

Targeted therapy for tuberculosis becomes a possibility

SPECIAL CORRESPONDENT

HYDERABAD: A novel mechanism of a protein secreted by *Mycobacterium tuberculosis* (Mtb), inhibiting the infected host's immune response by modulating certain genes has been discovered, giving rise to hopes of a targeted drug therapy.

With identification of suitable drug targets and candidate vaccines to control TB remaining a challenge and most of the studies focusing on strategies to prevent TB infection, scientists from the Centre for DNA Fingerprinting and Diagnostics (CDFD) here have looked at the interaction be-

tween pathogenic mycobacteria and the human cell during infection.

Giving details of the study which was published in the prestigious journal 'Nature Communications', CDFD Director Dr. G. R. Chandak, along with the team of scientists led by Dr. Sanjeev Khosla, told a news conference on Thursday that the finding could not only be a potential drug target against mycobacterial infections, but also help in developing a new biomarker for identification of M.tuberculosis infection in humans.

On the potential target for therapy, he said it was important to work further with clinicians and other stakeholders as a novel pathway in connection with the regulation of host's immune-response genes had been found.

In the study, the scientists identified the novel protein secreted by mycobacterium into the host upon infection as Rv1988.

This protein suppresses the activity of immunity-related genes through a process of chemical modification of histone proteins, which are known to play a key role in activation or shutting down of genes in a cell.

Dr. Sanjeev, who is Group Head, Laboratory of Mammalian Genetics, CDFD, said though some control had been achieved on TB, its eradication was posing a problem because the mycobacterium uses various novel strategies to enter the human cell (intracellular pathogen) and controlling its activities by shutting down different genes involved in defending against pathogens.

He said Rv1988 was important for the pathogen as its deletion in Mtb reduced bacterial survival. In other experiments, the scientists have found that when Rv1988 was transferred to a non-pathogenic bacteria, it negatively affected the health of the infected mice.