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Synthesis and *in vitro* antiplasmodial, *in vitro* antimycobacterial and *in vitro* cytotoxicity studies of oleanolic acid and its esterVictor O Fadipe¹, Abayomi Oguntunde¹, Hussaini Doko Ibrahim² and Andrew R Opoku³¹Federal Ministry of Science and Technology, Nigeria²Raw Materials Research and Development Council, Nigeria³University of Zululand, South Africa

Tuberculosis (TB) and malaria are chronic fatal diseases and attained a dangerous status worldwide. New drugs are therefore needed to halt the mortality rate. Pentacyclic triterpenes, a group of naturally occurring compound have been reported to have broad spectrum of biological activities that could be harnessed for development of new drugs for TB and malaria. In a quest to find new antimalarial and anti-mycobacterial drugs, oleanolic acid (OA) was isolated from the flower buds of *Syzygium aromaticum*. The derivative, 3-O-Acetyl-Oleanolic acid (OAA), was synthesized from the isolated product and their biological activities were carried out and compared. The antiplasmodial and antimycobacterial activity of oleanolic acid and its derivative were subsequently investigated against *Plasmodium falciparum* (Chloroquine Sensitive Strain) NF54 and *Mycobacterium tuberculosis* H₃₇RV, respectively. The compounds were evaluated for cytotoxicity activity using MTT (human embryonic kidney (HEK293) and human liver model (HepG2)). OAA exhibited IC₅₀ of 4.3 µg/ml against *P. falciparum* while OA exhibited IC₅₀ of 27.4 µg/ml. OAA exhibited MIC₉₉ of 79.8 µg/ml against *M. tuberculosis* while OA exhibited MIC₉₉ of 73.1 µg/ml. The MTT test (HEK293 and HepG2) were in the range of IC₅₀ ≥ 300 µg/ml, indicating low toxicity level. The data obtained above, indicate that both compounds can serve as template for the synthesis of potent anti-TB and anti-malaria drugs.

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