

## Chemical composition and biological potentials of Lebanese *cupressus sempervirens* L. leaves' extracts

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### Abstract

The essential oils and defatted ethanolic extracts obtained from *Cupressus sempervirens* L. leaves collected from two geographically distinct regions in Lebanon (Beit El-Dein: mountain and Jbeil: sea-side) were analyzed for their chemical composition using GC/MS and phytochemical screening. These were then tested for their in-vitro antibacterial and anti-oxidant potentials. Many terpenoids have been detected in the essential oils at various percentages with  $\alpha$ -pinene and  $\beta$ -carene being the major constituents. Regarding the anti-oxidant potential study, the ethanolic extracts were able to effectively reduce DPPH which was strongly correlated with the high phenol and flavonoid content of these extracts. Regarding the anti-bacterial activity, essential oils exhibited a stronger potential mainly towards Gram-positive bacteria compared to the ethanolic extracts as shown by the disc-diffusion assay and minimal inhibitory concentration assay. The results obtained from this study reveal that the extracts of Lebanese Cypress leaves may be used as a good source of natural food preservatives and as drugs for various ailments.

### Biography

Layal Anka has completed her Master's degree in Applied Plant Biotechnology at the age of 22 years (2019) from the Lebanese University, Lebanon. In her thesis, she performed for the first time phytochemical and anti-bacterial analysis studies on native Lebanese Cypress leaves. She is the first author in the article published about the mentioned study in the Journal of Medicinal Plants Research. As with the economic crisis her country Lebanon has been passing through for two years, she is currently working as an educator in the private sector while still being ambitious to pursue her doctoral studies and research work in plant biology as she is well-known of being a dedicated, highly organized hard worker with a good experience in lab work.



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