



Antioxidant/Antityrosinase Activities and Volatile Composition of *Peucedanum akalinae* Essential Oil

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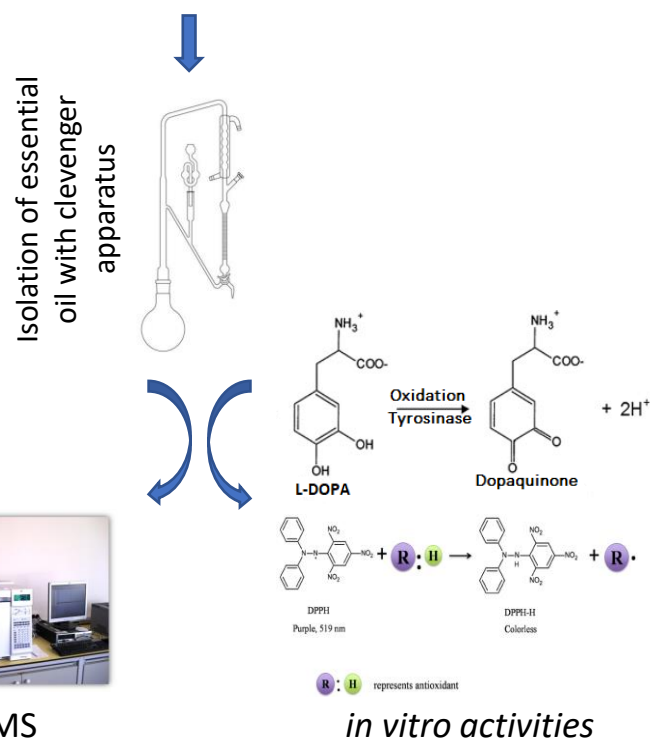
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Introduction

- Peucedanum species belong to the Apiaceae family and are widely distributed in Turkey. *P. akalinae* is described as a new species from Southern Turkey (Gurdal et al., 2019).
- In this study, volatile composition and antioxidant and antityrosinase activities of *Peucedanum alkalinae* essential oil were evaluated.

Materials and Methods



GC/MS

Results and Discussion

Table 1. The Composition of the Essential Oils of *Prangos munzurensis*

RRI	Compounds	%	IM
1032	α-Pinene	9.4	t _R , MS
1076	Camphene	0.5	t _R , MS
1118	β-Pinene	6.7	t _R , MS
1132	Sabinene	0.6	t _R , MS
1174	Myrcene	15.4	t _R , MS
1176	α-Phellandrene	10.5	t _R , MS
1188	α-Terpinene	0.2	t _R , MS
1203	Limonene	6.4	t _R , MS
1213	β-Phellandrene	5.1	t _R , MS
1246	(Z)-β-Ocimene	tr	t _R , MS
1255	γ-Terpinene	0.5	t _R , MS
1280	p-Cymene	13.1	t _R , MS
1290	Terpinolene	0.3	t _R , MS
1429	Perillen	0.5	MS
1497	α-Copaene	0.4	MS
1535	β-Bourbonene	1.0	t _R , MS
1553	Linalool	0.7	t _R , MS
1591	Bornyl acetate	tr	t _R , MS
1611	Terpinen-4-ol	0.6	t _R , MS
1670	trans-Pinocarveol	0.8	t _R , MS
1690	Cryptone	1.1	MS
1704	γ-Murolene	0.5	MS
1706	α-Terpineol	0.4	t _R , MS
1726	Germacrene D	2.1	MS
1747	p-Mentha-1,5-dien-8-ol	0.3	MS
1773	δ-Cadinene	0.8	t _R , MS
1776	γ-Cadinene	0.2	MS
1786	ar-Curcumene	0.9	MS
1804	Myrtenol	0.5	MS
1823	p-Mentha-1(7),5-dien-2-ol	1.5	MS
1853	Germacrene B	1.4	MS
1857	Geraniol	0.2	t _R , MS
1864	p-Cymen-8-ol	0.3	t _R , MS
1921	α-Phellandrene epoxide	0.3	MS
1945	1,5-Epoxy-salvial(4)14-ene	0.4	MS
2008	Caryophyllene oxide	0.8	t _R , MS
2037	Salvial-4(14)-en-1-one	0.5	MS
2071	Humulene epoxide-II	1.0	MS
2144	Spathulenol	1.0	t _R , MS
2239	Carvacrol	3.5	t _R , MS
2278	Torilenol	1.2	MS
2369	Eudesma-4(15), 7-dien-1b-ol	2.3	MS
2931	Hexadecanoic acid	0.7	MS
	Total %	94.6	

In the oil obtained from herba, 43 compounds were identified representing 94.6 %, including 12 monoterpene hydrocarbon (68.7 %), 12 oxygenated monoterpenes (9.6 %), 8 sesquiterpene hydrocarbons (7.3 %), 7 oxygenated sesquiterpenes (7.2 %) and 2 other compounds (1.8 %) (Table 1).

The essential oil yield was calculated as 0.4 %. The major compounds were identified as myrcene (15.4 %), p-cymene (13.1 %), α-phellandrene (10.5 %), α-pinene (9.5 %), β-pinene (6.7 %), limonene (6.4 %) and β-phellandrene (5.1 %).

Essential oil showed DPPH radical scavenging activity 68.79 ± 2.36 % at 14 mg/mL concentration and inhibited the tyrosinase 9.22 ± 0.77 % at 1 mg/mL concentration (Table 2).

Conclusions

Essential oil compositions of *Peucedanum akalinae* herba were analyzed with a GC-MS system. To the best of our knowledge, DPPH radical scavenging activity and tyrosinase inhibition of *Peucedanum akalinae* essential oil and its volatile composition were evaluated for the first time.

References

Gürdal, B. A. H. A. R., Tuncay, H. O., & Akpulat, H. A. (2019). *Peucedanum akalinae* (Apiaceae), a new species from Southern Turkey. *Phytotaxa*, 425(3), 145-153.

Table 2. DPPH radical scavenging and tyrosinase inhibitory activities of *Prangos munzurensis* fruits essential oil

	DPPH (inhibition %)	Tyrosinase (% inhibition)
Herba EO	68.79 ± 2.36	9.22 ± 0.77
Vit C.	9.3 ± 0.01 µg/mL	-
Kojic acid	-	3.6 ± 0.01 µg/mL (IC ₅₀)