



सीएसआईआर – केन्द्रीय औषधि अनुसंधान संस्थान  
CSIR-CENTRAL DRUG RESEARCH INSTITUTE



वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद्  
COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH

डॉ. राधा रंगराजन

निदेशक

Dr. Radha Rangarajan

Director

August 28, 2023

**Citation on the outstanding research work on which award is claimed**

Dr Barthwal's research has focused on biological mechanisms that lie at the intersection of cardio-metabolic lifestyle diseases and inflammation. His contributions include the development of novel *in vitro* and *in vivo* models of inflammation, identification of new druggable targets and preclinical development of drug candidates for cardiovascular disease. Of note, he established a novel model of atherosclerosis with thrombotic complications (*J Physiol Biochem.* 2011 Jun;67(2):205-16) which was subsequently used to identify and profile a novel anti-thrombotic molecule S007-867 (US9206155B2). This compound received approval from the DCGI for a phase-1 clinical trial (IND/FORM44/FF/2019/13498) in 2020. Dr. Barthwal also identified an orally bioavailable small molecule inhibitor of PCSK9, an effort funded by BIRAC and presently being pursued as a first-in-class drug for dyslipidemia.

Dr Barthwal's research is seamless ranging from understanding basic mechanisms to pursuing new therapeutic interventions. Dr. Barthwal's group established the role of interleukin-1 receptor-associated kinase (IRAK) as a causative agent in inflammatory and cardiovascular diseases (JLR, 2018,2020, JI,2011, ATVB 2015). IRAK inhibitors are now in clinical trials for various immune diseases. Animal model studies established macrophage polarization and its key determinants in lifestyle diseases (CMI 2021, 2022, BBA, FRBM2022, Inflammation 2020). Subsequently Dr. Barthwal identified M2 macrophage polarization specific fluorescent probes (S012-0411 and derivatives) that can be developed as diagnostic tools (4242/DEL/2015).

In addition to excellent credentials as a researcher, Dr Barthwal has shown strong leadership skills in his role as Head of division of Pharmacology and Area coordinator for Metabolic diseases. He is a compassionate mentor and guide to students and junior faculty.

Sincerely,

Radha Rangarajan, Ph.D

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