

ABSTRACT 01

The Effects of Eczeffolia™ on The Migration and Invasion of Colon Cancer Cells

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Objectives: Colon cancer ranks third as the most common cancer globally with metastasis being the primary cause of mortality. The progression of metastasis is shown to significantly worsen the prognosis of cancer patients. Therapeutic interventions such as radiotherapy, chemotherapy and surgery utilised in treating colon cancer are receiving drawbacks due to manifestation of adverse side effects, drug resistance and disease recurrence. Therefore, increasing attention has been directed towards alternative therapeutic methods using natural products to lessen the drawbacks. Eczeffolia™ is an enriched extract of *Melicope Ptelefolia* (MP), commonly known as 'Tenggek Burung' in Malaysia, which has recently shown to have anticancer effects. It is enriched with 2,4,6-Trihydroxy-3-geranyl acetophenone (tHGA) which is shown to exhibit anti-inflammatory, antioxidant, anti-allergic and anticancer properties. This study may provide preliminary insights on its anticancer properties of Eczeffolia™, specifically on the inhibition of migration and invasion of colon cancer cells. **Methods:** HCT116 colon cancer cells were exposed to various concentrations of Eczeffolia™ ranging from 3.9 µg/mL to 1000 µg/mL to determine its cytotoxic effect and inhibitory concentration (IC₂₀ and IC₅₀) using MTT assay. Subsequently, scratch migration assay and transwell invasion assay were performed to determine the migratory and invasive capabilities of colon cancer cells following Eczeffolia™ treatment. **Results:** The IC₂₀ and IC₅₀ could not be obtained from the MTT assay, suggesting the IC₅₀ > 1000 µg/ml. A significant reduction in the percentage of cell migration and invasion of HCT116 cells was observed in Eczeffolia™ at a concentration of 1000 µg/mL ($p < 0.05$). **Conclusion:** Eczeffolia™ does not exhibit cytotoxic properties towards HCT116 cells but shows anti-migratory and anti-invasion properties at a high concentration. Therefore, it may be a potential therapeutic candidate for treatment of colon cancer metastasis.

Keywords: Melicope Ptelefolia, 2,4,6-Trihydroxy-3-geranyl acetophenone (tHGA), colon cancer, migration and invasion.

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