



**Vinod K. Singh**, FNA, FTWAS

*Rahula & Namita Gautam Chair Professor*

**Nomination of Prof. Diwan S Rawat for the Sun Pharma Science Foundation Research Fellowship-2024  
(Pharmaceutical Sciences)**

I am pleased to nominate **Professor Diwan S Rawat** for the Sun Pharma Research Award-2024 (Pharmaceutical Sciences). Professor Rawat is an outstanding researcher and academician, as evidenced by the contribution he has made in the area of drug discovery/medicinal chemistry and catalysis. His major area of work lies in the area of development of small organic molecules as anti-tubercular (*Med. Res. Rev.* DOI: 10.1002/med.21779, 2021, *Med. Res. Rev.* 40, 263, 2020; *Eur. J. Med. Chem.* 195, 112276, 2020, *Med. Res. Rev.* 33, 693, 2013), anti-malarial (*ACS Med. Chem. Lett.* 10, 714, 2019; 3, 555, 2012), anti-cancer (US 9884825B2; PCT/US2013/053216, 2014) and anti-Parkinson agents (US 11,026,943 B2/2021; US 2017/0209441 A1; EP. 13758678/2014; PCT/US2013/28329/2013; WO2013134047 A3, PCT/US2013/028329, 2013) and *Nature Communication* 2023). He has utilized the hybrid drug design concept and proved that molecular hybridization can lead to molecules with better potency and efficacy. Some of the compounds based on 4-aminoquinoline-pyrimidine pharmacophore have shown low nano-molar antimalarial activity *in vitro* and *in vivo* without any toxicity (*Med. Res. Rev.* 32, 581-610, 2012; *ACS Med. Chem. Lett.* 3, 555, 2012; *ACS Med. Chem. Lett.* 10, 714, 2019; *Eur J Med Chem* 162, 277, 2019).

A massive collaborative work identified many hybrids as Nurr1 activators and showed potent anti-Parkinson activity (US 11,026,943 B2/2021; US 0023930 A1, 2017; ES2899730T3, 2022; EP2822936B1, 2021; CA3175047A1, 2022). These compounds activate the NURR1 receptor, which stops the death of dopamine neurons and protects the neurons from inflammation in case of PD and other neurodegenerative diseases. Further, these molecules stop the aggregation of  $\alpha$ -synuclein and induce autophagy, and this work has been published in *Nature Communication* 2023. This work opened a new dimension in the area of drug development for the treatment of Parkinson's disease. This has been licensed to NurrON pharmaceuticals for the development of a drug for the treatment of Parkinson's disease, and recently, NurrOn entered into a co-development agreement with HanAll Biopharma and Daewoong Pharmaceuticals to develop ATH-399A for Parkinson's disease. Phase I clinical trials of these molecules have been funded by MJ Fox Foundation (<https://nurronpharma.com/media-relation>).

Prof Rawat has extensively worked in heterogeneous materials as a recyclable catalyst for synthesizing biologically active and industrially important molecules and API, which has resulted in publications in high-impact journals. He has published 169 research papers with over 7250 citations, an h-index of 50, and an i-10 index of 135. He has twelve patents, a book, and six chapters to his credit. The book "Bioactive Marine Natural Products" was published by Springer and reviewed by the *Journal of American Society (J. Am. Chem. Soc.* 128, 4494, 2006). His work has appeared on the cover page of ACS Sus. Chem. Engg., Tetrahedron Letters, and six of his articles have been highlighted by Synfact. Prof Rawat is an Associate Editor of Scientific Reports, RSC Advances, and Journal of Biochemical and Molecular Toxicology. Professor Rawat is an excellent teacher and he has developed YouTube lectures on Organic Spectroscopy with over 25000 viewers and about 4500 subscribers.

I strongly recommend him for the Sun Pharma Science Foundation Research Fellowship (Pharmaceutical Sciences).

Sincerely,

Vinod Singh

July 27, 2024