

**Characterization of Phytochemicals in *Myrtus communis* L
seeds and fruit peels growing in east of Libya and their
Biological profile**

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Abstract

Myrtus communis L, endemic to Libya, holds promise for its medicinal properties, including anti-inflammatory, antioxidant, and appetising effects. It is used externally to promote wound healing. This work aims to explore the phytoconstituents present in the seeds and fruit peels of *Myrtus communis* L by GC/MS and LC-ESI-MS respectively and assess their antioxidant and tyrosinase inhibition activities. Phytochemical analysis indicated the presence of 11 fatty acids accounting about 78.61% of the total fatty acid content were found in myrtle seeds. Linolenic acid (C_{18:3}) was the major fatty acid, which represents (23.11%), while palmitic acid (C₁₆) accounts for 18.72% of total fatty acids. 7 anthocyanin compounds were identified in the fruit peels with relative percentage RP (59.84%) of total calculated peaks area in the positive ion mode chromatogram. Among the identified compounds Petunidin 3-O-glucoside and Malvidin 3-O-rutinoside were the most abundant anthocyanins and represented (12.48% and 11.87% respectively) of total area. Antioxidant assay showed that the ethanolic extract of the myrtle fruits exhibited higher free radical scavenging activities compared to the chloroform extract of the seeds (2.65±0.03 and 6.89±0.12) respectively. Similarly, The results with FRAP showed that the myrtle fruits have an extra antioxidant activity than the seeds (2.10±0.9 and 4.87±1.02) respectively. Tyrosinase inhibition activity were evaluated. The tested extracts displayed promising level of inhibition against the tyrosinase enzyme. Ethanolic extract of the fruits had greatest inhibitory effect against tyrosinase enzyme with IC₅₀ 126.35±0.92.