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Cytotoxic Interaction Between Cisplatin and *Eclipta alba* Extract in HeLa Cervical Cancer Cells

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Abstract

Cervical cancer remains a major cause of cancer-related mortality among women worldwide. Cisplatin is a first-line chemotherapeutic agent, but its use is limited by resistance and dose-dependent toxicity. This study evaluated the cytotoxic interaction between cisplatin and *Eclipta alba* extract in HeLa cervical cancer cells. Ethanolic maceration yielded 17.38 g of extract, corresponding to 10.22%. Thin-layer chromatographic screening indicated flavonoids, coumarins, and triterpenoid saponins, while LC–MS/MS tentatively identified eclalbasaponin I, wedelolactone, pinoquercetin, luteolin, and quercitrin. Cytotoxicity was assessed using the MTT assay. The IC₅₀ values were 1.15 ± 0.16 µg/mL for cisplatin and 598.29 ± 42.89 µg/mL for the extract. Under fixed sub-IC₅₀ cisplatin conditions, 0.42 µg/mL, the extract IC₅₀ decreased to 64.97 ± 5.41 µg/mL. Combination index values below 1 suggested synergistic interaction under fixed-dose conditions, indicating a potential dose-sparing strategy requiring further validation.