endometrial stem cells from the menstrual waste discharge.
 - Manuscript in preparation, 2024.
 - Indian Patent No. **202341074826**.
 - **RNA interference-based therapeutic for Dengue fever:** DensiT-4S, the first siRNA-based therapeutic that is efficacious against all four serotypes of Dengue virus.
 - Manuscript in preparation, 2024.
 - Indian Patent No. **202341074499**.
 - **CRISPR-based diagnostic kit for HIV:** CHiKit-SA, the first diagnostic kit for the detection of latent HIV-1 infections in patient blood samples.
 - Manuscript in preparation, 2024.
 - Indian Patent No. **202341074827**.
 - **PROTAC-based anti-HIV/AIDS therapeutic:** CapsiTAC, the first proteolysis-targeting chimera (PROTAC)-based anti-HIV/AIDS therapeutic.
 - Manuscript in preparation, 2024.
 - Indian Patent No. **202341074825**.
 - **Nutraceutical antibiotic formulation from broccoli:** Broccophane, the first natural and nutraceutical antibiotic formulation prepared from raw broccoli extracts.
 - Manuscript in preparation, 2024.
 - Indian Patent No. **202441056118**.
 - **RNA stability vs. COVID-19 vaccine efficacy:** *In silico* prediction of mRNA stability for the mutants of coronavirus causing COVID-19 to help the future vaccine design for better results in avoiding pandemics.
 - Published in [Vaccines](#), 2022.
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- **Biodegradable mosquito larvicidal formulation:** Caricin, the first biodegradable larvicidal formulation containing papaya latex and ricin extracted from castor seeds.
 - Manuscript in preparation, **2024**.
 - Indian Patent No. **202441072697**.
 - **Plant-based edible insulin:** EdibleIns, the first human insulin expressed in plants that is edible through raw vegetables and fruits.
 - Manuscript in preparation, **2024**.
 - Indian Patent No. **202441061138**.
 - Indian Patent No. **202441061139**.
 - **Nutraceutical formulation for PCOS treatment:** Aromat, the first nutraceutical formulation prepared from *F. religiosa* leaf extracts for PCOS treatment.
 - Manuscript in preparation, **2024**.
 - Indian Patent No. **202441061137**.

The Institute for Stem Cell Sciences and Regenerative Medicine, Bengaluru, KA. India.

- **In-cell NMR:** A novel technique to evaluate the physiological conformational changes in the BRCA1 protein was established as an extension to the traditional NMR technique.

University of Toronto, Toronto, ON. Canada.

- **GPCR Signaling:** Structural-basis for novel molecular interactions between GPCR and β -arrestin in the context of photoreceptors.
 - Research article published in **J Mol Biol.**, **2018**.
 - X-ray crystal structure deposited in the protein data bank (PDB ID): **6BK9**.
- **Protein Homeostasis:** Comparative analysis of molecular basis for differences in prokaryotic and eukaryotic proteasomes in the maintenance of cellular protein homeostasis.
 - Review article published in **Front Mol Biosci.**, **2017**.
- **Eukaryotic proteasomal dynamics:** Molecular insights into the proteasomal dynamics that help the yeast cells in the survival of starvation conditions and its implications in human health.
 - Review article published in **Crit Rev Biochem Mol Biol.**, **2016**.

National Institutes of Health, U.S. Federal Govt., Bethesda, MD. USA.

- **Blood-Brain Barrier:** Exploration of fluorine-chemistry to enhance the bioavailability of small molecule HIV-1 protease inhibitors across the blood-brain barrier.
 - Research article published in **Antimicrob Agents Chemother.**, **2022**.
 - X-ray crystal structures deposited in the protein data bank (PDB IDs): **6UWB** and **6UWC**.
- **Ultra-high Potency Drugs:** Molecular insights into the HIV-1 protease inhibitors with an unprecedented ottomolar to picomolar potency.
 - Research article published in **eLife.**, **2017**.
 - X-ray crystal structures deposited in the protein data bank (PDB IDs): **5TYR** and **5TYS**.
- **Solvent Mapping:** Novel small molecule inhibitors that were designed using solvent mapping with high potency against multidrug-resistant variants of HIV-1 protease.
 - Research article published in **Springer Nature Sci Rep.**, **2017**.
 - X-ray crystal structure deposited in the protein data bank (PDB ID): **5V4Y**.

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- **Structure-Activity Relationship:** Design, synthesis and evaluation of novel HIV-1 protease inhibitors by exploring structure-activity relationship based on the active site architecture.
 - Research article published in **J Virol.**, 2015.
 - X-ray crystal structures deposited in the protein data bank (PDB IDs): **4COK**, **4CON**, **4COO** and **4COP**.
 - **Structural Basis for Drug-Resistance:** Structure-Function evaluation of novel HIV-1 protease inhibitors against wild type and multidrug-resistant strains of HIV-1.
 - Research article published in **Antimicrob Agents Chemother.**, 2014.
 - X-ray crystal structures deposited in the protein data bank (PDB IDs): **4NJS**, **4NJT**, **4NJU** and **4NJV**.
 - **Drug Bioavailability:** Design, synthesis and biological evaluation of HIV-1 protease inhibitors with improved bioavailability.
 - Research article published in **Antimicrob Agents Chemother.**, 2013.
 - X-ray crystal structures deposited in the protein data bank (PDB IDs): **4HLA**, **4I8W** and **4I8Z**.

Wayne State University, School of Medicine, Detroit, MI. USA.

- **Structure-Based Drug Design:** Structure-based design, synthesis and biochemical evaluation of potent peptidomimetic inhibitors of multidrug-resistant HIV-1 protease variants.
 - Research article published in **Biochem Biophys Res Commun.**, 2013.
- **Drug-repurposing:** Repurposing nanomolar antimalarial compounds as inhibitors of multidrug-resistant HIV-1 protease variants.
 - Research article published in **Biochem Biophys Res Commun.**, 2012.
 - X-ray crystal structures deposited in the protein data bank (PDB IDs): **3R0W** and **3R0Y**.
- **Drug-resistance:** Molecular mechanistic insights into multidrug-resistance of HIV-1 protease inhibitors to improve treatment regimens.
 - Research article published in **Acta Crystallogr D Biol Crystallogr.**, 2011.
 - X-ray crystal structures deposited in the protein data bank (PDB IDs): **3OQ7**, **3OQA**, **3OQD** and **3PJ6**.
- **Drug Discovery:** Design, synthesis and evaluation of highly potent low nanomolar inhibitors of malarial Plasmeppsin-II as antimalarial compounds.
 - Research article published in **J Med Chem**, 2010.
- **Transcriptomics:** Discovery of the differential expression of bone marrow stromal cell antigen 2 targeted by the transcription factor GATA1 in children with acute megakaryocytic leukemia with Down syndrome and their sensitivity to chemotherapy.
 - Research article published in **Blood**, 2006.

TEACHING, MENTORING & SUPERVISING EXPERIENCE:

2023-Present: Professor of Practice: Department of Biotechnology, College of Science and Technology, **Andhra University**, Visakhapatnam, AP. **India**.

- Live in class teaching for first year (65 students, 2023-25 batch) and second year (65 students, 2022-24 batch) students in the Biotechnology masters program.
 - BT 1.1 Cell Biology & Evolution (Theory/Lecture).
 - BT 1.5 Cell Biology & Microbiology (Lab).
 - BT 2.5 Molecular Biology & Genetic Engineering (Lab).
 - BT 3.6 Animal Cell Culture & Environmental Biotechnology (Lab).
 - BT 4.2 Bioinformatics & Biostatistics (Theory/Lecture).

2021-Present: Visiting Professor: Department of Zoology, College of Science and Technology, **Andhra University**, Visakhapatnam, AP. **India**.

- Live in class & online teaching for students in the Zoology masters program.
 - Z103: Tools and Techniques for Biology (Theory/Lecture)
 - Batch of 65 students, 2021-23.
 - Batch of 65 students, 2022-24.
 - Z116: Biotechnology and Applied Biology (Theory/Lecture)
 - Batch of 65 students, 2020-22.

2021-Present: Guest Faculty: Department of Pharmaceutical Biotechnology, College of Pharmaceutical Sciences, **Andhra University**, Visakhapatnam, AP. **India**.

- Live in class & online teaching for students in the Pharmaceutical Biotechnology masters program.
 - MPB 104T: Advanced Pharmaceutical Biotechnology (Theory/Lecture)
 - Batch of 12 students, 2021-23.
 - Batch of 8 students, 2022-24.
 - Batch of 6 students, 2023-25.
 - MPB 203T: Bioinformatics and Computational Biotechnology (Theory/Lecture)
 - Batch of 12 students, 2021-23.
 - Batch of 8 students, 2022-24.
 - Batch of 6 students, 2023-25.

2019-Present: Founder, Principal Scientist & Lead Instructor: The Center for Advanced-Applied Biological Sciences & Entrepreneurship (**TCABS-E**), a start-up research laboratory in Rajamahendravaram and Visakhapatnam, AP. **India**.

- Mentored and trained more than **500 students** (both U.G. and P.G. from Rajamahendravaram and Visakhapatnam) in practical laboratory skills in Life Sciences and Scientific Entrepreneurship.
- Designed more than **200 student projects** and guided them through the projects.
- Delivered several **Scientific awareness seminars** in local colleges.
- Published several **research articles** based on student projects.
- Established a pipeline of more than **30 start-up ideas** to encourage the U.G. and P.G. students based on their projects designed by TCABS-E.
- Started and established an interdisciplinary scientific journal, **TCABSE-J** (ISSN: **2583-2557**).
- Conducted several **scientific meetings, symposia** on behalf of TCABS-E.
- Conducted and successfully completed the online Computational Biology Challenge (**TOCC-2020**).

2018-2019: Senior Scientist-F & Team Lead: Centre for Chemical Biology and Therapeutics (CCBT), Institute for Stem Cell Science and Regenerative Biology (**inStem**), Bengaluru, KA. **India**.

- Trained and mentored **13 U.G. and P.G. students** on various projects.
- Supervised **2 postdoctoral fellows** on Structural Biology projects.

2015-2017: Research Associate: Department of Biochemistry, School of Medicine, University of Toronto, Toronto, ON. **Canada**.

- Trained and mentored **6 U.G. and P.G. students** in biomedical research projects. Published **3 research articles**.
- Co-guided a doctoral student on a project titled: Structural analysis of spin labeled lysozyme mutants. (Published in **Biochemistry**, 2016).
- Co-guided a research masters student on a project titled: *In vitro* enrichment of proteasome storage granules from cell lysates using sucrose gradients. (Published in **Mol Biol Cell**, 2017).

2009-2015: Visiting Fellow: HIV & AIDS Malignancy Branch, National Cancer Institute, Bethesda, MD. **USA**.

- Trained and mentored **2 high school** and **2 U.G. students** in biomedical research projects. Published **8 research articles** and **19 X-ray crystal structures** in protein data bank (www.rcsb.org).

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- Co-guided a doctoral student on a project titled: Co-crystallization of wild type and mutant HIV-1 protease variants with inhibitors. (Published in **eLife**, 2017).

2004-2009: Research Assistant: Department of Biochemistry and Molecular Biology, School of Medicine, Wayne State University, Detroit, MI. **USA.**

- Co-guided a doctoral student on a project titled: Structural analysis of a multidrug-resistant clinical isolate-769 HIV-1 protease. (Published in **Biochem Biophys Res Commun.**, 2013).
- Co-guided a doctoral student on a project titled: NMR-HSQC peak assignments for ¹⁵N-labeled multidrug-resistant clinical isolate-769 HIV-1 protease. (Published in **Biochem Biophys Res Commun.**, 2013).
- Mentored a doctoral student for a seminar presentation on a topic related to Computational Biology.

2001-2003: Teaching Assistant: Department of Biological Sciences, Wayne State University, Detroit, MI. **USA.**

- Live in class teaching for students in the Biological Sciences bachelors program.
 - BIO 1510: Basic Life Mechanisms (Lab)
 - Spring/Summer 2001 & Fall 2001.
 - Winter 2002, Spring/Summer 2002 & Fall 2002.
 - Winter 2003.
 - BIO 3070: Genetics (Lab)
 - Winter 2001.

EMPLOYMENT HISTORY

India:

- **Andhra University:** Part-time faculty to teach P.G. students **2021 to present.**
 - Package: ₹13,000/month.
- **TCABS-E, Rajahmundry & Visakhapatnam:** Founder of TCABS-E from **2019 to present.**
 - Package: Self financed.
- **inStem, Bengaluru:** Scientist-F, Structural Biology Team Lead, the Centre for Chemical Biology and Therapeutics from **2018 to 2019.**
 - Package: ₹1.25 Lakhs/month.

Canada: University of Toronto: Research Associate, Department of Biochemistry from **2015 to 2017.**

- Package: ₹2.2 Lakhs/month + Medical Insurance.

United State of America:

- **National Institutes of Health (NIH):** Visiting Fellow, HIV & AIDS Malignancy Branch, Center for Cancer Research, National Cancer Institute from **2009 to 2015.**
 - Package: ₹4.85 Lakhs/month + Medical Insurance.
- **Wayne State Medical School:** Research Assistant, Department of Biochemistry from **2004 to 2009.**
 - Package: ₹2.2 Lakhs/month + Tuition fee worth ₹1.66 Lakhs + Medical Insurance.
- **Henry Ford Health System:** Laboratory Technician, Department of Dermatology from **2003 to 2004.**
 - Package: ₹2.1 Lakhs/month + Medical Insurance.
- **Wayne State University, Detroit:** Teaching Assistant, Dept of Biological Sciences from **2001 to 2003.**
 - Package: ₹2.0 Lakhs/month + Tuition fee worth ₹1.66 Lakhs + Medical Insurance.
- **Wayne State University, Detroit:** Laboratory Assistant, Department of Biological Sciences from **2000 to 2001.**
 - Package: ₹46,000/month + Medical Insurance.

FELLOWSHIPS, AWARDS & HONORS

2020-Present:

- **Prolific Inventor Award** received from the Vice Chancellor of Andhra University, Visakhapatnam, AP, **India** for filing the highest number of patent applications in 2023-24.

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- **Felicitation honor** received from the Vice Chancellor of JNTU, Kakinada, AP, India for delivering an innovation seminar to the pharmacy students as a part of the Continuing Education Program (CEP).
 - **Visiting Professor** in the department of Zoology, Andhra University, Visakhapatnam, AP, **India**.
 - **Felicitation**, guest speaker for the national pharmacy week, College of Pharmaceutical Sciences, Andhra University, Visakhapatnam, AP, **India**.

2015-2020:

- **Guest of honor** at the **felicitation** ceremony for delivering the “**Popular lecture**” sponsored by the **Dept. of Biotechnology, Govt. of India**, organized by the Garden City University, Bengaluru, KA, **India**.
- **Guest of honor** at the **felicitation** ceremony for **highly accomplished alumnus** of Govt. College organized by the department of Chemistry, **Govt. College. Rajahmundry, AP, India**.
- Received an **honorary plaque** at the **National Workshop on Biomass to Bioenergy** as resource person to explain the role of **Genetic Engineering & Biotechnology** in the production of carbon neutral biofuels. **Govt. College. Rajahmundry, AP, India**.
- Received an **honorary plaque** for National seminar on **COVID-19 treatments**. Krishna University, Machilipatnam, AP, **India**.
- Received an **honorarium** for presenting the **Structure-based Drug-design** methodology to P.G. students at **GITAM University** as the alumnus of the same. Visakhapatnam, AP, **India**.
- Received an **honorarium** for presenting the **Genetic Engineering** National seminar at DNR College. Bhimavaram, AP, **India**.
- **Best communication skills** in sales, marketing and customer relations, *Tim Hortons*, Toronto, ON, **Canada**.

2009-2015:

- The prestigious “**INTRAMURAL CANCER RESEARCH TRAINING AWARD**” from the **U.S. Federal Govt.** executed at the HIV & AIDS Malignancy Branch, Center for Cancer Research, National Cancer Institute, National Institutes of Health, Bethesda, MD. **U.S.A.**
 - May 2009 to April 2015.
- Panelist, invited by the NIH-Division of International Services to represent the intramural Visiting Fellows to the extramural community and the U.S. federal government Science policy makers. Bethesda, MD. **U.S.A.**
- **Crystal structure** of wild type HIV-1 protease in complex with darunavir (PDB ID: 4HLA, Yedidi *et. al.*) was highlighted on the cover page of the Protein Data Bank annual report – 2013. Bethesda, MD. **U.S.A.**
- Received an **honorary plaque** at the 2013-National Cancer Institute-Fellows and Young Investigators’ Colloquium for planning and organizing a workshop titled “International Opportunities and Visa Issues”. Frederick, MD. **U.S.A.**
- **Best oral presentation award** at the Mid Atlantic Graduate Student Symposium in **Medicinal Chemistry** – 2008, Eugene Applebaum College of Pharmacy and Health Sciences, **Wayne State University**. Detroit, MI. **U.S.A.**

2004-2009:

- The “**INTRAMURAL RESEARCH ASSISTANT AWARD**” from the Department of Biochemistry and Molecular Biology, **Wayne State Medical School**, Detroit, MI. **U.S.A.**
 - September 2004 to April 2009.

2001-2003:

- The “**TEACHING ASSISTANT AWARD**” from the Department of Biological Sciences, **Wayne State University**, Detroit, MI. **U.S.A.**
 - January 2001 to April 2003.

SELECTED PUBLICATIONS:

1. Vissapragada, M., Aggunna, M., Tallapalli, M., Mandugula, H., Devandla, A., Yekula, A., Malapati, A., Bonala, S., Addala, S., Gudapati, S. and **Yedidi, R. S.*** *In silico* prediction of COVID-19 vaccine efficacy based on the strain-specific structural deviations in the SARS CoV-2 spike protein receptor binding domain. **Medical Research Archives** Vol. 12, No. 9. **2024**. (*Corresponding author and Principal Investigator).
2. Vissapragada, M., Addala, S., Aggunna, M., Sodasani, M., Grandhi, A.V.K.S. and **Yedidi, R. S.*** Leveraging the potential of bacterial lateral gene transfer in boosting the efficacy of an edible probiotic prototype yogurt vaccine for COVID-19. **Biochemical and Biophysical Research Communications** Vol. 29, Issue: 734, 150622. **2024**. (*Corresponding author and Principal Investigator).
3. Addala, S., Vissapragada, M., Aggunna, M., Mukala, N., Lanka, M., Gampa, S., Sodasani, M., Chintalapati, J., Kamidi, A., Veeranna, R. P., **Yedidi, R. S.*** Success of Current COVID-19 Vaccine Strategies vs. the Epitope Topology of SARS-CoV-2 Spike Protein-Receptor Binding Domain (RBD): A Computational Study of RBD Topology to Guide Future Vaccine Design. **Vaccines**. **2022**; 10(6):841. (*Corresponding author).
4. Amano, M., **Yedidi, R. S.**, Salcedo-Gomez, P. M., Hayashi, H., Hasegawa, K., Martyr, C. D., Ghosh, A. K., Mitsuya, H. Fluorine Modifications Contribute to Potent Antiviral Activity against Highly Drug-Resistant HIV-1 and Favorable Blood-Brain Barrier Penetration Property of Novel Central Nervous System-Targeting HIV-1 Protease Inhibitors *In Vitro*. **Antimicrob Agents Chemother.**, 66(2):e0171521, **2022**. (Related PDB IDs: **6UWB** and **6UWC**).
5. Amano, M., Salcedo-Gomez, P. M., **Yedidi, R. S.**, Zhao, R., Hayashi, H., Hasegawa, K., Nakamura, T., Martyr, C. D., Ghosh, A. K., Mitsuya, H. Novel central nervous system (CNS)-targeting protease inhibitors for drug-resistant HIV infection and HIV-associated CNS complications. **Antimicrob Agents Chemother.**, 63:(7), pii:e00466-19, **2019**. (Related PDB IDs: **6DOE** and **6DOD**).
6. Sasidharan, P., Balo, A. R., Enekel, C., **Yedidi, R. S.*** Comparative *in silico* inter-spin distance analysis of IDSL spin labels modeled on lysozyme mutants against experimentally determined DEER distance measurements. **Springer LNCS**, Conference Proceedings **2018**. (*Corresponding author).
7. Bandyopadhyay, A., VanEps, N., Eger, B. T., Rauscher, S., **Yedidi, R. S.**, Moroni, T., West, G. M., Robinson, K. A., Griffin, P. R., Mitchell, J. A., Ernst, O. P. A novel polar core and weakly fixed C-tail in squid arrestin provide new insight into interaction with rhodopsin. **J Mol Biol.**, 430:4102-4118, **2018**. (Related PDB ID: **6BK9**).
8. Aoki, M., Hayashi, H., Kalapala, V. R., Das, D., Higashi-Kuwata, N., Bulut, H., Aoki-Ogata, H., Takamatsu, Y., **Yedidi, R. S.**, Davis, D. A., Hattori, S-I., Nishida, N., Hasegawa, K., Takamune, N., Nyalapatla, P. R., Osswald, H. L., Yarchoan, R., Misumi, S., Ghosh, A. K., Mitsuya, H. A Novel Protease Inhibitor Overcomes HIV-1 Resistance with Unprecedented Potency. **eLife**, ;6. pii: e28020. doi: 10.7554/eLife.28020, **2017**. (Related PDB IDs: **5TYR** and **5TYS**).
9. Amano, M., Salcedo-Gomez, P. M., **Yedidi, R. S.**, Delino, N. S., Nakata, H., Nakamura, T., Kalapala, V. R., Ghosh, A. K., Mitsuya, H. GRL-09510, a unique bridged-Tp-THF derivative ligand-containing HIV-1 protease inhibitor, maintains its favorable antiviral activity against highly-drug-resistant HIV-1 variants in vitro. **Springer Nature Scientific Reports**, 7(1):12235. doi: 10.1038/s41598-017-12052-9, **2017**. (Related PDB ID: **5V4Y**).
10. Gu, Z. C., Wu, E., Sailer, C., Jando, J., Styles, E., Eisenkolb, I., Kuschel, M., Bitschar, K., Wang, X., Huang, L., Vissa, A., Yip, C. M., **Yedidi, R. S.**, Friesen, H., & Enekel, C. (2017). Ubiquitin orchestrates proteasome dynamics between proliferation and quiescence in yeast. **Molecular biology of the cell**, 28(19), 2479–2491, **2017**.

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11. **Yedidi, R. S.**, Wendler, P., Enenkel, C. AAA-ATPases in protein degradation. **Front. Mol. Biosci.** 4:42, doi: 10.3389/fmolb.2017.00042, **2017**.
 12. **Yedidi, R. S.**, Fatehi, A., Enenkel, C. Proteasome dynamics between proliferation and quiescence stages of *Saccharomyces cerevisiae*. **Crit. Rev. Biochem. Mol. Biol.** 51:497-512, **2016**.
 13. Amano, M., Salcedo-Gomez, P. M., Zhao, R., **Yedidi, R. S.**, Das, D., Haydar, B., Nicole, S. D., Reddy, S. V., Ghosh, A. K., Mitsuya, H. A modified P1 moiety enhances in vitro antiviral activity against various multi-drug-resistant HIV-1 variants and in vitro CNS penetration properties of a novel nonpeptidic protease inhibitor, GRL-10413. **Antimicrob Agents Chemother.**, 60 (12):7046-7059, **2016**. (Related PDB ID: **3KAO**).
 14. Aoki, M., Hayashi, H., **Yedidi, R. S.**, Martyr, C. D., Takamatsu, Y., Aoki-Ogata, H., Nakamura, T., Nakata, H., Das, D., Yamagata, Y., Ghosh, A. K., Mitsuya, H. C5-modified tetrahydropyrano-tetrahydrofuran -derived protease inhibitors (PIs) exert potent inhibition of the replication of HIV-1 variants highly resistant to various PIs, including darunavir. **J Virol.** 90: 2180-2194, **2015**. (Related PDB IDs: **5COK**, **5CON**, **5COO** and **5COP**).
 15. **Yedidi, R. S.**, Proteasa, G., Martin, P. D., Liu, Z., Vickrey, J. F., Kovari, I. A., Kovari, L. C. A multi-drug resistant HIV-1 protease is resistant to the dimerization inhibitory activity of TLF-PafF. **J Mol Graph Model.** 53: 105-111, **2014**. (Related PDB ID: **4NKK**).
 16. **Yedidi, R. S.**, Garimella, H., Aoki, M., Aoki-Ogata, H., Desai, D. V., Chang, S. B., Davis, D. A., Fyvie, S. W., Kaufman, J. D., Smith, D. W., Das, D., Wingfield, P. T., Maeda, K., Ghosh, A. K., Mitsuya, H. A conserved hydrogen-bonding network of P2 bis-tetrahydrofuran-containing HIV-1 protease inhibitors (PIs) with protease active-site amino acid backbone aids in their activity against PI-resistant HIV. **Antimicrob Agents Chemother.**, 58:3679-3688, **2014**. (Related PDB IDs: **4NJS**, **4NJT**, **4NJU** and **4NJV**).
 17. **Yedidi, R. S.**, Liu, Z., Kovari, I. A., Woster, P. M., Kovari, L. C. P1 and P1' para-fluoro phenyl groups show enhanced binding and favorable predicted pharmacological properties: structure – based virtual screening of extended lopinavir analogs against multidrug resistant HIV-1 protease. **J Mol Graph Model.** 47: 18-24, **2014**.
 18. **Yedidi, R. S.**, Maeda, K., Fyvie, W. S., Steffey, M., Davis, D. A., Palmer, I., Aoki, M., Kaufman, J. D., Stahl, S. J., Garimella, H., Das, D., Wingfield, P. T., Ghosh, A. K., Mitsuya, H. P2' benzene carboxylic acid moiety is associated with decrease in cellular uptake: evaluation of novel nonpeptidic HIV-1 protease inhibitors containing P2 bis-tetrahydrofuran moiety. **Antimicrob. Agents Chemother.** 57: 4920-4927, **2013**. (Related PDB IDs: **4HLA**, **4I8W** and **4I8Z**).
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ADDITIONAL PUBLICATIONS:

1. Shahid A. Laskar, Manikanta Sodasani and **Ravikiran S. Yedidi***. *In silico* identification and QSAR analysis of small molecule inhibitors for glucose transporter 3, a potential drug target for pan cancer treatments. **TCABSE-J**, Vol. 1, Issue 8:19-24. Epub: Sep 30 th, 2024. (*Corresponding author and Principal Investigator).
2. Kavyasree Teketi, Madhuri Vissapragada and **Ravikiran S. Yedidi***. *In vitro* analysis of natural-edible antioxidant remedies in reducing the oxidative stress mediated blood coagulation and preventing thrombosis in sickle cell disease. **TCABSE-J**, Vol. 1, Issue 8:14-18. Epub: July 30 th, 2024. (*Corresponding author and Principal Investigator).
3. Mulindwa M. Kizito, Umadevi Dandusena, Manikanta Sodasani, Madhumita Aggunna and **Ravikiran S. Yedidi***. Antimicrobial efficacy of toothpastes containing herbal vs. synthetic ingredients against antibiotic-sensitive/-resistant Gram -ve oral bacteria that cause dental caries. **TCABSE-J**, Vol. 1, Issue 8:9-13. Epub: July 27 th, 2024. (*Corresponding author and Principal Investigator).
4. Kiranmani Sampadarao, Manjunadh Mallapureddi, Prasanthi Valluri, Anuhya Kolluri, Sreesirisha Kolli, Manikanta Sodasani, Madhuri Vissapragada and **Ravikiran S. Yedidi***. Mass spectroscopy-based metabolic profiling of marine algal extract that exhibited *in vitro* antibacterial activity against laboratory *E. coli* cells. **TCABSE-J**, Vol. 1, Issue 8:6-8. Epub: July 24 th, 2024. (*Corresponding author and Principal Investigator).

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5. Priyadarshini Bellana, Nirupama Eddumala, Jessy Pinipe, Keerthana Marada, Roshini Mahapatro, Santhinissi Addala, Manikanta Sodasani, Madhuri Vissapragada and **Ravikiran S. Yedidi***. *In vitro* horizontal transfer of ampicillin-resistance gene between bacterial species with implications in antibiotic-resistance problem in human microbiome. *TCABSE-J*, Vol. 1, Issue 8:1-5. Epub: July 20 th , **2024**. (*Corresponding author and Principal Investigator).
 6. Pavan V. Simhadri, Santhinissi Addala, Manikanta Sodasani and **Ravikiran S. Yedidi***. Biodegradable organic perfumes are eco-friendly and healthy compared to the synthetic perfumes. *TCABSE-J*, Vol. 1, Issue 7:32-34. Epub: July 18 th , **2024**. (*Corresponding author and Principal Investigator).
 7. Anupriya Yekula, Anitha Devandla, Sreenivasulu Bonala, Swarnalatha Gudapati and **Ravikiran S. Yedidi***. Comparative *in silico* analysis of the human apolipoprotein-E isoforms 2, 3 and 4 to elucidate their structural flexibility with implications in Alzheimer's disease. *TCABSE-J*, Vol. 1, Issue 7:26-31. Epub: July 10 th , **2024**. (*Corresponding author and Principal Investigator).
 8. Balarohitha Sundaram, Lekhana Akula, Mythili V. S. Akella, Hazira Tasneem Mir, Azeez Shaik, Mamoshoeshe N. Lebesa, Joshnadevi Allu, Kirankumar Agathambadi, Manikanta Sodasani, Madhumita Aggunna, Santhinissi Addala, Madhuri Vissapragada and **Ravikiran S. Yedidi***. Exploring the street food bacterial diversity in the city of destiny using the bacterial 16S rRNA genotyping. *TCABSE-J*, Vol. 1, Issue 7:21-25. Epub: July 6 th , **2024**. (*Corresponding author and Principal Investigator).
 9. Mythili V. S. Akella, Balarohitha Sundaram, Lekhana Akula and **Ravikiran S. Yedidi***. A little bit of hands-on practical experience through workshops goes a long way. *TCABSE-J*, Vol. 1, Issue 7:1-2. May 29 th , 2024. Epub: May 29 th , **2024**. (*Corresponding author and Principal Investigator).
 10. Madhuri Vissapragada, Suvarna Gollu, Santhinissi Addala, Manikanta Sodasani, Madhumita Aggunna, Niharikha Mukala, Bindiya Panchagnula, Sudhakar Pola and **Ravikiran S. Yedidi***. PCR amplification of wild type receptor binding domain coding gene of SARS CoV-2 spike protein for cloning into a bacterial expression vector. *TCABSE-J*, Vol. 1, Issue 6:18-23. Epub: Aug 20 th , 2023. **2024**. (*Corresponding author and Principal Investigator).
 11. Manikanta Sodasani, Srirajini Bukka, Niharikha Mukala, Bindiya Panchagnula, Sudhakar Pola and **Ravikiran S. Yedidi***. *In vitro* comparative analysis of leaky protein expression in the BL21 strain vs. DH5 α strain of *E. coli*. *TCABSE-J*, Vol. 1, Issue 6:15-17. Epub: Aug 19 th , 2023. **2024**. (*Corresponding author and Principal Investigator).
 12. Madhumita Aggunna, Abhinav V. K. S. Grandhi and **Ravikiran S. Yedidi***. Molecular dynamics simulations of cytotoxin-associated gene A coded protein from *Helicobacter pylori* to probe the flexibility of p53 binding pocket for inhibitor design. *TCABSE-J*, Vol. 1, Issue 6:9-14. Epub: Aug 10 th , **2023**. (*Corresponding author and Principal Investigator).
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13. Lalithadevi Karri, Manikanta Sodasani, Santhinissi Addala, Abhinav V. K. S. Grandhi, Jahnvi Chintalapati and **Ravikiran S. Yedidi***. Proton-NMR-based comparative analysis of aqueous vs. organic extractions from *Ficus religiosa* with potential applications in the treatment of polycystic ovarian syndrome. *TCABSE-J*, Vol. 1, Issue 6:4-8. Epub: Aug 15 th , **2023**. (*Corresponding author and Principal Investigator).
 14. Madhumita Aggunna, Ramesh Reddy, Girinadh R. S. Lekkala and **Ravikiran S. Yedidi***. An intermittent culturing protocol for *Helicobacter pylori* from the clinical biopsies. *TCABSE-J*, Vol. 1, Issue 6:1-3. Epub: Apr 8 th , **2023**. (*Corresponding author and Principal Investigator).
 15. Ramya Tamarala, Jahnvi Chintalapati, Manikanta Sodasani, Abhinav V. K. S. Grandhi and **Ravikiran S. Yedidi***. Proton NMR spectral data of adulterated tea samples suggest possible causes for various human gut-related diseases. *TCABSE-J*, Vol. 1, Issue 5:33-35. Epub: Mar 20 th , **2023**. (*Corresponding author and Principal Investigator).
 16. Santhinissi Addala, Kamalakumari Gadigoyala, Pravallika Sandipamu, Layola E. Giduthuri, Likhitha Samminga and **Ravikiran S. Yedidi***. Comparative identification of the *Lactobacillus spp.* from yogurt/buttermilk samples and human vaginal swabs. *TCABSE-J*, Vol. 1, Issue 5:26-32. Epub: Mar 12 th , **2023**. (*Corresponding author and Principal Investigator).
 17. Abhinav V. K. S. Grandhi, Madhumita Aggunna and **Ravikiran S. Yedidi***. Solvent-guided quantitative structure-activity relationship (SG-QSAR): *In silico* SG-QSAR- based improvement of the human uridine phosphorylase-2 inhibitor binding affinity with potential applications in reducing the toxicity of chemotherapy. *TCABSE-J*, Vol. 1, Issue 5:20-25. Epub: Mar 12 th , **2023**. (*Corresponding author and Principal Investigator).
 18. Niharikha Mukala, Madhumita Aggunna and **Ravikiran S. Yedidi***. Sequence homology-based identification of paracetamol metabolizing enzymes in chicken liver homogenates for *in vitro* drug metabolism studies. *TCABSE-J*, Vol. 1, Issue 5:12-19. Mar 22 nd , **2023**. (*Corresponding author and Principal Investigator).
 19. Madhuri Vissapragada, Santhinissi Addala, Madhumita Aggunna, Niharikha Mukala, Jahnvi Chintalapati, Akhila Kamidi, Meghana S. Korabu, Manisha Lanka, Hemsai Palla, Manikanta Sodasani, Abhinav V.K.S. Grandhi, Afeez Unnisa, Alekhya Adhikari, Ayyappa D. Kumpatla, Bhagyasri Yerabolu, Chamanthi Paidi, Gayathri Pemmadi, Hanisha Penta, Hemasri Mallavalli, Kamalakumari Gadigoyala, Mahalakshmi Voleti, Maheswari Ravilisetty, Neelimadevi Akula, Prathyusha Gundubogula, Prathyusha Puripanda, Pravallika Lankapalli, Pravallika Sandipamu, Rakshita Nagraj, Ramya Tamarala, Ratnapriya Geddamm, Raviteja Kolluru, Raviteja Oggu, Roopini Garbhapu, Saitejasri Meka, Sathvika Geddamm, Sowjanya Viyyapu, Sowmya Sammangi, Sravanalakshmi Javvaji, Srinjoy Chattopadhyay, Srividya Inemella, Vasavi Grandhi, Yathiraj Chigilipalli, Yuktha C. Puppala, Madhura H. Sharma, Sravyasree Gubbala, Kajalkumari Thakur, Saimythely Anaparthi, Bhashmika R. Pothula and **Ravikiran S. Yedidi***.

In silico analysis of molnupiravir usage vs. efficacy of COVID-19 vaccines. **TCABSE-J**, Vol. 1, Issue 5:1-11. Mar 22 nd , **2023**. (*Corresponding author and Principal Investigator).

20. Korangi, D. P. and **Yedidi, R.S.*** Design of a minimally invasive stem cell therapy by targeted sonic hedgehog protein engineering for intervertebral disc damage repair. **TCABSE-J**, Vol. 1, Issue 4: 41-44. Epub: Oct5th , **2022**. (*Corresponding author).
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23. Lanka, M., Sodasani, M. and **Yedidi, R.S.*** (2022). Novel biophysical strategy for the delivery of therapeutic microRNA molecules for Cancer and infectious diseases treatment. **TCABSE-J**, Vol. 1, Issue 4:9-17. Epub: Oct5th , **2022**. (*Corresponding author).
24. Keerthi, R.S., Chintalapati, J. and **Yedidi, R.S.*** (2022). *In vitro* biological assay design for the inhibition of the matrix metalloproteinase, Collagenase type-1, using ethylenediaminetetraacetic acid, a metal ion chelator. **TCABSE-J**, Vol. 1, Issue 4:18-21. Epub: Oct5th , **2022**. (*Corresponding author).
25. Posimsetti, M., Sanapala, S., Vissapragada, M. and **Yedidi, R.S.** (2022) Design of a pixel-based quantification method for in vitro colorimetric enzyme assay to evaluate enzyme inhibition in a dose-dependent manner. **TCABSE-J**, Vol. 1, Issue 4:22-27. Epub: Oct5th , **2022**. (*Corresponding author).
26. Thokala, R. and **Yedidi, R.S.** (2022). Survey of the janus kinase-1 (JAK-1) transcript variants and protein isoforms of JAK-1 to determine its druggability for acute lymphoid leukemia treatment. **TCABSE-J**, Vol. 1, Issue 4: 36-41. Epub: Oct5th , **2022**. (*Corresponding author).
27. Aggunna, M., Grandhi, A.V.K.S. and **Yedidi, R.S.*** (2022). Artistic representation of Scientific data: prediction of mutant SARS-CoV-2 viral fitness based on the viral spike protein coding mRNA stability. **TCABSE-J**, Vol. 1, Issue 3:1-3. Epub: Apr 2nd , **2022**. (*Corresponding author).
28. Gampa, S., Aggunna, M., Grandhi, A., Adduri, V., Ayithamsetti, P., Korabu, M., Addala, S., Vissapragada, M., Palakurty, M. and **Yedidi, R.S.*** (2022). Increase in the predicted mRNA stability of certain SARS CoV-2 mutant spike proteins compared to wild type may pose potential risk to vaccines. **TCABSE-J**, Vol. 1, Issue 3:4-9. Epub: Apr2nd , **2022**. (*Corresponding author).
29. Aggunna, M. and **Yedidi, R.S.*** (2022). *In silico* quantitative structure-activity relationship analysis of a highly potent experimental HIV-1 protease inhibitor, GRL10413. **TCABSE-J**, Vol. 1, Issue 3:10-17. Epub: Apr2nd, **2022**. (*Corresponding author).
30. Chintalapati, J., Tula, S. and **Yedidi, R.S.*** (2022) Screening the microRNA-25 target database revealed FBXW7 as one of its top onco-target hits towards potential anti-cancer therapeutic design. **TCABSE-J**, Vol. 1, Issue 3:18-30. Epub: Apr2nd , **2022**. (*Corresponding author).
31. Regani, T., Jalaparathi, H., Chalapathi, B., Yegireddi, V., Pilla, V., Chandaka, A., Gollapalli, D., Vuriti, M., Mandapati, T., Raghu Bapiraju M.S., Sagi, A., Pemmaraju, P.L., Shaik, I. and **Yedidi, R.S.*** (2022). Evaluation of structural deviations in HIV-1 gp-120 clinical mutant models to guide the HIV-vaccine design towards passive immunization. **TCABSE-J**, Vol. 1, Issue 3:31-34. Epub: Apr 2nd, **2022**. (*Corresponding author).

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32. Mukala, N. and **Yedidi, R.S.*** (2022). *In vitro* assay design using chicken liver extracts to study the CYP450-mediated metabolism of drugs & pharmaceuticals: a cheaper alternative for laboratories. **TCABSE-J**, Vol. 1, Issue 3:35-41. Epub: Apr2nd , 2022. (*Corresponding author).
 33. Sheik, R., Vangalapudi, H. and **Yedidi, R.S.*** (2022). Sequence coverage and model completion using template-based protein structure prediction with and without de novo structure prediction protocols. **TCABSE-J**, Vol. 1, Issue 3:40-43. Epub: Apr 2nd , 2022. (*Corresponding author).
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 35. Addala, S. and **Yedidi, R.S.*** (2021). Endometrium-derived menstrual stem cells as a potential source of adult stem cells for organoid development. **TCABSE-J**, Vol. 1, Issue 2:12-14. Epub: Oct15 th , 2021. (*Corresponding author).
 36. **Yedidi, R.S.*** (2021). Binding profile of VX-478 in the active site of a multidrug-resistant HIV-1 protease, an X-ray crystal structure analysis. **TCABSE-J**, Vol. 1, Issue 2:15-17. Epub: Oct15 th , 2021. (Related PDB ID: **4RVJ**). (*Corresponding author).
 37. Lanka, M. and **Yedidi, R.S.*** (2021). Novel strategies for targeted delivery of therapeutic microRNA molecules. **TCABSE-J**, Vol. 1, Issue 2:18-20. Epub: Oct15th , 2021. (*Corresponding author).
 38. Chintalapati, J. and **Yedidi, R.S.*** (2021). Advances in artificial intelligence-based microbiome studies have potential implications in economic precision medicine regimens. **TCABSE-J** Vol. 1, Issue 2:21-23. Epub: Oct 15th , 2021. (*Corresponding author).
 39. Mukala, N. and **Yedidi, R.S.*** (2021). The immune-booster strategy, IDIOMA: Infectious diseases immunomics meta-analysis. **TCABSE-J**, Vol. 1, Issue 2:25-27. Epub: Oct15 th , 2021. (*Corresponding author).
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 42. Kamidi, A. and **Yedidi, R.S.*** (2021). Chemical biology-based strategies to stabilize the secondary structure of dynamic ceRNA molecules for detection and activation of p53 gene in colorectal cancer. **TCABSE-J**, Vol. 1, Issue 2:35-37. Epub: Oct15th , 2021. (*Corresponding author).
 43. Vissapragada, M., Addala, S., Grandhi, A., Gampa, S. and **Yedidi, R.S.*** (2021). Analysis of the wild type SARS-CoV-2 spike protein-mRNA secondary structure stability to predict viral fitness. **TCABSE-J**, Vol. 1, Issue 2:38-40. Epub: Oct15th , 2021. (*Corresponding author).
 44. Chintalapati, J. and **Yedidi, R.S.*** (2021). Promoting the post COVID-19 alveolar regeneration by targeting cellular signaling pathways through small molecule intervention. **TCABSE-J**, Vol. 1, Issue 1:1-3. Epub: Apr13 th , 2021. (*Corresponding author).
 45. Regani, T., Jalaparathi, H., Chalapathi, B. and **Yedidi, R.S.*** (2021). Structural deviations of mutant HIV-1 glycoprotein-120 (gp120) compared to the wild type gp120 explain the failure of passive immunization. **TCABSE-J**, Vol. 1, Issue 1:6-8. Epub: Apr13th , 2021. (*Corresponding author).
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46. Buddana, L., Katragadda, V., Badgu, N. and **Yedidi, R.S.*** (2021). Targeting the TIMPs with PROTAC-based small molecules as a potential therapeutic approach for Liver cirrhosis treatment. *TCABSE-J*, Vol. 1, Issue 1:9-11. Epub: Apr 13th , 2021. (*Corresponding author).
47. Vissapragada, M., Addala, S., Sodasani, M. and **Yedidi, R.S.*** (2021). Major structural deviations in the receptor binding domain of SARS-CoV-2 spike protein may pose threat to the existing vaccines. *TCABSE-J*, Vol. 1, Issue 1:12-14. Epub: Apr 13th , 2021. (*Corresponding author).
48. Aggunna, M. and **Yedidi, R.S.*** (2021). HelicoTAC © , a PROTAC-based small molecule targeting the virulence factor Cag A of *H. pylori* as a potential therapeutic for gastritis and gastric cancers. *TCABSE-J*, Vol. 1, Issue 1:15-17. Epub: Apr13th , 2021. (*Corresponding author).
49. **Yedidi, R.S.*** (2020). Combination of anti-asthmatics with remdesivir may reduce the necessity for the usage of ventilators in severe COVID-19 cases including the elderly. *TCABSE-J* Spl. issue 1:1-2. Epub: Oct25 th , 2020. (*Corresponding author).
50. Koppala, R.S., Vissapragada, M. and **Yedidi, R.S.*** (2020). Triplet codons to amino acids: Applications of machine learning approaches to protein translation made simple for college students. *TCABSE-J* Spl. issue 1:3-6. Epub: Oct25 th , 2020. (*Corresponding author).
51. **Yedidi, R.S.*** (2020). X-ray crystal structure analysis of a multidrug-resistant variant of HIV-1 protease in complex with a chroman-4-amine containing protease inhibitor. *TCABSE-J* Spl. issue 1:9-10. Epub: Oct25 th , 2020. (Related PDB ID: **4RVX**). (*Corresponding author).
52. Dadala, A., Katragadda, V., Badgu, N. and **Yedidi, R.S.*** (2020). Vantage point: New insights into the old enteric fever treatment by rescuing the host cell ubiquitin-proteasome system. *TCABSE-J* Spl. issue 1:15-16. Epub: Oct25 th , 2020. (*Corresponding author).
53. Addala, S.N. and **Yedidi, R.S.*** (2020). Impact of COVID-19 on culture and society. *TCABSE-J* Spl. issue 1:17-21. Epub: Oct25 th , 2020. (*Corresponding author).
54. Ramavarapu, S. and **Yedidi, R.S.*** (2020). CRISPR/Cas9 mediated intervention to target the host CD4 + T cells that are latently infected with HIV-1 genome. *TCABSE-J* Spl. issue 1:22-23. Epub: Oct25 th , 2020. (*Corresponding author).
55. Aggunna, M. and **Yedidi, R.S.*** (2020). The OMICAS, Can-IT: Onco-Molecular Immunotherapeutic Constellation Analytics Spectrum in Cancer Immunotherapy. *TCABSE-J* Spl. issue 1:24-26. Epub: Oct25th, 2020. (*Corresponding author).
56. Gandhi, S. and **Yedidi, R.S.*** (2020). Mapping and analysis of cathepsin cleavage site distribution on the 3-D model of human thyroglobulin for potential inhibitor design. *TCABSE-J* Spl. issue 1:30-32. Epub: Oct 25th , 2020. (*Corresponding author).
57. Chittipeddi, H., Katragadda, V., Badgu, N. and **Yedidi, R.S.*** (2020). Leveraging the active site steric hindrance for GTP hydrolysis in mutant K-Ras variants to achieve selectivity in kinase inhibitors for cervical cancer. *TCABSE-J* Spl. issue 1:33-35. Epub: Oct 25 th , 2020. (*Corresponding author).

INVITED TALKS, WEBINARS & WORKSHOPS

2020-2023:

- **International online Faculty development program**, Sri Y. N. College, Narasapur, AP. India.
Title: Use of proper controls in Life Sciences experiments.
- **IIC Impact Lecture**, **Vikas Institute of Pharmaceutical Sciences**, Rajamahendravaram, AP. India.

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Title: Novel drug synthesis and delivery methods using Synthetic Biology.

- **National Pharmacy Week**, Pharmaceutical Sciences, **Andhra University**, Visakhapatnam, AP. India.
Title: Solvent mapping in Drug Discovery.
- **National Workshop** conducted by **St. Joseph's College of Women**, Visakhapatnam, AP. India.
Title: Insights into Bioinformatics tools and databases to analyze Biological data.
- **National Pharmacy Week**, **Sri Vishnu College of Pharmacy**, Bhimavaram, AP. India.
Title: Future pharmaceutical formulations with a Biological twist.
- **Awareness workshop**, challenges of pandemics, **Gayatri Vidya Parishad**, Visakhapatnam, AP. India.
Title: The Pandemics.
- **International webinar on COVID-19** challenges, preparedness & Management from a global perspective, **Visakha Govt. Degree College for Women**, Visakhapatnam, AP. India.
Title: Facts about coronavirus, vaccines and reliability.
- **Workshop** on CRISPR-Cas9 technology, **TCABS-E**, Rajamahendravaram, AP. India.
Title: Basics and applications of CRISPR-Cas9 technology.
- **Webinar on the Vaccines-Life Saving Drops**, **St. Theresa's College for Women**, Eluru, AP. India.
Title: Vaccines: Design, administration and their success with a focus on COVID-19.
- **Workshop** on ML and AI for Science students, **TCABS-E**, Rajamahendravaram, AP. India.
Title: Basics in Machine Learning for Artificial Intelligence in Biomedical Research.
- **National seminar** Biotechnology, **Dantuluri Dantuluri Narayana Raju College**, Bhimavaram, AP. India.
Title: Genetic Engineering vs. Genome Editing.
- **National level one day webinar**, **Krishna University**, Machilipatnam, AP. India.
Title: COVID-19 treatment options.
- **Workshop on Bioinformatics**, **S.K.B.R. College**, Amalapuram, AP. India.
Title: Navigating through the NCBI database for various Bioinformatics tools.
- **Seminar** for the U.G. Chemistry students, **Aditya Degree College**, Visakhapatnam, AP. India.
Title: Medicinal Chemistry applications in Drug Discovery.
- **Seminar** on Biotechnology for P.G. students, **S.K.R. College for Women**, Rajamahendravaram, AP. India.
Title: Basics of Biotechnology: Cloning, protein production and cell culture.

2015-2019:

- **Biotechnology seminar**, **BMS College for Women**. Bangalore, KA. India.
Title: Genome editing using CRISPR/Cas9.
- **DBT-India Popular Lecture**, **Garden City University**. Bangalore, KA. India.
Title: Multi-drug-resistance in HIV/AIDS.
- **Seminar**, **Institute for Stem cell Science and Regenerative Medicine**, NCBS, Bangalore, KA. India.
Title: Applications of structural biology in small molecule drug discovery: HIV-1 protease inhibitors.
- **National workshop** on Biomass to Bioenergy. **Govt. College, Rajahmundry**, AP. India.
Title: Genetic engineering and biotechnology in biomass to bioenergy.
- **Alumnus seminar**, Dept. of Chemistry, **Govt. College, Rajahmundry**, AP. India.
Title: Drug Discovery in a nutshell.
- **High Performance Computing Symposium**. Queen's University, ON. **Canada**.
Title: Comparative *in silico* inter-spin distance analysis of IDSL spin labels modeled on lysozyme mutants against experimentally determined DEER distance measurements.
- **Departmental seminar**, University of Toronto. Toronto, ON. **Canada**.
Title: Structural insights into the proteasome granule formation in quiescent yeast.
- **Drug Discovery seminar**, University of Toronto. Toronto, ON. **Canada**.
Title: Solvent-mapping based drug discovery for HIV/AIDS.

2000-2015:

- **Seminar**, The NIH-Virology Interest Group, **National Institutes of Health**, Bethesda, MD. **USA**.
Title: Structure-function evaluation of HIV-1 protease inhibitors.
- **Seminar**, The NCI-CCR-FYI Colloquium. Frederick, MD. **USA**.

Title: Virologic and crystallographic studies of HIV-1 variants that are highly resistant to darunavir.

- **Seminar**, The 44th Mid Atlantic Macromolecular Crystallography Meeting and the 11th Annual SER-CAT Symposium. Shady Grove, MD. **USA**.
Title: Structure-based drug design and structural-basis for drug resistance: HIV-1 protease inhibitors.
- **Delegate**, Foreign student/scholar Advisor's meeting hosted by DIS-NIH, Bethesda, MD. **USA**.
Title: Cross-cultural programming at NIH: Focusing on the NIH-Fellows. (NOTE: Non-scientific talk).
- **Seminar, Center of Excellence**, NCI-HIV/AIDS-Think Tank meeting. Bethesda, MD. **USA**.
Title: Structure-function evaluation of darunavir (DRV) with DRV-resistance HIV-1 protease variant.
- **Seminar**, The HIV and AIDS Malignancy Branch, CCR, **NCI**. Bethesda, MD. **USA**.
Title: Structure-function evaluation of novel HIV-1 protease inhibitors.
- **Seminar**, National Cancer Institute, Frederick, MD. **USA**.
Title: Understanding the structural-basis for drug resistance: HIV-1 protease inhibitors.
- **Seminar**, Department of Microbiology, **University of Michigan**, Ann Arbor, MI. **USA**.
Title: Structure-based drug design: HIV-1 protease inhibitors.
- **Seminar**, Mid Atlantic Graduate Student Symposium, Detroit, MI. **USA**.
Title: Design, synthesis and evaluation of chemical probes against multidrug-resistant HIV-1 protease.
- **Seminar, Wayne State Medical School**, Detroit, MI. **USA**.
Title: Structure-based drug-resistance mechanism in HIV-1 protease inhibitors.

RESEARCH COLLABORATIONS

2015-Present:

- **Central Food Technological Research Institute, Mysore, KA. India.**
 - COVID-19 vaccine design and efficiency of current vaccines. (Published in **Vaccines**, 2022).
- **Kumamoto University, Kumamoto, Japan.**
 - Computational modeling of insertion mutants of HIV-1 capsid protein. (Published in **Scientific reports**, 2019).
 - Structure-function evaluation of highly potent HIV-1 protease inhibitors with improved bioavailability. (Published multiple research articles). (Related PDB IDs: **6UWB**, **6UWC**, **6D0E**, **6D0D**, **5TYR**, **5TYS**, **5V4Y** and **5KAO**).
- **St. Joseph's College for Women, Visakhapatnam, AP. India.**
 - Antibacterial activity evaluation of natural compounds from plant extracts. Evaluated four compounds out of which only one compound showed potent activity. Data from this collaboration will be a part of doctoral thesis.
- **Chintalapati Satyavathi Devi St. Theresa's College for Women, Eluru, AP. India.**
 - DNA sequence analysis of bacterial 16S ribosomal RNA samples and identification of species. Analyzed the raw chromatograms of 12 samples and identified 6 different species. Data from this collaboration will be a part of doctoral thesis.
- **PhoreMost company, Cambridge University, U.K.**
 - Structural analysis of PROTEIN-i molecules in complex with their targets using X-ray crystallography & NMR. (Published in **Cell chemical biology**, 2021). (Related PDB ID: **7C8E**).
- **National Centre for Biological Sciences, Bengaluru, KA. India.**
 - Structural analysis of Malarial protein (Pathogen) in complex with human autophagy-related protein (Host) using X-ray crystallography. (Published in **Communications biology**, 2020).
- **Faculty of Medicine, University of Toronto, Toronto, ON. Canada.**
 - Electron paramagnetic resonance spectroscopy-based structural analysis of yeast proteasomal subunits. This data was used to apply for funding from the NSERC, Canada.
 - X-ray crystal structure analysis of squid arrestin. (Published in **J Mol Biol.**, 2018). (Related PDB ID: **6BK9**).
 - Computational modeling and simulation analysis of EPR-spin labeled proteins. (Published in **Springer LNCS**, Conference Proceedings 2018).
- **Terrence Donnelly Centre for Cellular & Biomolecular Research, Toronto, ON. Canada.**

- Super resolution (dSTORM) microscopy analysis of the eukaryotic proteasomal storage granules. (Published in **Mol Biol Cell**, 2017).
- **Department of Biochemistry, University of Toronto, ON. Canada.**
 - Structural analysis of a yeast proteasomal subunits interacting with ubiquitin using solution NMR spectroscopy. The data obtained was used to apply for funding from the NSERC, Canada.
- **Hospital for Sick Children, Toronto, ON. Canada.**
 - Solid-state NMR analysis of the eukaryotic proteasomal storage granules using ubiquitin as a probe to understand their structural organization. The data from this analysis was used to apply for funding from Health Canada.
- **Department of Chemistry, University of Toronto, ON. Canada.**
 - Photo-activatable peptide-based evaluation of internally disorder proteins that lead to the formation of biological liquid-liquid phase separations in the cell. The data from this work was used to apply for funding from the NSERC, Canada.
- **University of Potsdam, Potsdam. Germany.**
 - AAA-ATPases controlling the eukaryotic proteasomal dynamics in protein degradation. (Published in **Front. Mol. Biosci.**, 2017).
- **National Cancer Institute, Bethesda, MD. USA.**
 - Repurposing the HIV-1 protease inhibitors as anti-cancer therapeutics for Kaposi's Sarcoma. The preliminary data from this work was used for funding application from the NCI/NIH.

2000-2015:

- **Purdue University, Lafayette, IN. USA.**
 - Synthetic medicinal chemistry of HIV-1 protease inhibitors for further biological evaluation. (Published multiple research articles). (Related PDB IDs: **6UWB**, **6UWC**, **6D0E**, **6D0D**, **5TYR**, **5TYS**, **5V4Y**, **3KAO**, **5COK**, **5CON**, **5COO**, **5COP**, **4NJS**, **4NJT**, **4NJU**, **4NJV**, **4HLA**, **4I8W** and **4I8Z**).
- **Kumamoto Health Science University, Kumamoto, Japan.**
 - X-ray crystallographic analysis of novel HIV-1 protease inhibitors. Successfully completed and published the X-ray crystal structures. (PDB IDs: **5TYR**, **5TYS**, **5COK**, **5CON**, **5COO** and **5COP**).
- **Kumamoto University, Kumamoto, Japan.**
 - X-ray crystallographic analysis of novel HIV-1 protease inhibitors. Successfully completed and published the X-ray crystal structures. (PDB IDs: **6UWB**, **6UWC**, **5D0D**, **5D0E**, **5V4Y** and **5KAO**).
- **Life Sciences-Collaborative Access Team, Advanced Photon Source, Lemont, IL. USA.**
 - X-ray crystallographic analysis of a clinical patient isolate-A02 HIV-1 protease in complex with experimental inhibitors. Successfully completed and published the X-ray crystal structures. (PDB IDs: **4RVX**, **4RVJ** and **4RVI**).
- **SouthEast Regional Collaborative Access Team, Advanced Photon Source, Lemont, IL. USA.**
 - X-ray crystallographic analysis of novel HIV-1 protease inhibitors. Successfully completed and published the X-ray crystal structures. (PDB IDs: **5V4Y** and **5KAO**).
- **National Institute for Arthritis, Musculoskeletal and Skin diseases, Bethesda, MD. USA.**
 - Expression and purification of wild type and clinical isolates of HIV-1 protease variants for structure and function studies. (Published in **Antimicrob Agents Chemother.**, 2013 and **Antimicrob Agents Chemother.**, 2014). (Related PDB IDs: **4HLA**, **4I8W**, **4I8Z**, **4NJS**, **4NJT**, **4NJU** and **4NJV**).
- **HIV and AIDS Malignancy Branch, National Cancer Institute, Bethesda, MD. USA.**
 - HPLC/MS-based cell penetration assays to understand the bioavailability of HIV-1 protease inhibitors. (Published in **Antimicrob Agents Chemother.**, 2013). (Related PDB IDs: **4HLA**, **4I8W** and **4I8Z**).
- **Eugene Applebaum College of Pharmacy and Health Sciences, Wayne State University, Detroit, MI. USA.**
 - Computational modeling & repurposing of antimalarial compounds as antiHIV/AIDS compounds. (Published in **J. Med. Chem.**, 2010 and **Biochem Biophys Res Commun.**, 2012). (Related PDB IDs: **3R0W** and **3R0Y**).
- **Department of Biochemistry, Wayne State Medical School, Detroit, MI. USA.**

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- NMR-Spectroscopic evaluation of multidrug-resistant HIV-1 protease in complex with potent lead peptide inhibitor. (Published in **Biochem Biophys Res Commun.**, 2013).
 - **Department of Chemistry, Dartmouth College, Hanover, NH. USA.**
 - Design and synthesis of potent peptide-inhibitors against multidrug-resistant HIV-1 protease. (Published in **Biochem Biophys Res Commun.**, 2013).

REVIEWER FOR SCIENTIFIC JOURNALS

2010-Present:

- Applied and Environmental Microbiology. (**American Society for Microbiology**).
- Antimicrobial Agents and Chemotherapy. (**American Society for Microbiology**).
- HIV/AIDS – Research and Palliative Care. (**Dove Medical Press**).
- Drug Design, Development and Therapy. (**Dove Medical Press**).
- British Journal of Pharmacology. (**John Wiley & Sons, Inc.**).

MEMBERSHIP IN SCIENTIFIC SOCIETIES & PROFESSIONAL ASSOCIATIONS

2010-Present:

- The International AIDS society.
- The American Crystallographic Association.
- The American Society for Microbiology.
- The Fellows & Young Investigators Steering Committee, CCR, NCI.
- The NIH-Visiting Fellows Committee & NIH-INDIA association.
- The NIH-Structural Biology Interest Group.
- The NIH-Virology Interest Group.

WORKSHOPS, SHORT COURSES & TECHNICAL TRAINING ATTENDED

2010-Present:

- **Workshop**, Center for Cancer Research, National Cancer Institute, Bethesda, MD. **USA**.
Title: **X-ray Free Electron Laser**: The Biomedical Research Tool for Coming Decades.
- **Workshop**, office of Intramural Training and Education, NIH, Bethesda, MD. **USA**.
Title: Successful **Mentoring, Grant Writing & Teaching** in a Medical School.
- **Workshop**, Center for Cancer Training, National Cancer Institute, Bethesda, MD. **USA**.
Title: **Grants and Grantsmanship** (including **mock study section** and review of mini research proposals).
- **Workshop**, American Chemical Society at the NIH, Bethesda, MD. **USA**.
Title: Advancing your career: **resume writing, communication skills and networking**.
- **Workshop**, Foundation for Advanced Education in the Sciences (FAES), NIH, Bethesda, MD. **USA**.
Title: **Biophysical Methods** for Protein Interactions.
- **Short course**, Foundation for Advanced Education in the Sciences (FAES), NIH, Bethesda, MD. **USA**.
Title: Synthesis and applications of **liposomes for drug delivery**.
- **Training**, American Crystallographic Association (ACA), Illinois Institute of Technology, Chicago, IL. **USA**.
Details: Two weeks training in **macromolecular crystallography** at the Illinois Institute of Technology, with special **synchrotron data collection** training at the Advanced Photon Source, Argonne National Laboratory, IL.
- **Short course**, Department of Pharmacology, Wayne State Medical School, Detroit, MI. **USA**.
Details: Four weeks training in **protein mass spectrometry MALDI-TOF** using tryptic digests of whole cell extracts.
- **Short course**, Department of Pharmacology, Wayne State Medical School, Detroit, MI. **USA**.
Details: *In-silico* **modeling** of Clinical **Pharmacokinetics** and **Pharmacodynamics** of various drugs using **WinNonlin** software.
- **Training**, National Institute of General Medical Sciences, Michigan State University, Lansing, MI. **USA**.
Details: Two weeks training in animal handling, animal surgery, pharmacology and systems biology at Michigan State University, MI.

ADMINISTRATIVE AND ENTREPRENEURIAL SKILLS**2006-Present:**

- Founder, Principal Scientist and Lead Instructor at The Center for Advanced-Applied Biological Sciences & Entrepreneurship (TCABS-E):
 - Planned and organized the Annual Biotechnology Festival of Rajahmundry for the years 2019, 2020 and 2021.
 - Planned and organized the Visakha Life Sciences & Entrepreneurship (VLSE) Symposium of Visakhapatnam for the years 2019-2023.
- Team Leader for Structural Biology at Centre for Chemical Biology and Therapeutics.
 - Manage a team of three postdocs, two research associates and technicians working on multiple in-house, academic and industrial collaborative projects.
- Founder of The Yedidi Institute of Discovery and Education (TyiDE). Secured funding for a startup company, TyiDE.
- *Member of the NIH Visiting Fellows Committee (VFC).*
 - Planned and organized the first and second annual “Immigration-101 symposium” at NIH (2013 & 2014).
 - Planned and organized the “Science Voices from Home” seminar to discuss career opportunities abroad for postdocs at NIH.
 - Planned and organized multiple VFC-brown bag sessions to discuss topics such as Immigration/visa issues and international funding opportunities for visiting fellows with the experts in the field at NIH.
 - Active member of planning and organization committee for the 2012-VFC-International opportunities expo at NIH.
 - Served as an advisor/mentor for the incoming new postdoctoral fellows at NIH to help them plan a better work-life balance by sharing my experiences.
 - Published multiple articles on various workshops/events in the VFC-Newsletter.
- *Member of the Fellows and Young Investigators (FYI) Steering Committee at the Center for Cancer Research (CCR), NCI.*
 - Planning committee member of the CCR-FYI-colloquium, 2013.
 - Designed and organized a workshop – “International opportunities and visa issues” at the CCR-FYI-colloquium, 2013.
 - Helped in planning and organizing the CCR-FYI career design/development seminar series in Bethesda, MD.
 - Co-chaired a workshop – “Making yourself marketable” focused on networking, self-evaluation & career planning for postdocs at the CCR-FYI-colloquium, 2012.
 - Published multiple articles in the CCR-FYI-Newsletter.
- *Member of the NIH-INDIA community at NIH.*
 - Organized the 2012-NIH-INDIA seminar series focused on the transition to faculty after postdoctoral training at NIH.
- *Graduate Student Representative, Department of Biochemistry and Molecular Biology, School of Medicine, Wayne State University.*
 - Helped a group of MBA students as the scientific advisor in the design and development of a business model to commercialize the intramural commodities (drugs, biologics and biomedical instrumentation).
 - Helped in planning and organization of the annual departmental “Orten lecture” followed by hosting a dinner for the honorable guests, Nobel Laureate, Dr. Kurt Wuthrich in 2007 and Dr. Michael Rossmann in 2008.
 - Member of the planning committee for the graduate student research day at the School of Medicine, Wayne State University in 2007.
 - Designed and organized a group discussion titled: “Darwin’s theory of employment” which was popular among the undergraduate student interns.

SOCIAL & OUTREACH

2006-Present:

- Conducted high school students to visit TCABS-E Laboratories and perform experiments.
- Helped decorate a haunted house for a Halloween party for the kids at the NIH Childrens' Inn.
- The "International day at the Childrens' Inn at NIH".
- The "NIH-INDIA-Junior talents" event focused on kids of the employees at NIH, FDA and USUHS as an informal social gathering.
- Multiple social events such as dining out, social networking, etc. for the Visiting Fellows community at NIH.
- Planned and organized the departmental annual picnic and holiday party for the years 2006 to 2008 in the Department of Biochemistry and Molecular Biology, School of Medicine, Wayne State University.