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The Effects of First-Line Anti-Tuberculosis Drugs on the Actions of Vitamin D in Human Macrophages

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The authors have no conflicts of interest to declare

Research Highlights

- Vitamin D has a stimulatory effect on the mRNA expression of cathelicidin *in vitro*
- Anti-TB drugs abolish the vitamin D stimulatory effect of cathelicidin *in vitro*
- Subjects taking anti-TB drugs have no enhanced cathelicidin response to vitamin D
- Anti-TB drugs may alter the vitamin D stimulatory effect on anti-microbial peptides

Abstract

Tuberculosis (TB) is a major global health problem. Patients with TB have a high rate of vitamin D deficiency, both at diagnosis and during the course of treatment with anti-tuberculosis drugs. Although data on the efficacy of vitamin D supplementation on *Mycobacterium tuberculosis* (*Mtb*) clearance is uncertain from randomized controlled trials (RCTs), vitamin D enhances the expression of the anti-microbial peptide human cathelicidin (hCAP18) in cultured macrophages *in vitro*. One possible explanation for the

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