

Professor G. Padmanaban

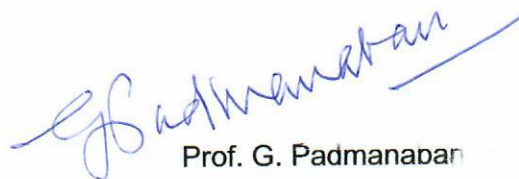
Hon. NASI Platinum Jubilee Senior Scientist
Former Director, IISc
Chancellor, CUTN

13th Aug 2024

Nomination for Sun Pharma Research Awards – 2024

I have great pleasure in nominating Prof. Ganesh Nagaraju for the Sun Pharma Research Award for the year 2024 under the Medical Sciences - Basic Research category. He did his PhD at the Indian Institute of Science, Bangalore, and for his excellent thesis work in the area of recombination mechanisms in mycobacteria, he received the Prof. K.V. Giri's Memorial Best Thesis Award in 2003. He carried out his postdoctoral studies at Harvard Medical School and Beth Israel Deaconess Medical Center, Boston, USA (2003-2007), where he discovered that genetic mutations in DNA repair genes lead to gene amplifications - a hallmark feature of cancer cells. After establishing his lab at IISc in 2007, he has been working on DNA damage responses, chromosome instability genetic diseases and cancer and has made outstanding contributions in this area. He demonstrated that *RAD51C* is a Fanconi anemia and breast

cancer susceptibility gene, and *RAD51C* mutant tumor cells can be specifically targeted by low doses of ionizing radiation and PARP inhibitors. He also showed new roles of *RAD51* paralogs in the protection and restart of stalled replication forks as well as in the regulation of replication fork progression which provided insights into tumor suppressor and essential functions of *RAD51* paralogs in genome maintenance. *FANCD1* and *RTEL1* helicase mutations are known to cause Fanconi anemia and Hoyer-Hreidarsson syndromes, respectively. These are bone marrow failure, developmental and cancer susceptibility genetic diseases. The molecular basis of mutations in these helicases leading to human syndromes is less clear. In recent years, Ganesh's group has identified new functions of *FANCD1* and *RTEL1* helicases in DNA repair, genome maintenance and tumor suppression. His work has been published in many high-impact journals like *Cell Reports*, *PLoS Genetics*, *Nucleic Acids Research* and *Molecular and Cellular Biology*. For his significant contributions, he has received several awards and recognitions including B.M. Birla, National Bioscience and Sir C.V. Raman Young Scientist Awards. In 2018, he also received the prestigious Shanti Swarup Bhatnagar prize. He is an elected fellow of all the three national academies of India, and currently, he is a J.C. Bose fellow. For his outstanding contributions in the area of genome maintenance, genetic diseases and cancer, he richly deserves the Sun Pharma award and I strongly recommend him for this award.



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Prof. G. PADMANABAN
NASI Honorary Scientist
Department of Biochemistry
Indian Institute of Science
BANGALORE - 560 012, INDIA
Tel.: +91-80-22932540 / 23601492
Res.: +91-80- 23342223