**Justification for the nomination of Dr Mallika Lavania for being considered for SUN PHARMA RESEARCH AWARD**

Dr Mallika Lavania, presently Scientist D at ICMR-NIV, Pune has been engaged in leprosy research for nearly 17 years at ICMR-NJILOMD Agra and The Leprosy Mission India. During these years she has made significant contributions to sources and spread of leprosy using molecular techniques. Her achievements in last five years are mainly in the emerging antimicrobial resistance in leprosy. In the context of the current scenario of elimination of leprosy the matter of drug resistance in leprosy has become pertinent in view of its public health importance. Drug resistance in leprosy especially to the bactericidal drug, rifampicin, is an issue of major concern. Drug resistance has been reported earlier as well but need arose to look into it in more details about factors responsible for causing drug resistance in leprosy and to identify the way forward towards its better management during the elimination phase of the disease. During this elimination phase it is of utmost importance to diagnose secondary drug resistance and their treatment with alternative regimen(s) as early as possible so that there is no chance of transmission of secondary *M.leprae* drug resistant strain to a naive individual which might emerge as primary drug resistance in leprosy. Her research work, especially on emerging anti-microbial drug resistance in leprosy has been recognized by the Global Leprosy Programme, WHO, Indian Council of Medical Research and by the National Leprosy Eradication Programme of Govt. of India.

Using molecular approaches, her work showed the occurrence of both primary and secondary rifampicin resistance as well as multidrug resistance in leprosy. Data generated by her studies played an important role in influencing the Leprosy Division of Ministry of Health, Govt of India to formulate policies pertaining to public health interventions in prevention and spread of leprosy in poor society as well as prevention of drug resistance. Her work has already created an awareness and contributed to strengthening of network for surveillance of detection of drug resistance to anti-leprosy drugs. Government has initiated a mechanism for surveillance of *M. leprae* drug resistance at country level, so that the drug resistance in leprosy should not become an issue in the future and the patients can be treated more effectively. She was one of the members in the NLEP expert committee on Antimicrobial Resistance in Leprosy. She has contributed to development of SOPs for all the national referral laboratories.

As rifampicin is the backbone of MDT treatment for leprosy, it is important to know that if patient is resistant to rifampicin then which alternative regimen will be effective for them. Work carried out by her and colleagues as well as colloborators have provided new original information about the molecular mechanisms and possible solutions to deal with drug resistance in leprosy. Thereafter she has conducted research on the alternative regimen especially for rifampicin resistant cases. She has written chapter on Drug resistance in "Ridley Jopling Textbook of Leprosy for Medical students".

She also worked to detect as well as for drug susceptibility testing of leprosy bacillus obtained from Brain, and that provided a new source for clinicians for diagnosing leprosy involving Central Nervous System. After proper diagnosis and proper treatment, cases showed resolution of brainstem lesions and cord lesions.

Her research work on the development of tools for early diagnosis of leprosy and detection of resistance has made an impact on the social life of leprosy patients by diagnosing patients early and providing them proper treatment. Her original findings about prevalent genotypes of leprosy bacillus in India, environmental presence of live *Mycobacterium leprae* from endemic areas of UP and later other parts of India has provided evidence for suitable interventions to prevent the spread of leprosy.

While working in leprosy, she has contributed 61 research papers on leprosy in peer-reviewed journals. Many of her original papers are highly cited. She has also written several chapters in text books.

Considering her impact making original scientific contributions to leprosy research and science in general and her passion towards scientific research, I am nominating her to be considered for Sun Pharma Research Award.

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