

Al-Zaytoonah University  
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جامعة الزيتونة الأردنية  
عمادة الدراسات العليا

**Chemical and Biological Evaluation of Lavender**  
*(Lavandula angustifolia and Lavandula stoechas)*

**Grown in Jordan**

By

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## Abstract

*Lavandula angustifolia* is the most widely cultivated *Lavandula* species, While *Lavandula stoechas* native to France and has been introduced recently to Jordan. Their extracts have been used as herbal medicine. In this study, chemical and biological evaluation of both species, aqueous, ethanol, methanol, ethyl acetate, and chloroform extracts were conducted.

Methanol extract of *L.angustifolia* showed the highest total phenol, total flavonoids content while for *L.stoechas* ethanol extract has the highest content, the aqueous extract for both species relieved potent antioxidant activity, *L.angustifolia* ethanol extract showed the best cytotoxicity on MCF-7 and MDA-MB-231 cell lines, and this activity was confirmed *in vivo* and shown good reduction in tumor size. As a conclusion this study provides a novel insight and evidence on the anti-oxidant and antiproliferative effect of *L.angustifolia* ethanol extract against breast cancer.

**Keywords:** *Lavandula angustifolia*, *Lavandula stoechas*, Antioxidant, Antiproliferation, Total phenol, Flavonoids, LC-MS, GC-MS.

