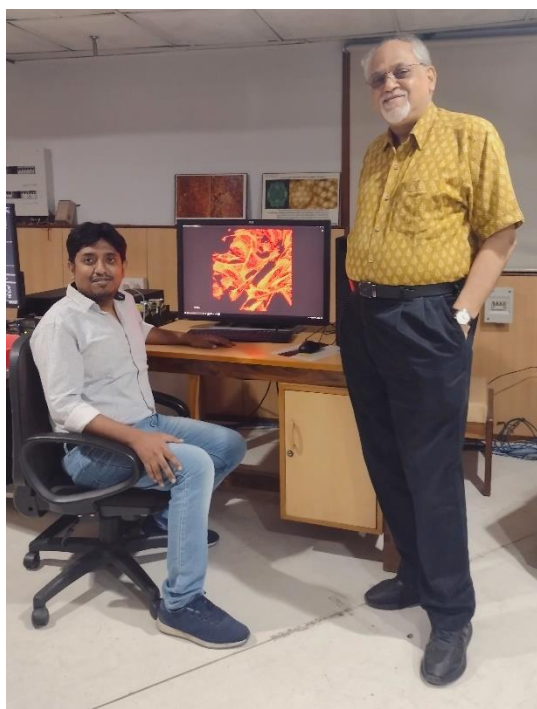




CCMB study unravels basis for side effects of cholesterol-lowering drug statins

Hyderabad, 8th April, 2022: Statins are one of the top selling drugs worldwide and are used for lowering cholesterol in patients with high blood cholesterol. These drugs act by inhibiting a key enzyme (HMG-CoA Reductase) needed for making cholesterol in our body. In spite of their popularity, statins have been reported to give rise to severe side effects to long-term users. The molecular basis of these side effects is not clear. Recent work from Prof. Amitabha Chattopadhyay's group at the CSIR-Centre for Cellular & Molecular Biology shows that statins could induce changes in the architecture of cells as well, possibly leading to the side effects.

Cell's architecture, called the cytoskeleton, is made of proteins such as actins, which form polymers. They lie beneath the plasma membrane that surrounds each cell in our body, and help the cells maintain their shape and size. Prof Chattopadhyay's study shows that statins could induce polymerization of actin cytoskeleton, in addition to cholesterol lowering. Published in [Journal of Lipid Research](#) (by the American Society of Biochemistry and Molecular Biology), the study shows that statins affect actins as a result of multiple cellular signaling pathways.



Dr Parijat Sarkar (left) and Prof Amitabha Chattopadhyay (right)

“Our results constitute one of the first comprehensive reports dissecting the mechanistic basis underlying the interplay between cellular actin level and cholesterol biosynthesis, and provide a molecular basis for the reported side effects of statin treatment”, said Dr. Parijat Sarkar, who is the first author of the paper. Prof. Chattopadhyay concludes “These findings could provide vital clues in dissecting the biochemical processes that give rise to adverse effects of statins, thereby helping to develop better drugs in the future”.