

# Phytochemistry of *Luffa cylindrica* Belonging to Cucurbitaceae Family and its Anticancer Activity

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**Abstract:** *The research aims to identify bioactive compounds and evaluate their potential therapeutic applications, particularly in cancer treatment. Previous studies have highlighted the presence of saponins, flavonoids, and triterpenoids in L. cylindrica, but comprehensive phytochemical profiling and specific anticancer properties remain underexplored. HRLCMS analysis revealed a diverse array of phytochemicals, including chlorophylls, carotenoids, oleanolic acid, and various antioxidant constituents such as p-coumaric acid, feruloyl-glucose, and flavonoid glucuronides. The anticancer activity was assessed through in vitro assays using different cancer cell lines. Significant cytotoxic effects were observed, with specific phytochemicals demonstrating notable anticancer properties against non-Hodgkin's lymphoma, breast cancer, small cell lung cancer, and other cancer types.*

**Keywords:** *Luffa cylindrica*, phytochemistry, anticancer activity, HRLCMS, bioactive compounds, therapeutic applications

