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Curcumin nanoparticles can reduce treatment time for TB

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Nanoparticle curcumin was found to be five times more bioavailable in mice, than regular curcumin, and was able to drastically reduce liver toxicity induced by TB drug isoniazid.



A team of researchers at the Special Centre for Molecular Medicine, Jawaharlal Nehru University, New Delhi have found out that when curcumin is administered in a nanoparticle formulation, it has several favourable properties in the treatment of tuberculosis (TB) in mice.

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Quite often, patients stop taking anti-TB drugs for a few days due to liver toxicity. Since the addition of curcumin reduces liver toxicity, there can be better treatment adherence and lesser risk of drug resistance emerging.

Curcumin blocks the Kv1.3 potassium channel and prevents apoptosis, or cell death, of T cells that come up with an immune response. As a result, the protective, long-lasting memory cells called the central memory T cells get enhanced.

This leads to faster clearance of the TB bacteria, resulting in stronger host immunity against the bacteria and therefore less chances of relapse of the disease after treatment.

Researchers believe that curcumin nanoparticles are stable and can be administered both orally as well as intraperitoneally and, therefore, have greater potential for therapeutic use under different conditions.