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ABSTRACT # CA3

Antioxidant and cytotoxic activities of phenolic-rich crude extract and solvent fractions from *Garcinia atroviridis* stem bark

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Garcinia atroviridis, a tropical plant native to Southeast Asia, is traditionally used for its medicinal and culinary properties. Its bioactive-rich stem bark has attracted growing attention as a source of natural antioxidants and anti-cancer agents. The present study evaluated the antioxidant and cytotoxic activities of the crude methanol extract and solvent-partitioned fractions of *G. atroviridis* stem bark. Antioxidant activities were assessed by total phenolic content (TPC), total flavonoid content (TFC), DPPH, ABTS, and FRAP assays. The ethyl acetate fraction exhibited the highest antioxidant capacity, with TPC of 209.90 µg GAE/mg and TFC of 48.40 µg QE/mg, supported by strong radical scavenging and ferric reducing activities. In addition, the extracts were tested against HCT-116 (colorectal), MCF-7 (breast), and A549 (lung) cancer cell lines at 100 µg/mL using the MTT assay. The chloroform and ethyl acetate fractions showed the most potent inhibitory effects, particularly on MCF-7 (90.31% and 81.40%) and A549 (74.41% and 73.78%) cells. Further IC₅₀ determination confirmed the strong cytotoxicity of the chloroform fraction against MCF-7 (54.24 µg/mL) and A549 (80.69 µg/mL). These findings highlight the potential of *G. atroviridis* stem bark fractions, particularly chloroform and ethyl acetate extracts, as natural antioxidants and anti-cancer agents with selective activity against breast and lung cancers.