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Cytotoxicity and cell death mechanisms of *Phyllanthus pulcher* extracts on various cancer cell lines

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An *in vitro* anticancer screening of hexane, chloroform and methanol extracts of *Phyllanthus pulcher* extracts were tested against various cell lines, i.e. HepG2 (human hepatocellular carcinoma), Caov-3 (human ovarian adenocarcinoma), COLO205 (human colorectal adenocarcinoma), NCI-H23 (human lung adenocarcinoma) and T-47D (human breast ductal carcinoma) cell lines. Cell survival was determined by Methylene blue assay (MBA). All plant extracts inhibited cell growth in a concentration-dependent manner except chloroform extract against T-47D cell line. The chloroform extract of *P. pulcher* apppeared to be the most potent with EC_{50} value of 0.919 μg/ml. Cell death mechanism (apoptosis) of *P. pulcher* chloroform extract was confirmed through DeadEnd Colorimetric Apoptosis Detection System and reverse transcriptase-polimerase chain reaction (RT-PCR). Caspase-3 and p53 mRNA expression were up-regulated and reached a maximum level at 9 hours and 30 minutes respectively.