

# Evaluation of Antioxidant and *in vitro* Cytotoxic Activity of Triphala on HT29 and HepG2 †

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**Abstract:** An extract of Triphala (TPL), an Indian Ayurvedic formulation with known anti-cancer properties, has been investigated on two human breast cancer cell lines. TPL is consists of dried fruits of three kinds of dried fruits, *Phyllanthus emblica* Linn, *Terminalia chebula* Retz. and *Terminalia bellerica* Gaertn. in equal proportions. The present research was conducted to investigate the antioxidant and in vitro cytotoxic activity of TPL on Human Colorectal Adenocarcinoma Cell Line (HT 29) and hepatocellular liver carcinoma (Hep G2). The methanol extracts of TPL showed significant antioxidant property via DPPH Free Radical Scavenging Assay and Iron Chelating Assay, of which methanol extract demonstrated the highest activity with an EC<sub>50</sub> value of 3.052 µg/ml and 10.55 µg/ml respectively. Folin-Ciocalteu Reagent Test and Aluminium Chloride Colourimetric Method also revealed the superiority of methanol in extracting phenolic compounds (49.35 µg GAE/mg) and flavonoids (99.47 µg QE/mg). The cytotoxic property of the extracts was tested on HT 29 and Hep G2 via 3-(4, 5-dimethylthiazol-2-yl)-2, 5-diphenyltetrazolium bromide (MTT) Assay. Methanol showed good cytotoxicity against HT 29 and Hep G2 cells, having an IC<sub>50</sub> value of 101.87 µg/ml, 86.21 µg/ml, 55.48 µg/ml and 110.31 µg/ml, 90.71 µg/ml, 60.21 µg/ml at 24, 48 and 72 hours of incubation respectively.

**Keywords:** Antioxidant activity; Cytotoxicity; Cancer cells.

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## Conflicts of Interest

The authors declare no conflict of interest.