



**Giriraj R Chandak, MD, PhD, DNB**  
Chief Scientist & Group Leader

October 30, 2021

**The Chairman**

Office of Sun Pharma Science Foundation  
8C, 8th Floor, Hansalaya Building,  
15-Barakhamba Road, Connaught Place,  
New Delhi - 110 001 (India)

**Re : Sun Pharma Research Award 2021-Medical Sciences (Clinical Research)**

Dear Chairman,

I wish to let you know that the research work under nomination for the Sun Pharma Research Awards 2021 in the category of Medical Sciences (Clinical Research) has not been given any award in the past. The award is being claimed for understanding the molecular mechanism underlying early life exposure-mediated future risk of cardio-metabolic disorders (Developmental Origin of Health and Diseases), especially type 2 diabetes (T2D), one of the major non-communicable disease. The study has focused on investigating the genetic basis of T2D and then linking the genetic and epigenetic mechanisms associated with vitamin B12 deficiency (leading to an imbalance of folate/Vitamin B12 ratio and disturbed one-carbon metabolism) and their influence on intermediate traits like obesity, insulin resistance and secretion. Further, the work also includes understanding the regulatory mechanisms and their reversal through micronutrient supplementation with specific reference to vitamin B12, hinting at a possibility of the use of vitamin B12 (possible in combination with other micronutrients) for preventing future risk of diabetes. The study designs, experiments, analysis, interpretation of the results have largely been done by me (and my colleagues). Of course, in such kind of potentially translational studies, the role played by my clinical collaborators is invaluable.

These studies have been conducted on long-term birth cohorts generated and maintained by Dr K Kumaran and Dr GV Krishnaveni at Mysuru, Dr. R D Poddar at Mumbai and Dr. C S Yajnik at Pune. I also had the privilege of working with many international collaborators and cohorts. I acknowledge that without their preliminary interesting results, biological samples and intellectual discussions with them, my research would not have led to such interesting results which have a great potential for translation.

With warm regards,

Yours truly,

(Giriraj Ratan Chandak)

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