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(57) Abstract :

Tuberculosis (TB) is a leading cause of death globally, with drug-resistant strains posing significant challenges. The present invention relates to a novel synergistic drug formulation designed to combat Mycobacterium smegmatis, a model organism for Mycobacterium tuberculosis. The formulation comprises two plant-based compounds: a crude extract (E1) and a purified single compound (E2). Experimental results demonstrate that the combination of E1 and E2 exhibits potent anti-mycobacterial activity, significantly reducing the microbial load in culture conditions. The optimal combination of 50 µg/ml of E1 and 80 µg/ml of E2 showed the best synergistic effect on colony-forming unit (CFU) reduction. E2 is non-toxic, with a molecular weight of 356.4 g/mol and a predicted LD50 value of 899 mg/kg. This formulation offers a promising new treatment for TB, particularly for drug-resistant strains, with potential for commercial development. Accompanied Drawing [FIGS. 1-2]

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