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CSIR-NCL develops TB drug with improved stability

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Stable cocrystal drug with longer shelf life will improve the prospects of transport logistics and inventory management of TB drugs

The Pune-based CSIR National Chemical Laboratory (CSIR-NCL), has come up with an anti-tuberculosis (anti-TB) cocrystal drug with improved stability.

The research work done by professor AK Nangia and his team at the CSIR-NCL and the School of Chemistry, University of Hyderabad, has cleared the way for development of a stable formulation of 4-FDC (4 drugs fixed dose combination) for curing TB.

The team led by Nangia studied the cause for the instability of the 4- FDC drug and discovered a pharmaceutically stable cocrystal by applying crystal engineering principles to improve the stability, so that the drug inhibits a cross-reaction between Isoniazid and Rifampicin and thereby overcomes the formation of inactive by-products.

Nangia said, “Stable cocrystal drug with longer shelf life will improve the prospects of transport logistics and inventory management of TB drugs.”

In the next phase longer term stability data on 4-FDC will be validated with suitable excipients and polymeric additives to develop the tablet formulation in fast track translation. The pharmaceutical cocrystals of INH (INH-Caffeic acid and INH-Vanillic acid) were used to improve the stability of 4-drug FDC.

The team showed that the pharmaceutically stable cocrystal of INH is able to improve the stability 5-fold of the current 4-FDC drugs.