

Date: 30<sup>th</sup> August, 2023

This is to certify that the dissertation work entitled “Finding the therapeutic strategies to combat cardiometabolic diseases” Submitted by Malladi Navya to “SUN PHARMA SCIENCE FOUNDATION SCIENCE SCHOLAR AWARDS 2023” is a bonafide research work carried out by the candidate under my guidance. This work is original and done as a part of her PhD thesis work at National Institute of Pharmaceutical Research and Education, Guwahati, Assam.

Her research work focuses on the cardiometabolic diseases such as diabetes and nonalcoholic fatty liver disease where she tried to understand the cardiovascular complication that evolve from both the diseases stated above. She has looked the platelet activation in diabetes animal model and evaluated the role of a natural compound, Allyl methyl sulfide (AMS), to alleviate the platelet activation and platelet-macrophage interaction (1) (2). She has able to publish her work in “Journal of Diabetic Research” in the year 2021. Further, she has explored the liver-heart axis in NAFLD. Her animal model of NAFLD in rats showed the correlation between fatty liver disease and cardiac dysfunction in a time-dependent manner. Her data also found the role of posttranslational modification of proteins (PTM) in NAFLD progression. She showed that FOXO3A and NFkB are acetylated in the liver of NAFLD rats and cause oxidative stress and inflammation, both of which are crucial for disease pathogenesis (3). To find a novel therapy considering the increased acetylation, she has treated Paricalcitol, a vitamin D receptor agonist and an FDA-approved drug in renal failure, to NAFLD rats. Interestingly, Paricalcitol attenuate the NAFLD phenotype by decreasing the acetylation status of both FOXO3A and NFkB.

I am providing the references of her publication (research work) at the end of the letter.

Thanking you.

Sincerely,



**Sanjay K Banerjee, Ph.D.**

Associate Professor and In-Charge

Department of Biotechnology

National Institute of Pharmaceutical Education and Research

Guwahati-781101, Assam, India

Reference paper:

1. Malladi N, Johny E, Uppulapu SK, Tiwari V, Alam MJ, Adela R, et al. Understanding the Activation of Platelets in Diabetes and Its Modulation by Allyl Methyl Sulfide, an Active Metabolite of Garlic. *Journal of Diabetes Research*. 2021 Oct 19;2021:e6404438.
2. Malladi N, Alam MJ, Maulik SK, Banerjee SK. The role of platelets in non-alcoholic fatty liver disease: From pathophysiology to therapeutics. *Prostaglandins and Other Lipid Mediators*. 2023 Jul 20;169:106766
3. Malladi Navya, Devidas Lahamge, Balaji Sanjay Somwanshi, Md Jahangir Alam, Sanjay K Banerjee. Paricalcitol attenuates oxidative stress and inflammatory response in the liver of NAFLD rats. *Cellular and Molecular Life Sciences*. 2023. (Under communication)