

IIT-I develops antibacterial compounds to treat TB

TIMES NEWS NETWORK

Indore: The Indian Institute of Technology (IIT) Indore has developed antibacterial compounds designed to treat tuberculosis (TB) and aid in cutting down the cost of treatment. The method used to develop these compounds has been granted patents in both India and the US for treating various diseases.

India accounts for nearly half of the world's TB cases and spends thousands of crores every year to provide subsidised anti-TB drugs. These new compounds could help

LIFE-CHANGING RESEARCH

➤ IIT-I have created over 150 new antibacterial compounds to treat TB as part of drug discovery programme



➤ These new compounds could help reduce long-term healthcare costs while supporting indigenous drug development

➤ They claimed to aid in combating multidrug-resistant (MDR) and extremely drug-resistant (XDR) TB strains, which render most existing anti-TB drugs ineffective

reduce long-term healthcare costs while supporting indigenous drug development, said IIT-I in a statement released

on Tuesday.

Researchers Professor Venkatesh Chelvam from the department of chemistry

and Professor Avinash Sonawane from the department of biosciences and biomedical engineering at IIT-I have created over 150 new antibacterial compounds to treat TB as part of their drug discovery programme.

The development is claimed to aid in combating multidrug-resistant (MDR) and extremely drug-resistant (XDR) TB strains, which render most existing anti-TB drugs ineffective, said IIT-I.

"Currently, the most potent of these anti-TB compounds are undergoing testing in small animals like mice,

aiming to improve therapies for MDR and XDR-TB. The ultimate goal of this research is to provide new tools for treating TB and drug-resistant TB, which remains a significant challenge for both developing and developed countries," said researchers.

Current TB treatments require six to nine months of antibiotics, but for MDR and XDR-TB, treatment can take several months to years with toxic drugs, often leading to high failure and mortality rates. These compounds belong to the pyridine ring fu-

sed heterocyclic family, including pyrrolopyridines, indolopyridines and others.

According to World Health Organization (WHO), there were around 4.8 lakh new MDR-TB cases and an additional 1 lakh cases of rifampicin-resistant TB (RR-TB) worldwide, with half of these occurring in China and India, the institute said in the statement. TB, caused by the bacteria *Mycobacterium tuberculosis* (M.tb), is one of the leading causes of death worldwide, claiming about 1.5 million lives annually, the institute said.