



International Conference on

"Recent Trends in Structural Bioinformatics and Computer Aided Drug Design"

[ICSBCADD'2019]

11th - 13th December, 2019



Structural and functional characterization of class III CoA-transferases in virulence of *Mycobacterium tuberculosis*

**J. Venkatesh Pratap¹, Anil K Shakya¹, Sharan S Karade¹, S. Pandey², A. Ansari¹, S. Das², S. Chopra²
& A. Dasgupta^{2*}**

¹Divisions of Molecular & Structural Biology, ²Microbiology, CSIR-Central Drug Research Institute, Lucknow 226 030, India.

E-mail: jvpratap@cdri.res.in

Tuberculosis (TB), caused due to *Mycobacterium tuberculosis* (*Mtb*), is the leading cause of death worldwide from a single infectious agent, ranking above HIV/AIDS (WHO, 2018). As has been demonstrated, fatty acid metabolism plays a central role in growth, survival, pathogenesis and virulence of *Mtb*, with almost ~1/4 mycobacterial genome dedicated to it. Coenzyme A (CoA) plays a pivotal role in a variety of essential biological processes (Tricarboxylic Acid Cycle, Fatty Acid Metabolism etc), thus its disruption is purported to globally influence mycobacterial biology. CoA moiety is transferred by corresponding CoA transferases, which are broadly classified into three classes (Class I-III). While class I and II have been studied in some detail, there is a lack of definite information about class III CoA transferases. Class III CoA transferases are a diverse set of enzymes involved in various biological processes including virulence and exhibit a diverse spectrum of substrates as well as reaction mechanisms. In this context, Rv3272, a annotated hypothetical protein and predicted to be one of the mycobacterial virulence factors (Ruley, K. M *et al.*, 2004), has been structurally identified as a Class III CoA transferase involved in stress response and fatty acid metabolism by our team (Karade SS *et al.*, 2018). The structural and functional characterization of this protein and its role in *Mtb* virulence is discussed.

Department of Bioinformatics, Alagappa University,
Karaikudi –630004, Tamil Nadu
E-mail: dbiicsbcadd@gmail.com

Web Address: <http://conf.bioinfoau.org/icsbcadd'2019>