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No. : NASI-ICMR/RUHS/2021/Nomination-Prof Sarman Singh/

Date: 13/09/2021

Subject: Prof Sarman Singh for Sun Pharma Award

Prof. Sarman Singh, joined All India Institute of Medical Sciences, New Delhi in 1988 and served at various faculty positions and currently working as Director of the All India Institute of Medical Sciences, Bhopal.

Dr. Singh has made several ground breaking discoveries in the field of pathophysiology of visceral Leishmaniasis and Tuberculosis. He was the first to develop and patenting a rapid and highly cost-effective diagnostic test for kala-azar. The commercial rights of the test were transferred to the M/s Span Diagnostic Pvt Ltd through the Department of Biotechnology, Govt. of India. The rapid diagnostic test (RDT) kits were dedicated to the nation by the Honourable Minister of Science & technology, Government of India in 2006. These RDTs have made the invasive and hazardous diagnostic methods dispensable at a very affordable price. It is a matter of pride that the diagnosis of kala-azar can now be made at a cost of less than Rs. 50 per patient in India using these trailblazing "Made in India" kits.

The diagnosis of Tuberculosis has been another major challenge. Several serological test kits were dumped in the Indian market for the diagnosis of PTB and EPTB. Dr. Singh worked untiringly to find out novel molecular tools and biomarkers for the diagnosis and differentiation of drug susceptible and drug resistant *Mycobacterium tuberculosis*. His laboratory has recently made a revolutionary discovery in this field. After screening hundreds of proteins of MTB, his team identified 5 novel proteins/antigens which are over-expressed only during the in-vivo drug resistance development. The genes were cloned and proteins expressed, purified and used on various categories of patients showing the sensitivity and specificity of these proteins between 98.2% -100% and 89.1 - 98.2%, respectively. Using these novel proteins, development of a point-of-care (POC) rapid test is underway. This innovation might be a game changer in the area of TB diagnostics not only for India but globally. The Foundation for Newer Innovative Diagnostics (FIND) has shown interest in this innovation and very soon this innovation will move towards application in public health.

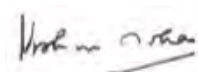
Dr. Singh has also done pioneering work in the field of non-tuberculous mycobacteria (NTM) often neglected by clinicians and medical microbiologists as contaminants. His team has developed novel sets of multiplex-PCR primers for the diagnosis and differentiation of Mycobacterium tuberculosis, M. avium, M. kansasii and other NTM, directly from the clinical samples in a single tube (PCT/IN2004/000396). These PCR primers and the process have been found highly sensitive and specific and are being routinely used at AIIMS and many other laboratory settings throughout the country.

Dr. Singh has served as member of scientific advisory committees of various institutions; and grant reviewer for DST, DBT, DHR, ICMR, CSIR, BIRAC/IKP, BCIL of India, etc. He is also international grant reviewer for Medical Research Council, Government of South Africa; Ministry of Science and Technology, Life Sciences Division. Government of Israel and Ministry of Health (General Director for Scientific Research and Health Innovation), Italy.

As the director of the All India Institute of Medical Sciences, Bhopal, he has completely transformed this Institute within 3 years. During the period of COVID pandemic, his leadership has been valuable. AIIMS, Bhopal initiated the first clinical trial in the April 2020 for the management of COVID-19 and AIIMS, Bhopal has been made Center of Excellence (CoE) for clinical care and helping the state Government in various ways, including certifying and mentoring all medical colleges of the state for COVID testing, advising the state through various task forces and advisory committees. AIIMS Bhopal under the leadership of Prof Sarman Singh has started playing a pivotal role for achieving excellence in medical care and academics in the state of Madhya Pradesh. For his societal concerns and social education the Public Relation Society of India (PRSI) awarded with most prestigious "Pride of India"

Dr. Singh is voracious writer, dedicated researcher, loved teacher by his students, an able administrator and a visionary. This is evident from his more than 330 publications in peer reviewed journals with high citation index of >11500, i10 index of 204 and h-index of 54.

It is noteworthy that on the basis of his outstanding research and publication, Royal College of Pathologist (London) has awarded him FRCP. Furthermore, in 2020 his name also found place in the world's top 2% of the scientists (<https://tech-talk.org/2020/11/22/indian-researchers-who-were-top-2-in-2019-standford-study/>) a rare distinction to only a handful scientists.



(V.M. Katoch)