

# सीसीएमबी CSIR CCMB

कोशिकीय एवं आणविक जीवविज्ञान केन्द्र  
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Dr. Vinay Kumar Nandicoori  
Director

## TO WHOM SO EVER IT MAY CONCERN

It is pleasure to nominate Dr. Giriraj Ratan Chandak, a Physician-scientist, for the prestigious Sun-Pharma Award in Medical Sciences-Clinical Research. Dr. Chandak is among the pioneers for Medical and Human Genetics research in India and has significantly contributed in both monogenic and polygenic complex genetic disorders. Starting his career two decades back, he has discounted any role for trypsinogen gene mutations as established in Caucasians and identified two novel genes, SPINK1 (OMIM#167790) and Cathepsin B (OMIM#116810) that predicted susceptibility to chronic pancreatitis in Indians (OMIM#608819). This has led to the development of specific genetic tests for chronic pancreatitis in Indians. His continued efforts in this regard have further provided evidence of genetic and mutational heterogeneity in chronic pancreatitis in India for various genes including CTSC, CPA1, etc. and thus made a tremendous impact on the specifics of genetic testing to predict risk for chronic pancreatitis.

Dr. Chandak has also made significant contribution in the field of complex genetic disorders. He was the first to show that genetic susceptibility of type 2 diabetes (T2D) and related intermediate traits is different in Indians. He has successfully dissected molecular basis of Developmental Origins of Health and Disease hypothesis which associates early life factors including maternal nutrition with birth size and future risk of cardiometabolic disorders. He has established the causal role of maternal vitamin B12 deficiency and 1-carbon metabolism in predicting low birthweight and adiposity in their children. He has brought to light the importance of pre- and peri-conceptional micronutrient intervention in women in influencing early life parameters such as birthweight. Dr. Chandak has also provided evidence of differential epigenetic regulation of T2D genes like FTO and TCF7L2 with B12 deficiency that is widely prevalent in the Indians. In contrast to the globally established role of folate deficiency, his studies have conclusively proven a major role for maternal B12 deficiency in the risk of neural tube defects and has implications in the mandatory pre-conceptional folic acid supplementation for prevention of neural tube defects. His recent work has confirmed that the risk for non-communicable disorders is an interplay of genetic susceptibility, influenced by nutrition through epigenetic regulation of specific genes. These findings represent important advances with implications for prevention of these disorders. Needless to say, Dr. Chandak's versatile research interests along with his professional and scientific temper have immensely improved the scientific understanding of pancreatitis, diabetes and other associated metabolic disorders.

In addition to his scientific research, Dr. Chandak has led the way in preventing common monogenic genetic disorders through creating awareness amongst the clinicians and the common man and by genetic testing and counseling. He leads the multi-institutional CSIR mission project on Sickle Cell Anemia that is focused on finding early diagnosis, prevention management and development of cure using genome editing approaches. He has also been actively involved with above diseases-related patient support groups and actively engages in patient consultation, testing, counselling through participation in various camps.

Apart from all his achievements, Dr. Chandak is renowned as a generous and proactive mentor to all young scientists and trainees who have had the privilege of working and collaborating with him. He has played a significant part in forging strong scientific collaborations through open interactions with researchers in India and the international community. Indeed, students and postdocs trained in his lab have established excellent independent laboratories in academic institutes, both nationally and abroad.

In summary, Dr. Chandak's professional achievements clearly attest to his brilliance as a productive and innovative researcher who is equally at ease with basic science and clinical projects. He is committed towards his goal of bridging the gap between bench research and its application in clinical settings solely with the aim of developing novel therapeutic breakthroughs in the treatments of diseases. I am convinced that Dr. Chandak will be an outstanding and meritorious recipient of Sun Pharma Award. To this end, I extend my whole hearted support and best wishes to Dr. Chandak for all the success in the near future.

[ Vinay Nandicoori ]

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