

## DEEPAK B. SALUNKE, Ph.D.

**CURRICULUM VITAE**

- **PRESENT ADDRESS:**

Assistant Professor, Department of Chemistry  
 Coordinator, National Interdisciplinary Centre of Vaccine,  
 Immunotherapeutics and Antimicrobials  
 Panjab University, Chandigarh 160 014 (INDIA).  
 Mob: [+91-8195968252](tel:+91-8195968252); E-mail: [salunke@pu.ac.in](mailto:salunke@pu.ac.in)



- **CAREER GOALS:**

- To engage in research involving design, synthesis and structure-activity relationships (SAR) of novel pharmaceutically interesting scaffolds. Combinatorial parallel synthesis as well as diversity-oriented synthesis of organic small molecules and to develop innovative methodologies for important organic transformations. Would like to apply my chemistry skills to help develop therapies and vaccines against major public health pathogens including malaria, leishmania, and tuberculosis. Utilize my scientific expertise and knowledge to create a Centre of Research Excellence in Medicinal Chemistry and address the key issues of our nation and work towards the development of INDIA.

- **AWARDS & HONORS:**

- **Editorial Advisory Board Member (2021-2024):** An Early Career Editorial Advisory Board Member of the *Journal of Medicinal Chemistry* of the American Chemical Society.
- **MHRD's SPARC Grant (2019):** A project is sanctioned for the development of synthetic TLR2, TLR7/8 and mIncle agonists for use as part of a combination adjuvant in Tuberculosis Vaccines to establish a strong collaboration with Prof. Nikolai Petrovsky, Director, Vaxine Pty. Ltd. and Professor at the Flinders University, South Australia.
- **MHRDs GIAN Courses (2017-2018):** Total seven GiAN courses were approved and successfully completed six courses at Panjab University with guest faculty from USA, France, Singapore, Tehran and Canada.
- **UGC Start-up Grant (2017):** Synthesis of substituted 1*H*-imidazo/thiazolo[4,5-*c*]quinoline-4-amines to authenticate critical role of partial charges in determining TLR7/8 agonistic activity.
- **Newton-Bhabha Fellowship (2016):** As an early career researcher attended "Advanced Training Course in Waste Water Treatment" for 3 weeks at the University of Hull, UK.
- **Ramalingaswami Re-entry Fellowship (2015):** A re-entry fellowship was awarded by DBT India to work on the design and synthesis of new small molecule inhibitors of IDO.
- **Travel Grant (2015):** Awarded by National Chiao Tung University (NCTU), Taiwan to deliver a lecture series at the Institute of Chemistry, Academia Sinica, Taipei and NCTU, Taiwan.
- **National Science Council Fellowship (2009):** A postdoctoral research fellowship awarded by National Science Council of Taiwan. Worked in a Laboratory of Combinatorial Drug Discovery at the Department of Applied Chemistry, National Chiao Tung University (NCTU), Hsinchu, Taiwan with Professor Chung-Ming Sun towards the development of multidisciplinary synergistic approaches for the synthesis of novel heterocyclic non-flat scaffold libraries.
- **Indo-French Sandwich Ph.D. Scholarship (2006):** A national scholarship awarded by Science and Technology Service of the Embassy of France in India. Worked with Dr. Robert H. Dodd of Institut de Chimie des Substances Naturelles (ICSN), Centre National de la Recherche

Scientifique (CNRS), Gif-sur-Yvette, France on project entitled "Design, synthesis and bioevaluation of novel steroid-amino acid conjugates as PMB mimics."

- **Senior Research Fellowship (2005):** A national fellowship awarded by the Council of Scientific and Industrial Research (CSIR) New Delhi, India for the Ph.D. research work, carried out under the guidance of Dr. Vandana S. Pore and Dr. Braja G. Hazra of National Chemical Laboratory (NCL), Pune, India on the project entitled "Design, Synthesis and Bioevaluation of Steroidal Conjugates: A Study Directed Towards the Development of Novel Lead Molecules"
- **Junior Research Scholarship (2004):** A national fellowship awarded by Lady Tata Memorial Trust, Mumbai, INDIA for the research work carried out under the supervision of Dr. Vandana S. Pore on the project entitled "Design and synthesis of steroid based anti-fungal agents."
- **Qualified Graduate Aptitude Test in Engineering (GATE-2002):** Category: Chemical Sciences, conducted by Human Resources Ministry of Government of India in collaboration with Indian Institute of Science (IISc), Bangalore, INDIA.

- **PERSONAL:**

- Date of Birth November 25, 1979
- Nationality Indian
- Gender Male
- Marital Status Married (one daughter)

- **ACADEMIC RECORDS:**

➤ <b>Doctor of Philosophy (Ph.D.)</b> <i>Chemistry, March 2008</i>	National Chemical Laboratory (NCL) University of Pune, Pune, India
➤ <b>Title of Ph.D. Thesis</b>	Design, Synthesis and Bioevaluation of Steroidal Conjugates: A Study Directed Towards the Development of Novel Lead Molecules
➤ <b>Ph.D. Research Supervisors</b>	Dr. Mrs. Vandana S. Pore, NCL, Pune (Guide) Dr. Braja G. Hazra, NCL, Pune (Co-guide) Dr. Robert H. Dodd, CNRS, France
➤ <b>Master of Science (M.Sc.)</b> <i>Drug Chemistry, June 2002</i>	Ahmednagar College, Ahmednagar University of Pune First class with distinction
➤ <b>Bachelor of Science (B. Sc.)</b> <i>Chemistry</i>	Fergusson College, Pune University of Pune First class
➤ <b>Higher Secondary School Certificate Examination (HSC)</b> <i>Physics, Chemistry, Mathematics, Biology</i>	Maharashtra State Board Fergusson College, Pune First class
➤ <b>Secondary School Certificate Examination (SSC)</b>	Maharashtra State Board Swami Vivekananda Vidya Mandir, Pune Distinction

- **TEACHING EXPERIENCE: 06 years 03 months**

**MSc (H.S) Core 12: Chemistry of Natural Products; CHS116:** Compounds of carbon, Stereochemistry, Spectra of organic molecules; **CHE-GE1:** Fundamentals of Organic Chemistry, Aliphatic hydrocarbons; **CHE-GE3:** Amino acids, Peptides, Proteins and Carbohydrates; **GE5:** Molecules of life, Carbohydrates and lipids; Industrial Chemistry; **CHS215:** Natural resources; **CH223:** Organic compounds of nitrogen, Organosulphur compounds, Amino acids, Peptides, Proteins and Nucleic Acids; **CHE-C9:** Nitrogen containing functional groups, Stereochemical principles, conformations, steric and stereoelectronic effects; **CH323:** Organometallic Chemistry, Green Chemistry; **CH324:** Chromatographic methods; **PhD Course Work:** Scientific technical writing, Chromatography.

- **RESEARCH GROUP:**

1. Number of PhD Supervised: **05**
2. Number of ongoing PhD Students: **07**
3. Number of MSc Students: **02** (Number of MSc Thesis Supervised: **16**)
4. Post-doctoral Fellow: **01** (Tenure completed; Funded by DST-NPDF)
5. Project Assistants: **05** (Tenure completed, Funded by FCRA Australia)

- **CITATION INDICES:**

Publications: **73** Patents: **04** Citations: **1193** h-index: **23** i10-index: **38**

- **RESEARCH EXPERIENCE:**

- **Panjab University, Chandigarh** (Assistant Professor): Nov. 2014 – Till Date.  
Currently working as faculty at the Department of Chemistry, Panjab University and involved in teaching Chemistry at undergraduate to graduate level. Recently been awarded a prestigious *Ramalingaswami Fellowship* from DBT, India to work on the design and synthesis of new small molecule inhibitors of indoleamine 2,3-dioxygenase (IDO).
- **SAI Life Sciences Ltd., Hinjewadi, Pune** (Senior Research Scientist): April 2014 – Nov. 2014.  
SAI is an ideal drug discovery, development and manufacturing partner for many Pharma and Biotech clients. Worked as a Team Leader at the Medicinal Chemistry Department of SAI on a project which involves design and synthesis of focused libraries, preparation of building blocks as well as synthesis of analogues to support lead generation and optimization.
- **University of Kansas, Lawrence** (Assistant Research Professor): *March 2013 – March 2014*.  
The discovery of Toll-Like Receptor (TLR) not only facilitated understanding of the innate and adaptive immune systems but also brought up the potential to develop novel methods of vaccine and immunotherapy. The major goal of the current research work is to design and evaluate TLR agonists as effective and safe vaccine adjuvants.
- **University of Kansas, Lawrence** (Postdoctoral Researcher): *November 2010 – March 2013*.  
Worked on a federal contract entitled "Innate Immune Receptors and Adjuvant Discovery" funded by NIAID, a division of the NIH towards the design and synthesis of potent human (h)TLR 2-specific monoacyl lipopeptides. Recently, in an effort to discover new vaccine adjuvants for neonatal vaccines, an extensive SAR on TLR-8 agonistic 2-alkylthiazolo[4,5-c]quinolin-4-amine (CL075) was also carried out. Additionally, to explore new chemical space for TLR-7/8 agonists, a diverse library of imidazo[1,2-a]pyridines/pyrazines was synthesized using Groebke-Blackburn-Bienaymé multicomponent reaction. Few of the library members (3-amino-imidazo[1,2-a]pyridines) were found to be active against Methicillin-resistant *Staphylococcus aureus* whereas

a novel furo[2,3-c]pyridine chemotype was isolated for the first time in this reaction. These new molecules were found to be selective TLR-8 agonistic in cell-based NF $\kappa$ B reporter assay.

➤ **NCTU, Hsinchu, Taiwan** (Postdoctoral Research Fellow): *October 2009 – September 2010.*

A literature survey with reference to combinatorial chiral synthesis on polymer support was carried out and compiled as a book chapter published by John Wiley & Sons. Novel non-flat heterocyclic scaffolds were designed and synthesized using multidisciplinary synergistic approaches. Completed synthesis of amino acid and indoline substituted dinitrobenzene on a PEG support and its further reductive double-ring closure to structurally diverse indolo-fused pyrazino and diazepino-quinoxalines. The Pictet-Spengler type condensation reaction investigated during this work was successfully applied for the synthesis of tetracyclic benzene-fused pyrazino/diazepino indoles, unsymmetrical annulated biheterocyclic compound libraries such as benzimidazole linked indolo-benzodiazepines/quinoxalines and biprivileged molecular scaffolds like indolo-fused benzodiazepinyl/quinoxalanyl benzimidazoles.

➤ **Advinus Therapeutics, Pune, India** (Research Scientist-II): *May 2008 – September 2009.*

A complete preclinical drug discovery cycle was experienced from target scouting to candidate phase. Being a part of a discovery working group closely worked with Pharmacology and ADME, departments to develop structure-activity relationships that lead to the discovery of candidate molecules for clinical development. Synthesized several New Chemical Entities (NCEs) about 6-12 steps each (mostly 10-100 mg scale, in some cases synthesized up to 20 g scale required for animal POC). During this process extensively worked on library-based Suzuki and amide couplings and synthesized few heterocyclic glycoconjugates. Synthesized various substituted heterocycles comprising pyridine, pyrimidine, naphthyridine, pyrrole, oxazole, oxadiazole, 1,2,3-triazoles coupled with the privileged biphenyl skeleton.

➤ **NCL, Pune, India** (Graduate Student): *April 2004 – April 2008.*

The work at NCL was completely dedicated towards the synthesis of steroidal conjugates. Based on exhaustive literature survey on steroidal conjugates novel topologies were designed, synthesized and screened against microbial infections, cancer and HIV. Synthesis of C-11 azido/amino functionalized novel bile acid derivatives is one of the major outcomes during Ph.D. work. These molecules induced host cell fusion during the progress of HIV-1 infection and formed multinucleated giant cells. Mechanistic aspects for the decomposition of steroidal azidoketones to its enamines (involved both in ring-C as well as ring-A of steroids) are studied thoroughly. A novel target for the antifungal therapy was proposed for the first time.

➤ **ICSN, CNRS, France.** (Graduate Student): *September 2006 – February 2007.*

Worked on self-written project entitled "Design, synthesis and bioevaluation of novel steroid-amino acid conjugates as Squalamine and PMB mimics." Herein, we developed a protocol for the synthesis of various steroidal peptides. The resulted steroidal peptides demonstrated very good synergism effect with the known antibiotics. The synergism of the most active compounds greatly improved the activity of fluconazole and erythromycin against *C. albicans* and *E. coli*, respectively. Palladium catalyzed chemoselective one-pot reductive transformation of alkyl azides to carboxamides was the key outcome of this project.

➤ **NCL, Pune, India** (Project Assistant-II): *July 2002 – April 2004.*

Worked on the project entitled "Synthesis of aromatase inhibitors, neuroactive steroids and squalamine" sponsored by Department of Science and Technology (DST), New Delhi and was involved in total synthesis of steroid-polyamine conjugate '*Squalamine*'. Synthesized several squalamine mimics also worked on synthesis of spermine, spermidine and their analogues.

• **Extension Lectures Delivered (Travel Grant by NCTU Taiwan)**

Topic of Lecture	Institution	Date(s)
Design and Development of Toll-like Receptor 2-Specific Monoacyl Lipopeptides as Candidate Vaccine Adjuvants.	Institute of Chemistry, Academia Sinica, TAIWAN	Oct. 22, 2015
Synthesis of TLR8-Active 2,3-Diamino-furo[2,3-c]pyridines and Development of TLR2 Specific Monoacyl Lipopeptides as Candidate Vaccine Adjuvants.	National Chiao-Tung University, Hsinchu, TAIWAN	Oct. 23, 2015

• **Invited Talks Delivered**

Topic	Place	Date
Structure-Activity Relationships in Human Toll-like Receptor 2-Specific Monoacyl Lipopeptides (Invited Talk)	National Seminar of Recent Advancements and Developments in Chemical Sciences at DAV College, Abohar, INDIA	Feb. 09, 2015
2,3-Diamino-furo[2,3-c]pyridines: Novel Toll-like Receptor 8-Agonists (Invited Talk)	9 <sup>th</sup> Chandigarh Science Congress (CHASCON-2015), Panjab University, Chandigarh, INDIA	Feb. 25-27, 2015
Discovery and Development of Human Toll Like Receptor (TLR) 2-Specific Monoacyl Lipopeptides as Candidate Vaccine Adjuvants (Invited Talk)	4 <sup>th</sup> International Conference on Asian Network for Natural & Unnatural Materials, NUS, Singapore.	June 8-10, 2016.
Synthesis of 2,3-diamino-furo[2,3-c]pyridines: Exploring the biologically relevant chemical space for vaccine adjuvant drug discovery (Invited Talk)	National Seminar on Advancements in Science and Technology, PEC University of Technology, Chandigarh, India	March 04, 2017
Toll-Like Receptor 2: An Emerging Therapeutic Target (Invited Talk)	National Symposium on Recent Trends in Biotechnology and Drug Discovery, SMVDU Jammu	March 30-31, 2017
Toll Like Receptors (TLRs) and Indoleamine 2,3-Dioxygenase (IDO) as Targets for Cancer Immunotherapy (Invited Talk)	2 <sup>nd</sup> NTU-IISER Bhopal Chemistry Workshop on Synthetic and Materials Chemistry, IISER Bhopal.	January 04-06, 2018
Modulation of Immune System by TLR Agonists and IDO Inhibitors: A Novel Approach for Cancer Immunotherapy and Vaccine Adjuvant Development	National Conference on "Advanced Perspectives in Chemistry" Department of Chemistry, Savitribai Phule Pune University, Pune.	Feb. 24-25 2018
Structure Activity Relationship in TLR7/8 Agonistic Heterocyclic Small Molecules: Development of Potent Immunochemotherapeutic Agents and Vaccine Adjuvant	International Conference on Frontiers at the Chemistry-Allied Science Interface, University of Jaipur	Dec 21-22, 2018
Small Molecule Immune Potentiators: Design, Synthesis, Process Optimization and Applications	8 <sup>th</sup> Symposium on Advances in Chemical	Feb 15-16, 2019

as Vaccine Adjuvants	Sciences, Department of Chemistry, GNDU, Amritsar	
Discovery of Novel Vaccine Adjuvants	Science Day Celebrations at MCM College for Women, Chandigarh	Feb 25, 2019
Toll-Like Receptors: Novel Target for Drug Discovery	National workshop on foldscope & symposium on applied biotechnology, IIS (deemed to be university), Jaipur, Rajasthan	March 15-16, 2019
Small Molecule Immune Potentiators Targeting TLRs for the Development of Novel Chemoimmunotherapy and Vaccine Adjuvants Against Malaria	Recent Advances in Organic & Bio-organic Chemistry (RAOBC), IISER Mohali	March 22–24, 2019
Small Molecule Immune Potentiators Targeting TLRs for the Development of Novel Chemoimmunotherapy and Vaccine Adjuvants Against Malaria	SPARC International Workshop 2019, Department of Chemistry, Panjab University, Chandigarh	April 16, 2019
Design and Synthesis of New Steroid Amino Acid Conjugates: Development of New Amphiphatic Steroids, their Self Assembly and Applications	Interactions 2020 at IISER Bhopalern	Feb 07, 2020
Small Molecule Immune Potentiators Targeting TLRs for the Development of Novel Chemoimmunotherapy and Vaccine Adjuvants	10 <sup>th</sup> Annual Vaccine World Summit 2020, Hyatt Regency Pune	March 05, 2020
Applications of the Small Molecule Immune Potentiators during the workshop on the Disruptive Technologies in Shaping the Future with New Innovations	Karmaveer Bhaurao Patil College, Vashi	March 06, 2020
Small Molecule Immune Potentiators Targeting TLRs for the Development of Novel Chemoimmunotherapy and Vaccine Adjuvants	5 <sup>th</sup> USERN Congress and Prize Awarding Festival at Tehran, Iran (online lecture)	Nov 13, 2020

- **Webinars**

<b>Topic</b>	<b>Place</b>	<b>Date</b>
Synthetic Chemistry Towards the Development of Modern Vaccine Adjuvants	“Lightening the Lockdown” Series by GNDU Amritsar	May 25, 2020
Role of Synthetic Chemist in the Development of Modern Vaccines	MSPM's Shri Muktanand College, Gangapur Aurangabad, Maharashtra	May 29, 2020
Targeting Toll-Like Receptors for the Development of Vaccine Adjuvants and Immunotherapeutics	Department of Zoology Panjab University, Chandigarh	June 01, 2020
Role of Synthetic Chemist in the Development of Modern Vaccines	Dev Samaj College for Women, Ferozepur	March 05, 2022
Writing of Scientific Research Papers: How Can We Motivate Readers by Effective Writing at the DBT Sponsored Webinar	Department of Chemistry, Goswami Ganesh Dutta Sanatan Dharma College Sector 32-C, Chandigarh	Oct 23, 2021

- Recourse Person**

<b>Topic</b>	<b>Place</b>	<b>Date</b>
Chemistry is all around	Ankur School, Panjab University Campus	April 20, 2018
Scientific Technical Writing: How Can We Motivate Readers by Effective Writing	120 <sup>th</sup> Orientation Course at Panjab University, Chandigarh	Nov. 15, 2018
Chemistry of New Pattern Recognition Receptors Based Vaccine Adjuvants at the National Conference on Innovation and Sustainable Developments Made by Chemistry in 21 <sup>st</sup> Century	Hutatma Rajguru Mahavidyalaya, Rajgurunagar, Maharashtra	Jan 7-8, 2019
Chemistry is all around us: Use context-based teaching for effective chemistry education	Orientation Program at RIMC, Sec 32, Chandigarh	Jan 29, 2019
Discovery of Novel Vaccine Adjuvants at the Communicating Science for All. Pharmaceutical Chemistry: Contribution to Society	National Science Day Celebrations at MCM DAV College for Women, Chd.	Feb 25, 2019
Basics and Structure Determination using Nuclear Magnetic Resonance Spectroscopy	DBT-Star College Lecture Scheme, DAV College Jalandhar	Oct 10, 2019
(a) Green Chemistry is Changing Our World; (b) Scientific Technical Writing: Motivate Readers by Effective Writing; (c) Toll-Like Receptors: Potential Target for Drug Discovery	Faculty Development Program, ISF College of Pharmacy, Moga, Punjab	Dec 17, 2019
Co-chair of the technical section in the 2 <sup>nd</sup> International Conference on the Empirical and Theoretical Research	International Board for Education, Research and Development, Mumbai	June 5, 2020
Writing of Scientific Research Papers: How Can We Motivate Readers by Effective Writing at One Week Online Workshop on Research Methodology for Physical Sciences and Engineering	Ch. Ranbir Singh Institute of Social & Economic Change Maharshi Dayanand University, Rohtak	March 03, 2021
Toll Like Receptors: Potential Target for the Development of Modern Vaccine Adjuvants and Immunochemotherapeutics	Faculty Development Program (FDP) on Advances in Synthetic Organic Chemistry and their Applications in Medicinal Chemistry by National Institute of Technology (NIT) Calicut	August 25, 2021

- Oral Presentations Delivered**

<b>Topic</b>	<b>Place</b>	<b>Date</b>
Design and Synthesis of Novel TLR7/8-Agonists: Critical Role of Partial Charges in Determining Biological Activity of Diverse Heterocyclic Scaffolds (Oral Presentation)	10 <sup>th</sup> National Conference on Thermodynamics of Pharmaceutical, Chemical and Biological Systems at Panjab University, Chandigarh, INDIA	Nov. 20-21, 2015
PAM <sub>2</sub> CSK <sub>4</sub> Lead optimization: Development of highly potent, metabolically stable and water	XXXV Annual Conference of the Indian Council of	December 22-24, 2016

soluble monoacyl lipopeptide. (Oral Presentation)	Chemists at Haribhai V. Desai College, Pune	
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• **National/International Workshops Attended**

Contemporary Medicinal Chemistry Workshop by Prof. Prisinzano and Prof. Mitscher.	University of Kansas, Lawrence, USA	Jan 9-10, 2014
National Workshop on X-ray Powder Diffraction, Dynamic Light Scattering, Scanning & Transmission Electron Microscopies (NXDST)	Department of SAIF/CIL, PU, Chandigarh	March 15-21, 2016
National Workshop on Amphiphilic Molecules and Self-Assembly: Principles and Applications. (GIAN Course of MHRD)	Department of SAIF/CIL, PU, Chandigarh	March 22-28, 2016
National Workshop on Process Safety and Risk Engineering. (GIAN Course of MHRD)	Department of SAIF/CIL, PU, Chandigarh	November 14-19, 2016
XVIII Organic Chemistry Conference organized by National Organic Symposium Trust (NOST)	IISER, Bhopal, India	August 24-27, 2017
Newton-Bhabha Advanced Training School in Waste Water Treatment	University of Hull, UK	Sept. 19 to Oct. 07, 2016
Pedagogy Workshop for Undergraduate Science Teachers conducted by Sheffield Hallam University, UK supported by DBT, India, and British Council.	Hotel Ibiza by the Fern in Kolkata organized by IISER Pune	Sept. 23 - 26 2018

• **Organization of Workshops/Seminars**

Industry Academia Interaction Programme (IAIP2016): Current Insights and Future Avenues. Invited Dr. Ian A. Cliffe, Vice President and head of Daiichi Sankyo India Pharma Pvt. Ltd. (funded by UGC-CAS)	Convener	February 27, 2016
National Workshop on Applications of NMR and LCMS for Structural Elucidation of Small Molecules: <i>NMR-LCMS 2016</i> . Invited Prof. Suryaprakash, IISc Bangalore, Prof. Vairamani, SRM University, Chennai and Prof. Khanna, Pune University. (funded by DST-PURSE)	Convener	August 22-27, 2016
GIAN Workshop (Phase-I) on Advanced Lithium Batteries: Science and Technology. Course delivered by Prof. Julien, Prof. Mauger from France and Prof. Vijh from Canada (funded by MHRD)	Coordinator	December 12-17, 2016
GIAN Workshop (Phase-II) on Transition Metals in Organic Synthesis. Course delivered by Prof. Bates, NTU Singapore (funded by MHRD)	Coordinator & Host Faculty	June 26- July 01, 2017
GIAN Workshop (Phase-II) on Chemical Biology and Drug Discovery. Course to be delivered by Prof. Malhotra, Stanford University, USA (funded by MHRD)	Coordinator & Host Faculty	October 24-30, 2017
GIAN Workshop (Phase-II) on Primary Immunodeficiency Diseases from Bench to Bedside by Prof. Nima Rezaei, Tehran University of Medical Sciences, Iran (funded by MHRD)	Coordinator & Host Faculty	February 18-22, 2019



- **Completed Research Grants**

Project Title (role)	Funding Agency	Funds
Small Molecule Inhibitors of Indoleamine 2,3-dioxygenase (IDO): Development of New Synergistic Combinations of IDO Inhibitors and TLR Agonists as Potential Vaccine Adjuvants <b>(PI)</b>	DBT (RLF) March 2015- Feb 2020	₹ 88 Lakh
Synthesis of Substituted 1H-imidazo/Thiazolo[4,5-c]quinoline-4-amine Derivatives to Authenticate the Critical Role of Partial Charges in Determining TLR7/8 Agonistic Activity <b>(PI)</b>	UGC (Startup) Feb 2017-Jan 2019	₹ 6 Lakh
FCRA Grant for the synthesis of antimalarial compound library from Central University of Technology, Bloemfontein, South Africa <b>(PI)</b>	CUT, South Africa	₹ 2.61 Lakh (ZAR 52,428)
Design and Development of Synthetic Toll-Like Receptor Agonists for the Development of Powerful Malaria vaccines <b>(PI)</b>	PU Alumni Grant	₹ 1.25 Lakh
GLOBAL CONNECTIONS FUND, BRIDGING GRANTS: Prototyping of a next-generation enhanced vaccine technology in collaboration with Vaxine Pty. Ltd. Australia <b>(PI from India)</b>	ATSE Australia	AUD 50,000

- **Ongoing Research Grants**

Project Title (role)	Funding Agency	Funds
Industry project from FCRA Australia for the Design and Development of New Vaccine Adjuvants from Vaxine Pty. Ltd. Flinders University, Adelaide, Australia <b>(PI)</b>	Vaxine Pty. Ltd. Australia	USD 61,000 ongoing
Development of Synthetic TLR2, TLR7/8 and Mincle Agonists for Use as Part of a Combination Adjuvant in Tuberculosis Vaccines <b>(PI)</b>	MHRD-SPARC Feb 2019 – Sept 2022	44.40 Lakh
Establishment of vaccine candidate underpinning TLR and NLR dependent regulation of the immune response in visceral Leishmaniasis <b>(PI)</b>	ICMR Adhoc Aug 2022 – July 2025	53.16 Lakh
Delivery of a TLR4 and TLR7 agonists combination as an adjuvant with inactivated Newcastle Disease Virus vaccine in chicken <b>(co-PI)</b>	DST-SERB Feb 2022 – Feb 2025	62.50 Lakh
Development and evaluation of peptide-derived moieties for antimicrobial activity, particularly antifungal activity against pathogenic Zygomycetes <b>(co-PI)</b>	ICMR March 2019 – Oct 2024	21.86 Lakh

**DEEPAK B. SALUNKE, Ph.D.****LIST OF PUBLICATIONS****Book Chapters**

1. **Salunke, D. B.**; Sun, C. M. Chiral synthesis on polymer support: a combinatorial approach. In *Polymeric chiral catalyst design and chiral polymer synthesis*; Itsuno, S., Ed.; John Wiley & Sons, Inc., Hoboken, N. J. **2011**, Chapter 6, Pages 157-199.
2. Kumar, S.; Patil, M. T.; Kataria, R.; **Salunke, D. B.\*** Thiazoles: A privileged scaffold in drug discovery. *Chemical Drug Design in Walter de Gruyter GmbH, Germany* **2016**, Chapter 11 pp 243-281 (ISBN 978-3-11-036882-6).
3. Kannan, D.; Kaur, A.; **Salunke, D. B.\***; Singh, S.\* Toll-like receptor-based adjuvants - a gateway towards improved malaria vaccination in *Drug Development for Malaria. Novel Approaches for Prevention and Treatment* Kendrekar (Ed.). Wiley-VCH GmbH, of Boschstr. 12, 69469 Weinheim, Germany **2022** (ASAP).
4. Saroa, R.; Kaushik, D.; Rakha, A.; Kaur, S.\*; **Salunke, D. B.\*** Pure TLR7 Agonistic BBIQ is a Potential Adjuvant Against P. Berghei ANKA Challenge in vivo in *Drug Development for Malaria. Novel Approaches for Prevention and Treatment* Kendrekar (Ed.). Wiley-VCH GmbH, of Boschstr. 12, 69469 Weinheim, Germany **2022** (ASAP)

**Research Articles**

5. **Salunke, D. B.**; Hazra, B. G.; Pore, V. S. Bile acid-polyamine conjugates as synthetic ionophores. *Arkivoc* **2003**, 9, 115-125.
6. **Salunke, D. B.**; Hazra, B. G.; Pore, V. S.; Bhat, M. K.; Nahar, P. B.; Deshpande, M. V. New steroidal dimers with antifungal and antiproliferative activity. *J. Med. Chem.* **2004**, 47, 1591-1594.
7. **Salunke, D. B.**; Hazra, B. G.; Gonnade, R. G.; Bhadbhade M. M.; Pore, V. S. An efficient method for the synthesis of methyl 11 $\alpha$ -amino-3 $\alpha$ ,7 $\alpha$ -diacetoxy-12-oxo-5 $\beta$ -cholan-24-oate. *Tetrahedron* **2005**, 61, 3605-3612.
8. **Salunke, D. B.**; Ravi, D. S.; Pore, V. S.; Mitra, D.; Hazra, B. G. Enhancement of HIV infection and induction of syncytium formation by amino functionalized bile acid derivatives. *J. Med. Chem.* **2006**, 49, 2652-2655.
9. **Salunke, D. B.**; Hazra, B. G.; Pore, V. S. Steroidal conjugates and their pharmacological applications. *Curr. Med. Chem.* **2006**, 13, 813-847.
10. **Salunke, D. B.**; Hazra, B. G.; Gonnade, R. G.; Pore, V. S.; Bhadbhade M. M. Molecular association via halogen bonding and other weak interactions in the crystal structures of 11-bromo-12-oxo-5 $\beta$ -cholan derivatives. *J. Mol. Structure* **2008**, 892, 246-253.
11. Bavikar, S. N.; **Salunke D. B.**; Hazra, B. G.; Pore, V. S.; Dodd, R. H.; Thierry, J.; Shirazi, F.; Deshpande, M. V.; Kadreppa, S.; Chattopadhyay, S. Synthesis of chimeric tetrapeptide-linked cholic acid derivatives: Impending synergistic agents. *Bioorg. Med. Chem. Lett.* **2008**, 18, 5512-5517.

12. Bavikar, S. N.; **Salunke D. B.**; Hazra, B. G.; Pore, V. S.; Thierry, J.; Dodd, R. H. Pd-catalyzed one-pot chemoselective hydrogenation protocol for the preparation of carboxamides directly from azides. *Tetrahedron Lett.* **2010**, *51*, 3815-3819.
13. Lai, J. J.; **Salunke D. B.**; Sun, C. M. Microwave-assisted divergent synthesis of indolo-fused pyrazino/diazepinoquinoxalinones on PEG support. *Org. Lett.* **2010**, *12*, 2174-2177.
14. Lin, P. T.; **Salunke, D. B.**; Chen, L. H.; Sun, C. M. Soluble polymer supported divergent synthesis of tetracyclic benzene-fused pyrazino/diazepino indoles: an advanced synthetic approach to bioactive scaffolds. *Org. Biomol. Chem.* **2011**, *9*, 2925-2937.
15. Chen, L. H.; Chang, C. M.; **Salunke, D. B.**; Sun, C. M. Divergent synthesis of unsymmetrical annulated biheterocyclic compound libraries: benzimidazole linked indolo-benzodiazepines/quinoxaline. *ACS Comb. Sci.* **2011**, *13*, 391-398.
16. Bhuniya, D.; Umrani, D.; Dave, B.; **Salunke, D.**; Kukreja, G.; Gundu, J.; Naykodi, M.; Shaikh, N. S.; Shitole, P.; Kurhade, S.; De, S.; Majumdar, S.; Reddy, S. B.; Tambe, S.; Shejul, Y.; Chugh, A.; Palle, V. P.; Mookhtiar, K. A.; Cully, D.; Vacca, J.; Chakravarty, P. K.; Nargund, R. P.; Wright, S. D.; Graziano, M. P.; Singh, S. B.; Roy, S.; Cai, T.Q. Discovery of a potent and selective small molecule hGPR91 antagonist. *Bioorg. Med. Chem. Lett.* **2011**, *21*, 3596-3602.
17. Shingate, B. B.; Hazra, B. G.; **Salunke, D. B.**; Pore, V. S.; Shirazi, F.; Deshpande, M. V. Stereoselective synthesis and antimicrobial activity of steroidal C-20 tertiary alcohols with thiazole/pyridine side chain. *Eur. J. Med. Chem.* **2011**, *46*, 3681-3689.
18. Shingate, B. B.; Hazra, B. G.; **Salunke, D. B.**; Pore, V. S.; Shirazi, F.; Deshpande, M. V. Synthesis and antimicrobial activity of steroidal C-20 tertiary alcohols with vinyl side chain. *Chemistry & Biology Interface* **2011**, *1*, 198-208.
19. Shingate, B. B.; Hazra, B. G.; **Salunke, D. B.**; Pore, V. S. RuCl<sub>3</sub>-TBHP mediated allylic oxidation of  $\Delta^8(9)$  lanosterol derivatives. *Tetrahedron Lett.* **2011**, *52*, 6007-6010.
20. Barve, I. J.; Chen, C. Y.; **Salunke, D. B.**; Chung, W. S.; Sun, C. M. Design and synthesis of new biprivileged molecular scaffolds: indolo-fused benzodiazepinyl/quinoxalinyl benzimidazoles. *Chem. Asian J.* **2012**, *7*, 1684-1690 (also published as **ChemViews** magazine article: <http://www.chemistryviews.org/details/ezone/1853379/NewBiprivilegedMolecularScaffolds.html>).
21. Antinarelli, L. M. R.; Carmo, A. M. L.; Pavan, F. R.; Leite, C. Q. F.; Da Silva, A. D.; Coimbra, E. S.; **Salunke, D. B.** Increase of leishmanicidal and tubercular activities using steroids linked to aminoquinoline. *Org. Med. Chem. Lett.* **2012**, *2*:16, 8 pp. DOI: 10.1186/2191-2858-2-16.
22. **Salunke, D. B.**; Shukla, N. M.; Yoo, E.; Crall, B. M.; Balakrishna, R.; Malladi, S. S.; David, S. A. Structure-activity relationships in Human toll-like receptor 2-specific monoacyl lipopeptides. *J. Med. Chem.* **2012**, *55*, 3353-3363.
23. Shukla, N. M.; **Salunke, D. B.**; Yoo, E.; Mutz, C.; Balakrishna, R.; David, S. A. Antibacterial activities of Groebke-Blackburn-Bienaymé-derived imidazo[1,2-a]pyridin-3-amines. *Bioorg. Med. Chem.* **2012**, *20*, 5850-5863.
24. **Salunke, D. B.**; Yoo, E.; Shukla, N. M.; Malladi, S. S.; Balakrishna, R.; Serafin, K. J.; Day, V. W.; Wang, X. B.; David, S. A. Structure-activity relationships in human toll-like receptor 8-active 2,3-diamino-furo[2,3-c]pyridines. *J. Med. Chem.* **2012**, *55*, 8137-8151.
25. Shukla, N. M.; **Salunke, D. B.**; Balakrishna, R.; Mutz, C. A.; Malladi, S. S.; David, S. A. Potent adjuvant activity of a pure TLR7-agonistic imidazoquinoline dendrimer. *PLoS ONE* **2012**, *7*, e43612.

26. Kokatla, H. P.; Yoo, E.; **Salunke, D. B.**; Ng, C. F.; Balakrishna, R.; Malladi, S. S.; Fox, L. M.; David, S. A. Structure-activity relationships in toll-like receptor 8 agonistic 2-alkylthiazolo[4,5-c]quinolines. *Org. Biomol. Chem.* **2013**, *11*, 1179-1198.
27. **Salunke, D. B.**; Connelly, S. W.; Shukla, N. M.; Hermanson, A. R.; Fox, L. M.; David, S. A. Design and development of stable, water-soluble, human toll-like receptor 2-specific, monoacyl lipopeptides as candidate vaccine adjuvants. *J. Med. Chem.* **2013**, *56*, 5885-5900. (also published in SciBX, a publication about translational science produced by Nature Publishing Group. SciBX 6(29); doi:10.1038/scibx.2013.773).
28. Shingate, B. B.; Hazra, B. G.; **Salunke, D. B.**; Pore, V. S.; Shirazi, F.; Deshpande, M. V. Synthesis and antimicrobial activity of novel oxysterols from lanosterol. *Tetrahedron* **2013**, *69*, 11155-11163.
29. Yoo, E.; **Salunke, D. B.**; Sil, D.; Guo, X.; Sayler, A. C. D.; Hermanson, A. R.; Kumar, M.; Malladi, S. S.; Balakrishna, R.; Thompson, W. H.; Tanji, H.; Ohto, U.; Shimizu, T.; David, S. A. Determinants of activity at human Toll-like Receptors 7 and 8: Quantitative structure-activity relationship (QSAR) of diverse heterocyclic scaffolds. *J. Med. Chem.* **2014**, *57*, 7955-7970.
30. Patil, M. T.; Poonam; Pore, V. S.; **Salunke, D. B.\*** Design and Synthesis of New Lanosterol/Triazole Conjugates. *Panjab University Research Journal (Science)*, **2016**, 66.
31. Kaur, A.; Gupta, G.; Ibhaddon, A. O.; **Salunke, D. B.**; Sinha, A. S. K.; Kansal, S. K. A facile synthesis of silver modified ZnO nanoplates for efficient removal of ofloxacin drug in aqueous phase under solar irradiation. *Journal of Environmental Chemical Engineering*, **2017** DOI: 10.1016/j.jece.2017.05.032
32. Kaur, A.; **Salunke, D. B.**; Umar, A.; Mehta, S. K.; Sinha, A.S.K.; Kansal, S. K. Visible light driven photocatalytic degradation of fluoroquinolone levofloxacin drug using Ag<sub>2</sub>O/TiO<sub>2</sub> quantum dots: a mechanistic study and degradation pathway. *New J. Chem.* **2017**, DOI: 10.1039/C7NJ02053H.
33. Dhir, S. P.; **Salunke, D. B.**; Kaur, A.; Dhir, S. Mystery of Mimosa pudica. *International Journal of Botany Research*. **2017**, *7*, 41-44.
34. Dhole, S.; Liao, J-Y; Kumar, S.; **Salunke, D. B.**; Sun, C-M. Regioselective Synthesis of Angular Isocoumarinselenazoles: A Benzoselenazole-directed, Site-specific, Ruthenium-catalyzed C(sp<sup>2</sup>)-H Activation. *Adv. Synth. Catal.* **2018**, *360*, 942-950.
35. Kaur, A.; Poonam, Patil, M. T.; Mehta, S. K.; **Salunke, D. B.\*** An efficient and scalable synthesis of potent TLR2 agonistic PAM<sub>2</sub>CSK<sub>4</sub>. *RSC Adv.* **2018**, *8*, 9587-9596.
36. Kaur, A.; Kannan, D.; Mehta, S. K.; Singh, S; **Salunke, D. B.\*** Synthetic Toll-Like Receptor Agonists for the Development of Powerful Malaria Vaccines: A Patent Review. *Expert Opinion on Therapeutic Patents* **2018**, *28*, 837.
37. Gorki, V.; Singh, R.; Walter, N. S.; Bagai, U.;\* **Salunke, D. B.\*** Synthesis and Evaluation of Antiplasmodial Efficacy of  $\beta$ -Carboline Derivatives against Murine Malaria. *ACS Omega* **2018**, *3*, 13200-13210.
38. Kanwar, R.; Rathee, J.; **Salunke, D. B.**; Mehta, S. K. Green Nanotechnology-Driven Drug Delivery Assemblies. *ACS Omega* **2019**, *4*, 8804-8815.
39. Singla, P.; Dalal, P.; Kaur, M.; Arya, G. Nimesh, S.; Singh, R.;\* **Salunke, D. B.\*** Bile Acid Oligomers and their Combination with Antibiotics to Combat Bacterial Infections. *J. Med. Chem.*, **2018**, *61*, 10265-10275.

40. Saroa, R.; Kaushik, D.; Bagai, U.; Kaur, S.; **Salunke, D. B.\*** Efficacy of TLR7 Agonistic Imidazoquinoline as Immunochemotherapeutic Agent Against Murine Cerebral Malaria. *Bioorg. Med. Chem. Lett.* **2019**, *29*, 1099-1105.
41. Kawal Preet, Gupta, G.; Kotal, M.; Kansal, S. K.; **Salunke, D. B.**; Sharma, H. K.; Sahoo, S. C.; Van Der Voort, P.; Roy, S. Mechanochemical Synthesis of a New Triptycene Based Imine Linked Covalent Organic Polymer for Degradation of Organic Dye, *Crystal Growth & Design* **2019**, *19*, 2525-2530.
42. Singla, P.; **Salunke, D. B.\*** Recent Advances in Steroid Amino Acid Conjugates: Old Scaffolds with New Dimensions. *Eur. J. Med. Chem.* **2020**, *187*, 111909-111938.
43. Rathee, J.; Kanwar, R.; Kaushik, D.; **Salunke, D. B.\***; Mehta, S. K\*. Niosomes as Efficient Drug Delivery Modules for Encapsulation of Toll-Like Receptor 7 Agonists andIDO-Inhibitor. *Applied Surface Science* **2020**, *505*, 144078.
44. Singh, R.; Jaisingh, A.; Maurya, I. K.; **Salunke, D. B.\*** Design, Synthesis and Bio-evaluation of C-1 Alkylated Tetrahydro- $\beta$ -carboline Derivatives as Novel Antifungal Lead Compounds. *Bioorg. Med. Chem. Lett.* **2020**, *30*, 126869.
45. Singla, P.; Kaur, M.; Kumari, A.; Kumari, L.; Pawar, S. V.; Singh, R.; **Salunke, D. B.** Facially Amphiphilic Cholic Acid-Lysine Conjugates as Promising Antimicrobials. *ACS Omega* **2020**, *5*, 3952.
46. Kaushik, D.; Dhingra, S.; Patil, M. T.; Piplani, S.; Khanna, V.; Honda-Okubo, Y.; Li, L.; Fung, J.; Petrovsky, N.;\* **Salunke, D. B.\*** BBIQ, a Pure TLR7 Agonist is an Effective Influenza Vaccine Adjuvant. *Human Vaccines and Immunotherapeutics* **2020**, *16(8)*, 1989-1996. DOI: 10.1080/21645515.2019.1710409.
47. Gorki, V.; Singh, R.; Chauhan, M.; Dhingra, N.; **Salunke, D. B.\***; Kaur, S\*.  $\beta$ -Carboline Derivatives Tackling Malaria: Biological Evaluation and Docking Analysis. *ACS Omega* **2020**, *5*, 29, 17993–18006.
48. Kaur, A.; Pannu, A.; Brar, D. S.; Mehta, S. K.; **Salunke, D. B.\*** Decarboxylative Etherification and Esterification with di-*tert*-Butyl Dicarboxylate using Yb(OTf)<sub>3</sub> as a Catalyst. *ACS Omega* **2020**, *5*, 21007–21014.
49. Singh, R.; Kumar, S.; Patil, M.; Sun, C-M.; **Salunke, D. B.\*** Post-Pictet-Spengler Cyclization (PPSC): A Strategy to Synthesize Polycyclic  $\beta$ -Carboline-Derived Natural Products and Biologically Active *N*-Heterocycles. *Adv. Synth. Catalysis* **2020**, *362*, 4027-4077. DOI: 10.1002/adsc.202000549.
50. Singh, R.; Pandrala, M.; Malhotra, S. V.; Pawar, G. P.; Chaudhari, V. D.; **Salunke, D. B.\*** Design, synthesis, anti-cancer screening and structure activity relationship studies of biphenyl linked fused imidazoles. *J. Ind. Chem. Soc.* **2020**, *97*, 1237-1244 (invited article in a special issue on "Medicinal Chemistry")
51. Hanaei, S.; Takian, A.; Majdzadeh, R.; Maboloc, C.; Grossmann, I.; Gomes, O.; . . . Salunke, D. B.; Rezaei, N. Emerging Standards and the Hybrid Model for Organizing Scientific Events During and After The COVID-19 Pandemic. *Disaster Medicine and Public Health Preparedness* **2020**, 1-17. doi:10.1017/dmp.2020.406
52. Momtazmanesh, S; Rahmani, F.; Delavari, F.; Vahedi, Z.; Ebadirad S.; Keshavarz-Fathi, M.; Moallemian, M.; Ashkevarian, S.; Kolahi, M. R.; Samimiati, A.; Raei, N.; Rouzrokh P, Alesaeidi S, Jaberipour A, Bakhshi S, Paryad-Zanjani S, Perc M, Q. Uddin L, Allali A, Sullivan K, Taher A, Baris S, Ozen A, Karakoc-Aydiner E, Carlos Aldave J, Hamzah Abdul Latiff A, Al-Herz W, Phantumvanit P, Stashchak A, Kryvenko O, Stashchak M, Utomo D, **Salunke, D.B.**; Kelishadi R,

- Hedayati M, MirzaHosseini S, Bondarenko A, Goudouris E, Condino-Neto A, Nuno Vieira D, Ulrichs T, Pavalkis D, Rosivall L, Ochs H, Rezaei N. U100: An Innovative USERN Platform for Education and Research Without Borders. *Acta Med Iran.* **2020**, *58*, 1-3.
53. Singla, P.; Kanwar, R.; Sharma, R.; Mehta, S. K.; **Salunke, D. B.\*** Proficiency of Nanostructured Lipid Carriers for the Formulation of Amphiphilic Bile Acid Oligomers. *Colloids and Surfaces A: Physicochemical and Engineering Aspects Biointerfaces* **2021**, *611*, 125841. <https://doi.org/10.1016/j.colsurfa.2020.125841>
54. Momtazmanesh S, Ochs HD, Uddin LQ, Perc M, Routes JM, Vieira DN, Al-Herz W, Baris S, Prando C, Rosivall L, Abdul Latiff AH, Ulrichs T, Roudenok V, Aldave Becerra JC, Salunke DB, Goudouris E, Condino-Neto A, Stashchak A, Kryvenko O, Stashchak M, Bondarenko A, Rezaei N. All together to Fight COVID-19. *Am J Trop Med Hyg.* **2020**, *102*, 1181-1183.
55. Frolova, S. G.; Klimina, K. M.; Kumar, R.; Vatlin, A. A.; Salunke, D. B.; Kendrekar, P.; Danilenko, V. N.; Maslov, D. A, Identification of Mutations Conferring Tryptanthrin Resistance to Mycobacterium smegmatis. *Antibiotics* **2021**, *10*, 6. <https://doi.org/10.3390/antibiotics10010006>
56. Kaur, A.; Kaushik, D.; Piplani, S.; Mehta, S. K.;\* Petrovsky, N.;\* **Salunke, D. B.\*** TLR2 Agonistic Small Molecules: Detailed Structure–Activity Relationship, Applications, and Future Prospects. *J. Med. Chem.* **2021**, *64*, 233-278. (Perspective: DOI: 10.1021/acs.jmedchem.0c01627
57. Singh, R.; Salunke, D. B. Diverse chemical space of indoleamine-2,3-dioxygenase 1 (Ido1) inhibitors. *Eur. J. Med. Chem.* **2021**, *211*, <https://doi.org/10.1016/j.ejmech.2020.113071>
58. Singh, R.; Kumar, R.; Pandrala, M.; Kaur, P.; Gupta, S.; Tailor, D.; Malhotra, S. V.; **Salunke, D. B.\*** Facile synthesis of C6-substituted benz[4,5]imidazo[1,2-a]quinoxaline derivatives and their anticancer evaluation. *Archiv der Pharmazie* **2021**, Ahead of Print.
59. Kaushik, D.; Kaur, A.; Petrovsky, N.\* Salunke, D. B.\* Structural evolution of toll-like receptor 7/8 agonists from imidazoquinolines to imidazoles. *RSC Med. Chem.* **2021**, *12*, 1065-1120.
60. Walter, N. S.; Gorki, V.; Singh, R.; Salunke, D. B.; Kaur, S. Exploring the antiplasmodal efficacy of erucic acid and its derivative isolated from *Thlaspi arvense* D. C. (Brassicaceae). *South African Journal of Botany*, **2021**, *139*, 158-166.
61. Kamboj, A.; Sihag, B.; Brar, D. S.; Kaur, A.; Salunke, D. B. Structure activity relationship in  $\beta$ -carboline derived anti-malarial agents. *Eur. J. Med. Chem.* **2021**, *221*, 113536.
62. Momtazmanesh, S.; Samieefar, N. Uddin, L. Q.; Ulrichs, T.; Kelishadi, R.; Roudenok, V.; Karakoc-Aydiner, E.; Salunke, D. B. .... Rezaei, N. Socialization During the COVID-19 Pandemic: The Role of Social and Scientific Networks During Social Distancing. *Adv Exp Med Biol.* **2021**, *1318*, 911-921. doi: 10.1007/978-3-030-63761-3\_51. PMID: 33973219.
63. Kaushik, D.; Granato, J. T.; Macedo, G. C.; Dib Paula R. B.; Coimbra, E. S.; Piplani, S.; Fung, J.; Petrovsky, N.; Salunke, D. B. Toll-like receptor-7/8 agonist kill *Leishmania amazonensis* by acting as pro-oxidant and pro-inflammatory agent. *J. Pharm Pharmacology*, *73*, 2021, 1180–1190
64. Shoket, H.; Pnadita, M.; Sharma, M.; Kumar, R.; Rakwal, A.; Wazir, S.; Verma, V.; **Salunke, D. B.**; Bairwa, N. K. Genetic interaction between F-box motif encoding YDR131C and retrograde signalling-related RTG1 regulates the stress response and apoptosis in *Saccharmyces cerevisiae*. *J. Biochemical and molecular toxicology* **2021**, <https://doi.org/10.1002/jbt.22864>.
65. Dyavar, R. S.; Singh, R.; Emani R.; Pawar, P. G.; Chaudhari, D. V.; Podany, T. P.; Avedissian, N. S.; Fletcher, V. C.; **Salunke, D. B.** Role of Toll- like receptor 7/8 pathways in regulation of

- interferon response and inflammatory mediators during SARS – CoV2 infection and potential therapeutic options. *Biomed. Pharmacother.* **2021**, *10(141)*, 111794.
66. Rathee, J.; Kaur, A.; Kanwar, R.; Kaushik, D.; Kumar, R.; **Salunke, D. B.\***, Mehta, S.K. Polymeric Nanoparticles as a Promising Drug Delivery Platform for the Efficacious Delivery of Toll-Like Receptor 7/8 Agonists and IDO-Inhibitor. *Colloids and Surfaces A: Physicochemical and Engineering Aspects* **2022**, *632*, 127764.
  67. Kaur, M.; Singh, R.; Patil, M.T.; Kumar, K.; Sahoo, S. C.; Singh, K. N.; Chaudhari, V. D.; **Salunke, D. B.** Microwave-assisted Groebke-Blackburn-Bienayme multicomponent reaction to synthesize imidazo fused heterocycles via in-situ generated isocyanides from N-formylamines: An undergraduate organic laboratory experiment. *J. Het. Chem.* **2022**, *59*, 319-328.
  68. Kaur, A.; Kanwar, R.; Kaushik, D.; Sakala, I. G.; Honda-Okubo, Y.; Petrovsky, N.; **Salunke, D. B.**; Mehta, S. K. Combined delivery of TLR2 and TLR7 agonists by Nanostructured lipid carriers induces potent vaccine adjuvant activity in mice. *International Journal of Pharmaceutics (Amsterdam, Netherlands)* **2022**, *613*, 121378.
  69. Singh, R.; Kumar, R.; Kaur, M.; Patil, M.T.; Sahoo, S. C.; **Salunke, D. B.** Groebke-Blackburn-Bienayme multicomponent reaction coupled with unconventional Pictet-Spengler cyclization for the synthesis of imidazo[4,5-b]pyridine fused polycyclic heterocycles. *J. Het. Chem.* **2022**, *59*, 1007-1015.
  70. Kaushik, D.; Kaur, M.; Mutreja V.; Pathania, K.; **Salunke, D. B.**; Sahoo, S. C.; Saini, V.; Pawar, S. V.; Kansal, S. K.; Mehta, S. K. Synthesis of quinoline based molecular probes for detection of nitric oxide. *Dyes and Pigments* **2022**, *201*, 110226.
  71. Kaur, A.; Piplani, S.; Kaushik, D.; Fung, J.; Sakala, I. G.; Honda-Okubo, Y.; Mehta, S. K.; Petrovsky, N.; **Salunke, D. B.\*** Stereoisomeric Pam<sub>2</sub>CS based TLR2 agonists: synthesis, structural modelling and activity as vaccine adjuvants. *RSC Med Chem* **2022**, *13*, 622-637.
  72. Kaur, A.; Rathee, J.; Kanwar, R.; Kaushik, D.; **Salunke, D. B.**; Mehta, S. K. TLR2 agonistic lipopeptide enriched PLGA nanoparticles as combinatorial drug delivery vehicle. *Colloids and Surfaces, A: Physicochemical and Engineering Aspects* **2022**, *647*, 129084.
  73. Kaur, A.; Baldwin, J.; Brar, D.; **Salunke, D. B.**; Petrovsky, N. Toll-like receptor (TLR) agonists as a driving force behind next-generation vaccine adjuvants and cancer therapeutics. *Curr. Opinion Chem Bio* **2022**, *70*, 102172.

### **Patents:**

1. **Salunke, D. B.**; Hazra, B. G.; Pore, V. S.; Bhat, M. K. Bile acid derived steroidal dimers with amphiphilic topology having antiproliferative activity. U.S. Pat. Appl. Publ. (2006), US 20060003974 A1 20060105. IN 2004DE01213 A. Indian Pat. Appl. (**2006**), IN 2004DE01213 A 20060623.
2. **Salunke, D. B.**; Hazra, B. G.; Pore, V. S.; Nahar, P. B.; Deshpande, M. V. Bile acid derived steroidal dimers with novel amphiphilic topology having antifungal activity. U.S. Pat. Appl. Publ. (2005), US 20050222115 A1 20051006. Indian Pat. Appl. (**2009**), IN 2005DE00704 A 20090619.
3. **Salunke, D. B.**; Guo, X.; David, S. A. Toll-like receptor 2-agonistic lipopeptides and method of making the same. US967818 B2 (**US Patent Granted June 13, 2017**).

4. Awasthi, A.; **Salunke, D. B.**; Dalal R.; Madan U.; Sadhu S.; Singla P.; Kamboj A.; Asthana S. Novel Cholic Acid derivatives for the treatment and prevention of autoimmune diseases and uses thereof. Patent application No. 202211005368.