

Curriculum Vitae

Dr. Rakesh Kumar Singh

Associate Professor & Head

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Highlights

- ❖ A total of 17 years of industrial and academic research experience
- ❖ Over 11 years of scientific industrial drug discovery and research experience and 6 years of academic research experience in core Pharmacology along with administrative roles in planning, budgeting, and implementing new scientific programs in collaboration with other departments.
- ❖ Adroit in selection and validation of novel therapeutic targets in chronic airway inflammatory diseases (asthma, COPD), autoimmune diseases (RA, psoriasis), and neurodegenerative diseases.
- ❖ Actively involved as a team player in a scientific group and have the experience of handling scientific projects as team lead, overseeing project progress and to collaborate with cross functional teams.
- ❖ Strong communication and interpersonal skills, Detail-oriented with ability to manage multiple tasks and to perform under stringent timelines.

Professional Experience

- ❖ Currently as Associate Professor and Head, Pharmacology, National Institute of Pharmaceutical Education and Research-Raebareli, Lucknow
- ❖ 2019-2020: Associate Professor, Pharmacology, Amity University, Gurgaon, Haryana.
- ❖ 2017-2019: Assistant Professor, Pharmacology, School of Pharmaceutical Sciences, Apeejay Stya University, Gurgaon, Haryana.
- ❖ 2010 - 2017: Senior Research Scientist, Pharmacology, Daiichi Sankyo India Pharma Pvt. Ltd., Gurgaon, Haryana.
- ❖ 2006 - 2010: Research Scientist, Pharmacology, Ranbaxy Research Laboratories, Gurgaon.

1. Profile Summary

Dr Rakesh K Singh has Joined NIPER-Raebareli as Associate Professor in the Department of Pharmacology & Toxicology in February 2020. He is also serving as the Head of the Department since March 2021. His broad research area includes translational research on the molecular pathways involved in inflammation in neurodegenerative disorders, airway disorders, and chronic autoimmune diseases.

Dr. Singh earned his PhD in Pharmacology from Jamia Hamdard, New Delhi, and M.S. (Pharm) in Pharmacology and Toxicology from NIPER, Mohali, India. He has a total of 17 years of experience out of which, he has spent over 12 years of valuable industrial research experience in New Drug Discovery in well-known multi-national companies (Ranbaxy Research Laboratories and Daiichi Sankyo India Pharma Pvt. Ltd, based in Gurgaon) in India. During his tenure as Industrial scientist in New Drug Discovery, he worked on exploration, selection, and validation of novel therapeutic targets in the broad area of chronic airway disorders (asthma, COPD) and chronic autoimmune inflammatory diseases (rheumatoid arthritis, and psoriasis). He has actively been involved as a team player in a scientific group and have the experience of handling scientific projects as team lead, overseeing project progress and to collaborate with cross functional teams.

- a) **Area of Interest:** Basic and Translational research on chronic autoimmune inflammatory diseases, neuroinflammatory and neurodegenerative diseases
- b) **Subject Area:** Pharmacology & Toxicology
- c) **Disease Area:** Neuroinflammation in Alzheimer's disease, Chronic inflammatory diseases

2. Publication Details

- 1) AS Gautam, CB Pulivarthi, RK Singh. Proinflammatory IL-17 levels in serum/cerebrospinal fluid of patients with neurodegenerative diseases: a meta-analysis study. *Naunyn-Schmiedeberg's Arch Pharmacol.* 2022, 1-12. doi.org/10.1007/s00210-022-02357-6
- 2) A Urati, M Dey, AS Gautam, RK Singh. Iron-induced cellular in vitro neurotoxic responses in rat C6 cell line. *Environmental Toxicology* 2022; 37(8):1968-1978.
- 3) D Goswami, U Anuradha, A Angati, N Kumari, RK Singh. Pharmacological and pathological relevance of S100 proteins in neurological disorders. *CNS & Neurological Disorders Drug Targets.* 2022; 10.2174/1871527322666221128160653.
- 4) KB Sathua, RK Singh. Mitochondrial biogenesis alteration in arsenic-induced carcinogenesis and its therapeutic interventions. *Toxin Reviews,* 1-13, 2022. doi.org/10.1080/15569543.2022.2124420.
- 5) MK Seth, RK Singh, ME Hussain, S Pasha, M Fahim. Toxicity Study of 3-Thienylalanine-Ornithine-Proline (TOP) Using as Novel ACE Inhibitor. *International Journal of Peptide Research and Therapeutics* 28 (5), 1-11, 2022.
- 6) M Dey, RK Singh. Chronic oral exposure of aluminum chloride in rat modulates molecular and functional neurotoxic markers relevant to Alzheimer's disease. *Toxicology Mechanisms and Methods,* 1-12; 2021.
- 7) M Dey, RK Singh. Neurotoxic effects of aluminium exposure as a potential risk factor for Alzheimer's disease. *Pharmacological Reports,* 1-12.
- 8) SK Pandey, RK Singh. Recent developments in nucleic acid-based therapies for Parkinson's disease: Current status, clinical potential, and future strategies. *Frontiers in Pharmacology* 13. 2022.
- 9) M Dey, RK Singh. Exposure of aluminium to C6 glioma cells modulates molecular and functional neurotoxic markers. *Journal of Biochemical and Molecular Toxicology,* e23210.

- 10) S Patel, AV Bansod, R Singh, GL Khatik. BACE1: A Key Regulator in Alzheimer's Disease Progression and Current Development of its Inhibitors. *Current Neuropharmacology* 20 (6), 1174-1193; 2022.
- 11) Manik M, Singh RK. Role of toll-like receptors in modulation of cytokine storm signaling in SARS-CoV-2-induced COVID-19. *Journal of Medical Virology* 2021; <https://doi.org/10.1002/jmv.27405>. Impact factor 2.37.
- 12) Dey M, Singh RK. Possible Therapeutic Potential of Cysteinyl leukotriene receptor antagonist, Montelukast in treatment of SARS-CoV-2 induced COVID-19. *Pharmacology* 2021; 106:469–476. Impact factor 2.567.
- 13) AK Datusalia, G Singh, N Yadav, S Gaun, M Manik, RK Singh. Targeted delivery of montelukast for treatment of Alzheimer's disease *CNS Neurol Dis Drug Targets*, <https://doi.org/10.2174/1871527320666210902163756>. Impact factor 4.388.
- 14) Urati A, Kumar A, Singh RK. The clinical correlation of proinflammatory and anti-inflammatory biomarkers with Alzheimer disease: a meta-analysis. *Neurological Science* 2021; Impact factor: 3.307.
- 15) Srivastava S, Rajopadhye R, Dey M, Singh RK. Inhibition of MK2 as a potential therapeutic target to control neuroinflammation in Alzheimer's disease. *Expert Opinion on Therapeutic Targets*. 2021; 25(4):243-247; Impact factor: 6.902.
- 16) Goyal D, Ali SA, Singh RK. Emerging role of gut microbiota in modulation of neuroinflammation and neurodegeneration with emphasis on Alzheimer's disease. *Prog Neuropsychopharmacol Biol Psychiatry*. 2020; 106:110112. Impact factor: 5.067.
- 17) Tandon R, Soni A, Singh RK, Sodhi R, Seth MK, Sinha S, Sahdev S, Dhage G, Das B, Dastidar SG, Shriumalla RK, Yonesu K, Marumoto S, Nagayama T. Identification of novel Urotensin-II receptor antagonists with potent inhibition of U-II induced pressor response in mice. *Eur J Pharmacol*. 2020; 886:173391. Impact factor: 4.432.

- 18) Singh RK. Antagonism of cysteinyl leukotrienes and their receptors as a neuroinflammatory target in Alzheimer's disease. *Neurol Sci.* 2020; 41(8):2081-2093. Impact factor: 3.307.
- 19) Singh RK. Recent Trends in the Management of Alzheimer's disease: Current Therapeutic Options and Drug Repurposing Approaches. *Curr Neuropharmacol.* 2020; 18(9):868-882. Impact factor: 7.363.
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- 21) Singh RK, Najmi AK. Novel Therapeutic Potential of Mitogen-Activated Protein Kinase Activated Protein Kinase 2 (MK2) in Chronic Airway Inflammatory Disorders. *Curr Drug Targets.* 2018 (doi: 10.2174/1389450119666180816121323). Impact factor: 3.465.
- 22) Singh RK, Diwan M, Dastidar SG, Najmi AK. Differential effects of p38 and MK2 kinase inhibitors on the inflammatory and toxicity biomarkers in vitro. *Hum Exp Toxicol.* 2018;37(5):521-531. Impact factor: 2.903.
- 23) Singh RK, Najmi AK, Dastidar SG. Biological Functions and Role of Mitogen-Activated Protein Kinase Activated Protein Kinase 2 (MK2) in Inflammatory Diseases. *Pharm Rep.* 2017; 69:746-756, Impact factor: 3.024.
- 24) Singh RK, Tandon R, Dastidar SG, Ray A. A review on leukotrienes and their receptors with reference to asthma. *J Asthma.* 2013; 50(9):922-931, Impact factor: 1.746.
- 25) Gupta S, Malhotra S, Sinha S, Singh SK, Singh RK, Krishna S, Chhabra P, Chaira T, Kannayiram J, Sharma P, Aeron S, Kaur J, Kumar N, Sattigeri J, Shirumalla RK, Paliwal J, Dastidar SG, Cliffe IA, Ray A, Bhatnagar P. Pharmacodynamic and pharmacokinetic profile of RBx 343E48F0: A novel, long-acting muscarinic receptor antagonist. *Eur J Pharmacol.* 2011; 658(2-3):219-228, Impact factor: 4.432.

- 26) Singh RK, Gupta S, Dastidar S, Ray A. Cysteinyl Leukotrienes and Their Receptors: Molecular and Functional Characteristics. *Pharmacol.* 2010; 85:336-349, Impact factor: 2.567.
- 27) Nanda K, Chatterjee M, Gupta S, Singh RK, Tiwari A, Gupta D, Ray A. Functional screening of adrenergic receptors by measuring intracellular calcium using flexstation scanning fluorimeter. *Biotechnol J.* 2009; 4:417-422, Impact factor: 4.677.
- 28) Gupta S, Singh RK, Nanda K, Chatterjee M, Tiwari A, Sundaram S, Gupta D, Chugh A, Dastidar S, Ray A. Ratiometric Ca⁺² measurement in human recombinant muscarinic receptor subtypes using flexstation scanning. *J Recept Sig Transd.* 2009; 29(2):100-106, Impact factor: 2.2.
- 29) Gupta S, Singh RK, Dastidar S, Ray A. Cysteine cathepsin S as an immunomodulatory target: present and future trends. *Expert Opin Ther Targets.* 2008; 12(3):291-299, Impact factor: 6.902.
- 30) RK Singh, S Gupta, P Tiwari, S Saini, R Malik, R Kant, SG Dastidar, A Ray. A fluorescent based enzyme assay for recombinant human lipoxygenase enzyme isoforms. *Pharmacologia* 3 (9), 387-396.
- 31) RK Singh, E Dhanaraj, P Ramarao. Effect of neuronal NOS selective inhibitor, 7-nitroindazole on inhibitory effect of calcium channel blockers on development of tolerance to morphine-induced analgesia. *Pharmacologia* 4 (1), 53-59.

3. Keywords: Translational Research, Neuroinflammation, Neurodegenerative diseases, Respiratory diseases, Autoimmune disorders.