

सीसीएमबी CSIR CCMB

कोशिकीय एवं आणविक जीवविज्ञान केन्द्र
(वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद)
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डॉ. विनय कुमार नंदिकूरी
निदेशक

Dr. Vinay Kumar Nandicoori
Director

Signed Citation on outstanding research work by the nominator

Dr Giriraj Ratan Chandak has made outstanding contributions in understanding the genetic basis and gene-nutrient interaction in complex human genetic diseases. His studies established the genetic basis of tropical calcific pancreatitis and provided evidence of mutational and genetic heterogeneity through the identification of two novel genes (Included in Online Mendelian Inheritance in Man, OMIM) and different spectrum of mutations in Indians, leading to population-specific genetic screening for chronic pancreatitis in Indians. Dr Chandak has been the first to show that genetic susceptibility of type 2 diabetes (T2D) in Indians is different than Europeans, especially for traits like central obesity and insulin resistance. He has made a seminal contribution towards understanding the molecular aspects of the association of early-life exposures and future health outcomes like T2D and cardiometabolic disorders (Developmental Origins of Health and Diseases). He has established the causal role of vitamin B₁₂ in the programming of obesity and insulin resistance in children that predict future risk of the cardio-metabolic syndrome. His work has shown B12-mediated epigenetic regulation of diabetes-associated genes as an explanation for missing heritability in diabetes. Further, he has demonstrated improvement in neonatal body size as a result of pre- and peri-conceptional nutritional intervention and identified differential methylation of specific genes as the cause. This opens the possibility of developing a suitable intervention at an appropriate stage. Thus, Dr Chandak's research has changed the perspective about genetic susceptibility to complex diseases and the influence of nutrition in modulating the risk in Indians and has immense public health implications.

28.09.2021

Signature of Nominator

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