Chemical Composition and antiproliferative activity of essential oil from the leaves of a medicinal herb, Levisticum officinale, against UMSCC1 head and neck squamous carcinoma cells.


Source

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Abstract
BACKGROUND:

Oral squamous cell carcinoma (OSCC) is a challenging disease with a high mortality rate. Natural products represent a valuable source for the development of novel anticancer drugs. We investigated the cytotoxic potential of essential oil from the leaves of a medicinal plant, Levisticum officinale (lovage) on head and neck squamous carcinoma cells (HNSCC).

MATERIALS AND METHODS:

Cytotoxicity of lovage essential oil was investigated on the HNSCC cell line, UMSCC1. Additionally, we performed pharmacogenomics analyses.

RESULTS:

Lovage essential oil extract had an IC₅₀ value of 292.6 μg/ml. Genes involved in apoptosis, cancer, cellular growth and cell cycle regulation were the most prominently affected in microarray analyses. The three pathways to be most significantly regulated were extracellular signal-regulated kinase 5 (ERK5) signaling, integrin-linked kinase (ILK) signaling, virus entry via endocytic pathways and p53 signaling.

CONCLUSION:

Levisticum officinale essential oil inhibits human HNSCC cell growth.

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