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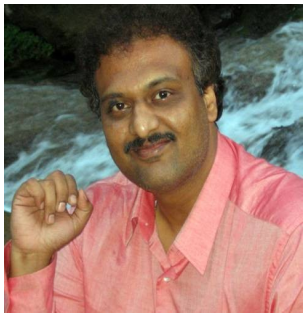
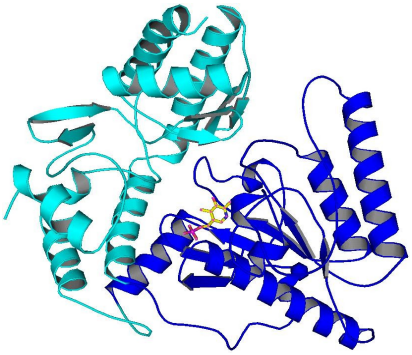


Title: Rational approach to drug discovery: Structural Biology and its application.

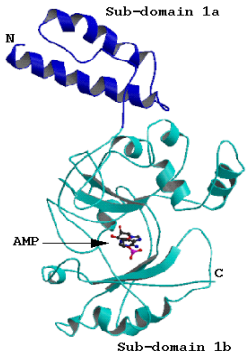
Abstract:

My group works on the elucidation of molecular mechanisms underlying several pathways from human pathogens like *M. tuberculosis* and *P. falciparum*. We use a variety of approaches like X-ray crystallography, Biochemistry and Genetics to understand the functions at the molecular and cellular levels. (http://www.cdriindia.org/ravishankar.htm)

The translational aspect of the studies involves the use of rational approaches to identify novel inhibitors with therapeutic potential. In the presentation I shall cover a couple of projects undertaken by my group involving proteins from *M. tuberculosis.* This will include our work on the NAD^+-dependent DNA ligase (MtbLigA) and Lysine ε-aminotransferase (MtbLAT).



Lysine -ε-aminotransferase



NAD^+ -dependent DNA ligase

The former is an essential bacterial enzyme involved in DNA metabolism and DNA repair. MtbLAT catalyzes a reaction with a ping-pong bi-bi mechanism and has been listed as one of the top-3 targets against tuberculosis persistence by the tuberculosis structural genomics consortium (http://www.webTB.org/). The rational approaches used in the identification of new inhibitors for these proteins will be detailed.