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Medicinal Plants of the Family Lamiaceae as Functional Foods – a Review

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Supplementary Online Material (SOM)

The Lamiaceae species which can be used as a functional food

No.	Species	Edible part	Medicinal properties due to biological activity	References
1	*Acinos graveolens* (M. Bieb.) Link	leaves	antimicrobial	Golubovic T., Palic R., Kitic D., Zlatkovic B., Ristic M., Lazarevic J., Stojanovic G. (2010): Chemical composition and antimicrobial activity of the essential oil of *Acinos graveolens*. Chemistry of Natural Compounds, 46: 645–648.
2	*Acinos rotundifolius* Pers.	leaves	antimicrobial	Ulukanli Z., Ulukanli S., Ozbay H., Ilcim A., Tuzcu M., (2005): Antimicrobial activities of some plants from the eastern Anatolia region of Turkey. Pharmaceutical Biology, 43: 334–339.
3	*Ajuga bracteosa* Wall. ex Benth.	leaves, roots	antimicrobial, anti-inflammatory	Upadhyay S.U., Patel V.B., Patel A.A., Upadhyay U.M., Patel N.M. (2012): *Ajuga bracteosa*: a promising herb. Pharma Science Monitor an International Journal of Pharmaceutical Sciences, 3: 2085–2104.
4	*Ajuga macrosperma* Wall.	whole plant	alleviate fever and remove phlegm	Castro A., Coll J., Tandrón Y.A., Pant A.K., Mathela C.S. (2008): Phytoecdysteroids from *Ajuga macrosperma* var. *breviflora* roots. Journal of Natural Products, 71: 1294–1296.
5	*Anisochilus carnosus* (L.) Wall. ex Benth.	leaves	antibacterial	Senatore F., Lentini F., Venza F., Bruno M., Napolitano F. (2003): Composition and antibacterial activity of the essential oil of *Anisochilus carnosus* (Linn. fil.) Benth, a Tamil plant acclimatized in Sicily. Flavour and Fragrance Journal, 18: 202–204.
6	*Anisochilus harmandii* Doan	tubers	antimycobacterial	Kulkarni R.R., Shurpali K., Puranik V.G., Sarkar D., Joshi S.P. (2013): Antimycobacterial labdane diterpenes from *Leucas stelligera*. Journal of Natural Products, 76: 1836–1841.
7	*Anisomeles indica* (L.) Kuntze	leaves	carminative, astringent, and tonic	Arijit S., Arpita B. (2013): Documentation of some ethno-medicinal plants of family Lamiaceae in Bankura district West Bengal India. International Research Journal of Biological Sciences, 2: 63–65.
8	*Agastache rugosa* (Fisch. & C.A. Mey.) Kuntze	leaves and seed	antimicrobial	Gong H.Y., Ding J.B., Zhu M., Liu H.B., Tian S.G., Ma X.M. (2012): Phytochemical investigation and antimicrobial activity of *Agastache rugosa* growing in Xinjiang China. Asian Journal of Chemistry, 24: 2961–2964.

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9	*Calamintha grandiflora* (L.) Moench	leaves	antioxidant	Conforti F., Marrelli M., Statti G., Menichini F., Uzunov D., Solimene U., Menichini F. (2012): Comparative chemical composition and antioxidant activity of *Calamintha nepeta* (L.) Savi subsp. *glandulosa* (Req.) Nyman and *Calamintha grandiflora* (L.) Moench (Labiatae). Natural Product Research, 26: 91–97.
10	*Calamintha nepeta* (L.) Savi	leaves	antioxidant	
11	*Calamintha sylvatica* Bromf.	leaves	sedating and antipyretic	Ortiz de Urbina A.V., Martin M.L., Montero M.J., Moran A., San Roman L. (1989): Sedating and antipyretic activity of the essential oil of *Calamintha sylvatica* subsp. *ascendens*. Journal of Ethnopharmacology, 25: 165–171.
12	*Cedronella canariensis* (L.) Webb. & Berth.	leaves	antimicrobial, hypoglycaemic, and diuretic	Lopez Garcia R.E., Hernandez Perez M., Rabanal R.M., Darias V., Martinherrera D., Arias A., Sanz J. (1992): Essential oils and antimicrobial activity of 2 varieties of *Cedronella canariensis* (L) W & B. Journal of Ethnopharmacology, 36: 207–211.
			cardiovascular	Lopez Garcia R.E., Martin Herrera D., Darias V., Rabanal R.M. (1996): Study of the hypoglycaemic diuretic and cardiovascular activity of *Cedronella canariensis* var. *canariensis* (L.) W & B. Phytotherapy Research. 10: 541–543.
13	*Clerodendrum indicum* (L.) Kuntze	fruits	against bronchitis, asthma, and different immunological diseases	Mukherjee A., Bandyopadhyay A., Dutta S., Basu S. (2013): Phytoaccumulation of iron by callus tissue of *Clerodendrum indicum* (L.). Journal of Chemical Ecology, 29: 564–571.
14	*Clinopodium chinense* (Benth.) Kuntze	leaves	treatment of endothelial dysfunction-associated diseases	Li J., Wu F.H., Chen K., Liang J.Y., Ma S.P. (2013): Extract of *Clinopodium chinense* inhibits high glucose-induced apoptosis in human umbilical vein endothelial cells. Journal of Cardiovascular Pharmacology, 61: 265–271.
15	*Coleus amboinicus* Lour	leaves	carminative, against asthma, and chronic bronchitis	Arijit S., Arpita B. (2013): Documentation of some ethno-medicinal plants of family Lamiaceae in Bankura district West Bengal India. International Research Journal of Biological Sciences, 2: 63–65.
16	*Coleus aromaticus* Benth.	leaves	the treatment of headache, fever, epilepsy, and dyspepsia	Arijit S., Arpita B. (2013): Documentation of some ethno-medicinal plants of family Lamiaceae in Bankura district West Bengal India. International Research Journal of Biological Sciences, 2: 63–65.
17	*Coleus parviflorus* Benth. syn. *Solenostemon rotundifolius*	roots	antioxidant	Sandhya C., Vijayalakshmi N.R. (2001): Antioxidant activity of flavonoids from *Solenostemon rotundifolius* in rats fed normal and high fat diets. Journal of Nutraceuticals, Functional & Medical Foods, 3: 55–66.
18	*Coleus scutellarioides* (L.) Benth.	roots	cuts and wounds	Abe R., Ohtani K. (2013): An ethnobotanical study of medicinal plants and traditional therapies on Batan Island, the Philippines. Journal of Ethnopharmacology, 145: 554–565.
19	*Dracocephalum moldavica* L.	leaves	vasoactive and antioxidant	Ibarra-Alvarado C., Rojas A., Mendoza S., Bah M., Gutierrez D.M., Hernandez-Sandoval L., Martinez. M. (2010): Vasoactive and antioxidant activities of plants used in Mexican traditional medicine for the treatment of cardiovascular diseases. Pharmaceutical Biology, 48: 732–739.
			antimicrobial	Sonboli A., Mojarrad M., Gholipour A., Ebrahimi S.N., Arman M. (2008): Biological activity and composition of the essential oil of *Dracocephalum moldavica* L, grown in Iran. Natural Product Communications, 3: 1547–1550.

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20	*Elsholtzia blanda* Benth.	shoots	against inflammation and colera	Bestmann H.J., Rauscher J., Vostrowsky O., Pant A.K., Dev V., Parihar R., Mathela C.S. (1992): Constituents of the essential oil of *Elsholtzia blanda* Benth (Labiatae). Journal of Essential Oil Research, 4: 121–124.
			antiviral, antibacterial, anti-oxidant	Guo Z., Liu Z., Wang X., Liu W., Jiang R., Cheng R., She G. (2012): *Elsholtzia* phytochemistry and biological activities. Chemistry Central Journal, 6: 147.
21	*Elsholtzia ciliata*	leaves	antibacterial	Guo Z., Liu Z., Wang X., Liu W., Jiang R., Cheng R., She G. (2012): *Elsholtzia* phytochemistry and biological activities. Chemistry Central Journal, 6: 147.
			antioxidant	Liu X., Jia J., Yang L., Yang F., Ge H., Zhao C., Zhang L., Zu Y. (2012): Evaluation of antioxidant activities of aqueous extracts and fractionation of different parts of *Elsholtzia ciliate*. Molecules, 17: 5430–5441.
22	*Elsholtzia densa* Benth.	leaves	antimicrobial	Khan M., Ganie S.A., Wani I.H., Ganai B.A., Malik A.H., Zargar M.A., Masood A., Hamid R. (2013): Antimicrobial potentiality of *Elsholtzia densa* against pathogenic bacterial and fungal strains. Journal of Pure and Applied Microbiology, 7: 1019–1026.
			antiviral	Guo Z., Liu Z., Wang X., Liu W., Jiang R., Cheng R., She. G. (2012): *Elsholtzia* phytochemistry and biological activities. Chemistry Central Journal, 6: 147.
			antibacterial	Kavidayal C.S., Tandon S., Pant A.K., Kasana V.K. (2006): Antibacterial activity of essential oils of *Elsholtzia* spp. and extracts of *Vernonia cinerea*. Annals of Plant Protection Sciences, 14: 506–507.
23	*Elsholtzia pilosa* Benth.	shoots	antibacterial	
24	*Eremostachys adenantha* Jaub. & Spach.	leaves	antioxidant	Firuzi O., Javidnia K., Gholami M., Soltani M., Miri R. (2010): Antioxidant activity and total phenolic content of 24 lamiaceae species growing in Iran. Natural Product Communications, 5: 261–264.
25	*Glechoma hederacea* L.	leaves	antioxidant, anti-mutagenic	Chou S.T., Chan Y.R., Chung Y.C. (2012): Studies on the antimutagenicity and antioxidant activity of the hot water extract of *Glechoma hederacea*. Journal of Food and Drug Analysis, 20: 637–645.
26	*Gmelina arborea* Roxb.	fruits	anthelmintic, antimicrobial, antidiabetic, diuretic, hepatoprotective, and antiepileptic	Nayak B.S., Dinda S.C., Ellaiah P. (2013): Evaluation of diuretic activity of *Gmelina arborea* Roxb fruit extracts. Asian Journal of Pharmaceutical and Clinical Research, 6 (Suppl 1): 111–113.
27	*Gomphostemma crinitum* Wall.	leaves	antimalarial	Acharya B.N., Saraswat D., Kaushik M.P. (2008): Antimalarial activity of *Gomphostemma crinitum* leaf extracts. Medicinal Chemistry Research, 17: 530–540.
28	*Gomphostemma parviflorum* Wall.	roots and leaves	antinociceptive, anti-inflammatory, cns depressant, antimicrobial	Shams-Ud-Doha K.M., Al Mahmud Z., Bachar S.C., Qais N. (2013): Antinociceptive anti-inflammatory antimicrobial and central nervous system depressant activities of ethanolic extract of leaves and roots of *Gomphostemma parviflorum* var. *parviflorum* wall. Pharmacognosy Research, 5: 233–240.
29	*Hyptis atrorubens* Poit.	leaves	antimicrobial	Abedini A., Roumy V., Mahieux S., Biabiany M., Standaert-Vitse A., Riviere C., Sahpaz S., Bailleul F., Neut C., Hennebelle T. (2013): Rosmarinic acid and its methyl ester as antimicrobial components of the hydromethanolic extract of *Hyptis atrorubens* Poit (Lamiaceae). Evidence-Based Complementary and Alternative Medicine, Article ID 604536. doi: 101155/2013/604536

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30	*Hyptis brevipes* Poit.	leaves	antimicrobial, antioxidant, cytotoxic	Xu D.H., Huang Y.S., Jiang D.Q., Yuan. K. (2013): The essential oils chemical compositions and antimicrobial, antioxidant activities and toxicity of three *Hyptis* species. Pharmaceutical Biology, 51: 1125–1130.
31	*Hyptis crenata* Pohl. ex Benth.	leaves	antimicrobial	Violante I.M.P., Garcez W.S., Barbosa C.D., Garcez F.R. (2012a): Chemical composition and biological activities of essential oil from *Hyptis crenata* growing in the Brazilian Cerrado. Natural Product Communications, 7: 1387–1389. Violante I.M.P., Hamerski L., Garcez W.S., Batista A.L., Chang M.R., Pott V.J., Garcez F.R. (2012b): Antimicrobial activity of some medicinal plants from the cerrado of the Central-Western region of Brazil. Brazilian Journal of Microbiology, 43: 1302–1308.
32	*Hyptis pectinata* Poit.	leaves	anti-inflammatory and antinociceptive	Raymundo L.J.R.P., Guilhon C.C., Alviano D.S., Matheus M.E., Antoniolli A.R., Cavalcanti S.C.H., Alves P.B., Alviano C.S., Fernandes P.D. (2011): Characterisation of the anti-inflammatory and antinociceptive activities of the *Hyptis pectinata* (L.) Poit essential oil. Journal of Ethnopharmacology, 134: 725–732.
33	*Hyptis spicigera* Lamarck	seed	gastroprotective and ulcer healing	Takayama C., de-Faria FM., de Almeida A.C.A., Valim-Araujo D.D.E.O., Rehen C.S., Dunder R.J., Socca E.A.R., Manzo L.P., Rozza A.L., Salvador M.J. (2011): Gastroprotective and ulcer healing effects of essential oil from *Hyptis spicigera* Lam. (Lamiaceae). Journal of Ethnopharmacology, 135: 147–155.
			antimicrobial	Ladan Z., Amupitan J.O., Okonkwo E.M., Aimola I.A., Habila N. (2009): Antimicrobial potency of *Hyptis spicigera* leaf extracts against some pathogenic microorganisms. Journal of Medicinal Plants Research, 3: 905.
34	*Isodon inflexus* (Thunb.) Kudo	leaves	anti-inflammatory	Lee C., Hong S.S., Han X.H., Jin Q., Li D., Kim T.O., Kim H.K., Lee J., Kwon S.H., Kim Y.B., Lee M.K., Hwang B.Y. (2008): A new abietane diterpenoid from *Isodon inflexus*. Archives of Pharmacal Research, 31: 1381–1384.
35	*Isodon lophanthoides* (Buch.-Ham. ex D.Don) H.Hara	aerial parts	cytotoxic	Liang Y., Xie H., Wu P., Jiang Y., Wei X., (2013): Podocarpane, isopimarane, and abietane diterpenoids from *Isodon lophanthoides* var. *graciliflorus*. Food Chemistry, 136: 1177–1182.
			antimalarial and anti-inflammatory	Sun D.H., Huang S.H., Han Q.B. (2006): Diterpenoids from *Isodon* species and their biological activities. Natural Product Reports, 23: 673–698.
36	*Isodon rugosus* Wall. ex Benth.	whole plant	antifungal	Rauf A., Khan A., Rasool S., Shah AZ., Saleem M. (2012): In-vitro antifungal activity of three selected pakistani medicinal plants Middle-East. Journal of Medicinal Plants Research, 1: 41–43.
37	*Lallemantia iberica* (Bieb.) Fisch. & C.A. Mey.	leaves and seed	antioxidant	Amanzadeh Y., Dehaghi N.K., Gohari A.R., Monsef-Esfehan H.R., Sadat Ebrahimi S.E. (2011): Antioxidant activity of essential oil of *Lallemantia iberica* in flowering stage and post-flowering stage. Research Journal of Biological Sciences, 6: 114–117.
38	*Lamium amplexicaule* L.	leaves, stem, and flowers	antirheumatic, excitant, fever-reducing, laxative, stimulant	Joudi L., Bibalani G.H., Shadkami H. (2011): Exploration of medicinal species of Lamiaceae family in Ilkhji and Sharafaldin Regions of Esat Azarbaijan in Iran. Current Research Journal of Biological Sciences, 3: 385–387.

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No.	Species	Edible part	Medicinal properties due to biological activity	References
39	*Lamium garganicum* L.	leaves and flowers	antimicrobial and free radical scavenging	Yalçın F.N., Kaya D., Kılıç E., Özalp M., Ersöz T., Çalış I. (2007): Antimicrobial and free radical scavenging activities of some *Lamium* species from Turkey. Hacettepe University Journal of the Faculty of Pharmacy, 27: 11–22.
40	*Lamium maculatum* L.	flowers	antioxidant	Matkowski A., Tasarz P., Szypuła E. (2008): Antioxidant activity of herb extracts from five medicinal plants from Lamiaceae subfamily Lamioideae. Journal of Medicinal Plants Research, 2: 321–330.
41	*Lamium tenuiflorum* L.	leaves	antifungal	Dulger B. (2009): Antifungal activity of *Lamium tenuiflorum* against some medical yeast *Candida* and *Cryptococcus* species. Pharmaceutical Biology, 47: 467–470.
42	*Lavandula dentata* L.	flowers	antioxidant	Msaada K., Salem N., Tammar S., Hammami M., Saharkhiz M.J., Debiche N., Limam F., Marzouk B. (2012): Essential oil composition of *Lavandula dentata*, *L. stoechas* and *L. multifida* cultivated in Tunisia. Journal of essential oil-bearing plants, 15: 1030–1039.
			antimicrobial	Imelouane B., Elbachiri A., Ankit M., Benzeid H., Khedid K. (2009): Physico-chemical compositions and antimicrobial activity of essential oil of eastern moroccan *Lavandula dentate*. International Journal of Agriculture and Biology, 11: 113–118.
43	*Lavandula latifolia* Medik.	inflorescences	antimicrobial	Rota C., Carraminana J.J., Burillo J., Herrera A. (2004): *In vitro* antimicrobial activity of essential oils from aromatic plants against selected foodborne pathogens. Journal of Food Protection, 67: 1252–1256. Roller S., Ernest N., Buckle J. (2009): The antimicrobial activity of high-necrodane and other lavender oils on methicillin-sensitive and -resistant *Staphylococcus aureus* (MSSA and MRSA). Journal of Alternative and Complementary Medicine, 15: 275–279.
44	*Lavandula luisieri* (Rozeira) Rivas Mart.	flowering tips	antimicrobial	Roller S., Ernest N., Buckle J. (2009): The antimicrobial activity of high-necrodane and other lavender oils on methicillin-sensitive and -resistant *Staphylococcus aureus* (MSSA and MRSA). Journal of Alternative and Complementary Medicine, 15: 275–279.
			antifungal	Zuzartea M., Gonçalvesa M.J., Cruzb M.T., Cavaleiroa C., Canhotoc J., Vazd S., Pintod E., Salgueiroa L. (2012): *Lavandula luisieri* essential oil as a source of antifungal drugs. Food Chemistry, 135: 1505–1510.
			antioxidant	Matos F., Miguel M.G., Duarte J., Venâncio F., Moiteiro C., Correia A.I.D, Figueiredo A.C., Barroso J.G., Pedro L.G. (2009): Antioxidant capacity of the essential oils from *Lavandula luisieri*, *L. stoechas* subsp *lusitanica*, *L. stoechas* subsp *lusitanica* × *L. luisieri* and *L. viridis* grown in Algarve (Portugal). Journal of Essential Oil Research, 21: 327–336.
45	*Lavandula* × *intermedia* Emeric. ex Loisel.	leaves, petals, and flowering tips	antimicrobial	Jianu C., Pop G., Gruia A.T., Horhat F.G. (2013): Chemical composition and antimicrobial activity of essential oils of lavender (*Lavandula angustifolia*) and lavandin (*Lavandula* × *intermedia*) grown in Western Romania. International Journal of Agriculture and Biology, 15: 772–776.
			antioxidant	Blazekovic B., Vladimir-Knezevic S., Brantner A., Stefan M.B. (2010): Evaluation of antioxidant potential of *Lavandula* × *intermedia* Emeric ex Loisel 'Budrovka': a comparative study with *L. angustifolia* Mill. Molecules, 15: 5971–5987.

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46	*Lavandula multifida* L.	aerial part	antifungal	Zuzarte M., Vale-Silva L., Goncalves M.J., Cavaleiro C., Vaz S., Canhoto J., Pinto E., Salgueiro L. (2012): Antifungal activity of phenolic-rich *Lavandula multifida* L. essential oil. European Journal of Clinical Microbiology, 31: 1359–1366.
			antioxidant	Messaoud C., Chograni H., Boussaid M. (2012): Chemical composition and antioxidant activities of essential oils and methanol extracts of three wild *Lavandula* L. species. Natural Product Research, 26: 1976–1984.
47	*Lavandula pedunculata* (Mill.) Cav.	flowered aerial part	antifungal	Zuzarte M., Goncalves M.J., Cavaleiro C., Dinis A.M., Canhoto J.M., Salgueiro L.R. (2009): Chemical composition and antifungal activity of the essential oils of *Lavandula pedunculata* (Miller) Cav. Chemistry & Biodiversity, 6: 1283–1292.
48	*Lavandula stoecheas* (Boiss.) Rozeira	leaves and flowers	antioxidant	Msaada K., Salem N., Tammar S., Hammami M., Saharkhiz M.J., Debiche N., Limam F., Marzouk B. (2012): Essential oil composition of *Lavandula dentata*, *L. stoechas* and *L. multifida* cultivated in Tunisia. Journal of Essential Oil Bearing Plants, 15: 1030–1039. Matos F., Miguel M.G., Duarte J., Venâncio F., Moiteiro C., Correia A.I.D, Figueiredo A.C., Barroso J.G., Pedro L.G. (2009): Antioxidant capacity of the essential oils from *Lavandula luisieri*, *L. stoechas* subsp. *lusitanica*, *L. stoechas* subsp. *lusitanica* × *L. luisieri* and *L. viridis* grown in Algarve (Portugal). Journal of Essential Oil Research, 21: 327–336. Messaoud C., Chograni H., Boussaid M. (2012): Chemical composition and antioxidant activities of essential oils and methanol extracts of three wild *Lavandula* L. species. Natural Product Research, 26: 1976–1984.
			antimicrobial	Roller S., Ernest N., Buckle J. (2009): The Antimicrobial activity of high-necrodane and other lavender oils on methicillin-sensitive and -resistant *Staphylococcus aureus* (MSSA and MRSA). Journal of Alternative and Complementary Medicine, 15: 275–279.
49	*Lavandula viridis* L'Hér,	flowered aerial part	antioxidant	Matos F., Miguel M.G., Duarte J., Venâncio F., Moiteiro C., Correia A.I.D, Figueiredo A.C., Barroso J.G., Pedro L.G. (2009): antioxidant capacity of the essential oils from *Lavandula luisieri*, *L. stoechas* subsp. *lusitanica*, *L. stoechas* subsp *lusitanica* × *L. luisieri* and *L. viridis* grown in Algarve (Portugal). Journal of Essential Oil Research, 21: 327–336.
			antioxidant and anti-cholinesterase activity	Costa P., Goncalves S., Valentao P., Andrade P.B., Romano A. (2013): Accumulation of phenolic compounds *in vitro* cultures and wild plants of *Lavandula viridis* L'Her and their antioxidant and anti-cholinesterase potential. Food and Chemical Toxicology, 57: 69–74.
50	*Leucas cephalotes* (Roth.) Spreng.	flowers and leaves	stimulant, diaphoretic, antiseptic	Arijit S., Arpita B. (2013): Documentation of some ethno-medicinal plants of family Lamiaceae in Bankura district West Bengal India. International Research Journal of Biological Sciences, 2: 63–65.
51	*Leucas lanata* Benth.	leaves	free radical scavenging and antiepileptic	Ramalingam R., Nath A.R., Madhavi B.B., Nagulu M., Balasubramaniam A. (2013): Free radical scavenging and antiepileptic activity of *Leucas lanata*. Journal of Pharmacy Research, 6: 368–372.

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52	*Leucas plukenetia* (Roth) Spreng.	leaves	treatment of sinusitis	Pegu R., Gogoi J., Tamuli A.K., Teron R. (2013): Ethnobotanical study of wild edible plants in Poba reserved forest Assam India multiple functions and implications for conservation. Research Journal of Agriculture and Forestry Sciences, 1: 1–10.
53	*Leucas stelligera* Wall.	leaves	antimycobacterial	Kulkarni R.R., Shurpali K., Puranik V.G., Sarkar D., Joshi S.P. (2013): Antimycobacterial labdane diterpenes from *Leucas stelligera*. Journal of Natural Products, 76: 1836–1841.
54	*Leonotis nepetaefolia* (L.) R.Br.	leaves, inflorescence, and flowers	tonic, spasmolytic, against burns and scalds	Arijit S., Arpita B. (2013): Documentation of some ethno-medicinal plants of family Lamiaceae in Bankura district West Bengal India. International Research Journal of Biological Sciences, 2: 63–65.
55	*Leonurus sibiricus* L.	leaves and root	antibacterial, respiratory stimulant, febrifuge	Ahmed F., Islam A.M., Rahman M.M. (2006): Antibacterial activity of *Leonurus sibiricus* aerial parts. Fitoterapia, 77: 316–317.
56	*Lycopus lucidus* Turcz. ex Benth.	young stems, leaves, and roots	anticancer, antioxidant, antimicrobial	Yu J.Q., Lei J.C., Zhang X.Q., Yu H.D., Tian D.Z., Liao Z.X., Zou G.L. (2011): Anticancer antioxidant and antimicrobial activities of the essential oil of *Lycopus lucidus* Turcz var. *hirtus* Regel. Food Chemistry, 126: 1593–1598.
57	*Lycopus uniflorus* L.	roots	anti-inflammatory, anticancer	Demirdjian S.A., Hariri E.H., Mroueh M.A., Taleb R., Daher C.F. (2013): Evaluation of anti-inflammatory and anti-cancer activities of *Lycopus uniflorus* fractions. Planta Medica, 79: 107.
58	*Lycopus virginicus* L.	roots	antitussive	Aziz A., Khan I.A., Perveen A., Agha S., Munawar S.H., Manzoor Z. (2011): Evaluation of antitussive activity of *Lycopus europaeus* on cough reflex induced by different cough induced models in mice. International Journal of Pharmaceutical Sciences and Research, 3: 381–385.
59	*Meehania urticifolia* (Miq.) Makino	leaves	hyaluronidase inhibitory	Murata T., Miyase T., Yoshizaki F. (2011): Hyaluronidase inhibitory rosmarinic acid derivatives from *Meehania urticifolia*. Chemical and Pharmaceutical Bulletin, 59: 88–95.
60	*Melittis melissophyllum* L.	flowers and shoots	antioxidant	Kaurinovic B., Popovic M., Vlaisavljevic S., Raseta M. (2011): Antioxidant activities of *Melittis melissophyllum* L. (Lamiaceae). Molecules, 16: 3152–3167.
61	*Mentha aquatica* L.	aerial part	antioxidant and antibacterial	Dhifi W., Litaiem M., Jelali N., Hamdi N., Mnif W. (2011): Identification of a new chemotye of the plant *Mentha aquatica* grown in Tunisia chemical composition, antioxidant and biological activities of its essential oil. Journal of Essential Oil Bearing Plants, 14: 320–328.
62	*Mentha cervina* L.	leaves	antibacterial and antifungal	Rodrigues L., Duarte A., Monteiro A., Brito L., Figueiredo A., Povoa O. (2010): Antibacterial and antifungal activity of *Mentha cervina* essential oils and their main components. Planta Medica, 76: 1307–1307.
			antioxidant	Politi M., Rodrigues C.L., Giao M.S., Pintado M.E., Castro P.M.L. (2008): Antioxidant principles and volatile constituents from the North-Western Iberian mint "ervapeixeira" *Mentha cervina*. Natural Product Communications, 3: 2065–2068.
63	*Mentha citrate* L.	leaves	antioxidant	Ahmad N., Fazal H., Ahmad I., Abbasi B.H. (2012): Free radical scavenging (DPPH) potential in nine *Mentha* species. Toxicology & Industrial Health, 28: 83–89.
64	*Mentha crispa* L.	leaves	antioxidant	Gonçalves R.S., Battistin A., Pauletti G., Rota L., Serafini L.A. (2009): Antioxidant properties of essential oils from *Mentha* species evidenced by electrochemical methods. Revista Brasileira de Plantas Medicinais, 11: 372–382.

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No.	Species	Edible part	Medicinal properties due to biological activity	References
65	*Mentha longifolia* L.	aerial part	treatment of colic, menstrual disorders, indigestion, flatulence, pulmonary infection, headache, fever, cough, colds, and urinary tract infections	Joudi L., Bibalani G.H., Shadkami H. (2011): Exploration of medicinal species of Lamiaceae family in Ilkhji and Sharafaldin regions of East Azarbaijan in Iran. Current Research Journal of Biological Sciences, 3: 385–387.
			antioxidant	Ahmad N., Fazal H., Ahmad I., Abbasi B.H. (2012): Free radical scavenging (DPPH) potential in nine *Mentha* species. Toxicology & Industrial Health, 28: 83–89.
			antimicrobial and antioxidant	Mkaddem M., Bouajila J., Ennajar M., Lebrihi A., Mathieu F., Romdhane M. (2009): Chemical composition and antimicrobial and antioxidant activities of *Mentha* (*longifolia* L. and *viridis*) essential oils. Journal of Food Science, 74: M358–M363.
66	*Mentha pulegium* L.	aerial part	antimicrobial	Hanene G., Aouadhi C., Moufida W., Faten T., Sebei H., Maaroufi A., Hasnaoui B. (2013): Chemical composition and *in vitro* antimicrobial activities of *Mentha pulegium* leaves extracts against foodborne pathogens. Journal of Food Safety, 33: 239–246.
			antioxidant and antimicrobial	Teixeira B., Marques A., Ramos C., Batista I., Serrano C., Matos O., Neng N.R., Nogueira J.M.F., Saraiva J.A., Nunes M.L. (2012): European pennyroyal (*Mentha pulegium*) from Portugal chemical composition of essential oil and antioxidant and antimicrobial properties of extracts and essential oil. Industrial Crops and Products, 36: 81–87.
			antioxidant	Ahmad N., Fazal H., Ahmad I., Abbasi B.H. (2012): Free radical scavenging (DPPH) potential in nine *Mentha* species. Toxicology & Industrial Health, 28: 83–89.
67	*Mentha rotundifolia* L. syn. *Mentha suaveolens* Ehrh.	leaves	antioxidant and antimicrobial	Riahi L., Elferchichi M., Ghazghazi H., Jebali J., Ziadi S., Aouadhi C., Chograni H., Zaouali Y., Zoghlami N., Mliki A. (2013): Phytochemistry, antioxidant and antimicrobial activities of the essential oils of *Mentha rotundifolia* L in Tunisia. Industrial Crops and Products, 49: 883–889.
			anti-inflammatory and antioxidant	El-Kashoury E.S.A., El-Askary H.I., Kandil Z.A., Salem M.A., Sleem A.A. (2012): Chemical composition and biological activities of the essential oil of *Mentha suaveolens* Ehrh. Zeitschrift fur Naturforschung C - A Journal of Biosciences, 67: 571–579.
			antioxidant	Ahmad N., Fazal H., Ahmad I., Abbasi B.H. (2012): Free radical scavenging (DPPH) potential in nine *Mentha* species. Toxicology & Industrial Health, 28: 83–89.
68	*Mentha requienii* Benth.	leaves	antimicrobial	Chessa M., Sias A., Piana A., Mangano G.S., Petretto G.L., Masia M.D., Tirillini B., Pintore G. (2013): Chemical composition and antibacterial activity of the essential oil from *Mentha requienii* Bentham. Natural Product Research, 27: 93–99.
69	*Mentha royleana* Benth.	leaves	antioxidant	Ahmad N., Fazal H., Ahmad I., Abbasi B.H. (2012): Free radical scavenging (DPPH) potential in nine *Mentha* species. Toxicology & Industrial Health, 28: 83–89.

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No.	Species	Edible part	Medicinal properties due to biological activity	References
70	*Mentha spicata* L.	leaves	antioxidant	Ahmad N., Fazal H., Ahmad I., Abbasi B.H. (2012): Free radical scavenging (DPPH) potential in nine *Mentha* species. Toxicology & Industrial Health, 28: 83–89. Gonçalves R.S., Battistin A., Pauletti G., Rota L., Serafini L.A. (2009): Antioxidant properties of essential oils from *Mentha* species evidenced by electrochemical methods. Revista Brasileira de Plantas Medicinais, 11: 372–382.
71	*Mentha* × *gentilis* L.	leaves	antioxidant	Gonçalves R.S., Battistin A., Pauletti G., Rota L., Serafini L.A. (2009): Antioxidant properties of essential oils from *Mentha* species evidenced by electrochemical methods. Revista Brasileira de Plantas Medicinais, 11: 372–382.
72	*Mentha* × *rotundifolia* (L.) Huds.	leaves	antiproliferative and antineoplastic	Nedel F., Begnini K., de Azambuja Carvalho P.H., Lund R.G., Beira F.T.A., Del Pino F.A.B. (2012): Antiproliferative activity of flower hexane extract obtained from *Mentha spicata* associated with *Mentha rotundifolia* against the MCF7 KB and NIH/3T3 cell lines. Journal of Medicinal Food, 15: 955–958.
73	*Mentha viridis* L.	leaves	antibacterial	Agha M.H., Alnouree S., Maarouf M. (2011): Determination of the chemical main composition and anti bacterial effectiveness of the volatile oils in two in Syrian wide spread plants *Micromeria rubestris* L. *Mentha viridis* L (Lamiaceae). Planta Medica, 77: 1298–1298.
			antimicrobial and antioxidant	Mkaddem M., Bouajila J., Ennajar M., Lebrihi A., Mathieu F., Romdhane M. (2009): Chemical composition and antimicrobial and antioxidant activities of *Mentha* (*longifolia* L and *viridis*) essential oils. Journal of Food Science, 74: M358–M363.
74	*Micromeria biflora* (Buch.-Ham. ex D. Don.) Benth.	flowers and leaves	antibacterial	Kumar A., Gupta R., Mishra R.K., Shukla A.C., Dikshit A. (2012): Pharmaco-phylogenetic investigation of *Micromeria biflora* Benth and *Citrus reticulata* Blanco. National Academy Science Letters, 35: 253–257.
75	*Micromeria juliana* (L.) Bentham ex Reichb.	leaves	antibacterial	Sarac N., Ugur A. (2007): Antimicrobial activities and usage in folkloric medicine of some Lamiaceae species growing in Mugla, Turkey. EurAsian Journal of BioSciences, 4: 28–37.
			antimycobacterial activity	Askun T., Tekwu E.M., Satil F., Modanlioglu S., Aydeniz H. (2013): Preliminary antimycobacterial study on selected Turkish plants (Lamiaceae) against *Mycobacterium tuberculosis* and search for some phenolic constituents. BMC Complementary and Alternative Medicine, 13: 365.
76	*Micromeria rubestris* L.	leaves	antibacterial	Agha M.H., Alnouree S., Maarouf M. (2011): Determination of the chemical main composition and anti bacterial effectiveness of the volatile oils in two in Syrian wide spread plants *Micromeria rubestris* L, *Mentha viridis* L (Lamiaceae). Planta Medica, 77: 1298–1298.
77	*Monarda citriodora* Cerv. ex Lag.	leaves	antimicrobial antioxidant	Dorman H.J.D., Deans S.G. (2004): Chemical composition, antimicrobial and in vitro antioxidant properties of *Monarda citriodora* var *citriodora*, *Myristica fragrans*, *Origanum vulgare* ssp *hirtum*, *Pelargonium* sp and *Thymus zygis* oils. Journal of Essential Oil Research, 16: 145–150.
78	*Monarda menthifolia* Graham	leaves	anaesthetic, antiseptic, and diaphoretic	Brown D. (1995): Encyclopedia of Herbs & Their Uses. DK Publishing, London.
79	*Monarda pectinata* Nutt.	leaves	anodyne, antiseptic, febrifuge, stings, stomachic	Moerman D.E. (1998): Native American Ethnobotany. Timber Press, Portland.

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80	*Monarda punctata* L.	leaves	lipase inhibitor	Yamada K., Murata T., Kobayashi K., Miyase T., Yoshizaki F. (2010): A lipase inhibitor monoterpene and monoterpene glycosides from *Monarda punctate*. Phytochemistry, 71: 1884–1891.
81	*Mosla dianthera* (Buch.-Ham. ex Roxb.) Maxim.	shoots	antioxidant	Wu Q.F., Wang W., Dai X.Y., Wang Z.Y., Shen Z.H., Ying H.Z., Yu C.H. (2012): Chemical compositions and anti-influenza activities of essential oils from *Mosla dianthera*. Journal of Ethnopharmacology, 139: 668–671.
82	*Mosla scabra* (Thunb.)	leaves	antiviral	Wu Q.F., Yu C.H., Yan Y.L., Chen J., Zhang C.C., Wen X.X. (2010): Antiviral flavonoids from *Mosla scabra*. Fitoterapia, 81: 429–433.
83	*Nepeta crispa* Willd.	leaves	antibacterial and antifungal	Formisano C., Rigano D., Senatore F. (2011): Chemical constituents and biological activities of *Nepeta* species. Chemistry & Biodiversity, 8: 1783–1818.
84	*Nepeta meyeri* Benth.	leaves	antimicrobial	Joudi L., Bibalani G.H., Shadkami H. (2011): Exploration of medicinal species of Lamiaceae family in Ilkhji and Sharafaldin regions of East Azarbaijan in Iran. Current Research Journal of Biological Sciences, 3: 385–387.
			antioxidant and antimicrobial	Cigremis Y., Ulukanli Z., Ilcim A., Akgoz M. (2010): In vitro antioxidant and antimicrobial assays of acetone extracts from *Nepeta meyeri* Bentham. European Review for Medical and Pharmacological Sciences, 14: 661–668.
85	*Nepeta persica* Boiss.	leaves	anxiolytic	Joudi L., Bibalani G.H., Shadkami H. (2011): Exploration of medicinal species of Lamiaceae family in Ilkhji and Sharafaldin regions of East Azarbaijan in Iran. Current Research Journal of Biological Sciences, 3: 385–387.
			antibacterial	Formisano C., Rigano D., Senatore F. (2011): Chemical constituents and biological activities of *Nepeta* species. Chemistry & Biodiversity, 8: 1783–1818.
86	*Nepeta racemosa* L.	leaves	carminative- tonic-diaphoretic, refrigerant and slightly emmenagogue, and mildly timulating	Joudi L., Bibalani G.H., Shadkami H. (2011): Exploration of medicinal species of Lamiaceae family in Ilkhji and Sharafaldin Regions of East Azarbaijan in Iran. Current Research Journal of Biological Sciences, 3: 385–387.
87	*Ocimum campechianum* Mill. syn. *Ocimum micranthum* Willd.	leaves	antibacterial	Carović-Stanko K., Orlić S., Politeo O., Strikić F., Kolak I., Miloš M., Šatović Z. (2010): Composition and antibacterial activities of essential oils of seven *Ocimum* Taxa. Food Chemistry, 119: 196–201.
			antioxidant, antibacterial, and antifungal	Sacchetti G., Medici A., Maietti S., Radice N., Muzzoli M., Manfredini S., Braccioli E., Bruni R. (2004): Composition and functional properties of the essential oil of Amazonian basil, *Ocimum micranthum* Willd, Labiatae in comparison with commercial essential oils. Journal of Agricultural and Food Chemistry, 52: 3486–3491.
88	*Ocimum* × *citriodorum* Vis. syn. *O. africanum* Lour.	leaves	antibacterial	Carović-Stanko K., Orlić S., Politeo O., Strikić F., Kolak I., Miloš M., Šatović Z. (2010): Composition and antibacterial activities of essential oils of seven *Ocimum* taxa. Food Chemistry, 119: 196–201.

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No.	Species	Edible part	Medicinal properties due to biological activity	References
89	*Ocimum gratissimum* L.	leaves	antioxidant	Trakoontivakorn G., Tangkanakul P., Nakahara K. (2012): Changes of antioxidant capacity and phenolics in *Ocimum* herbs after various cooking methods. Jarq-Japan Agricultural Research Quarterly, 46: 347–353.
			antioxidant and cytoprotective	Chiu Y.W., Lo H.J., Huang H.Y., Chao P.Y., Hwang J.M., Huang P.Y., Huang S.J., Liu J.Y., Lai T.J. (2013): The antioxidant and cytoprotective activity of *Ocimum gratissimum* extracts against hydrogen peroxide-induced toxicity in human HepG2 cells. Journal of Food and Drug Analysis, 21: 253–260.
			antimicrobial and antioxidant	Joshi R.K. (2013): Chemical composition, in vitro antimicrobial and antioxidant activities of the essential oils of *Ocimum gratissimum*, *O. sanctum* and their major constituents. Indian Journal of Pharmaceutical Science, 75: 457–462.
			antibacterial and antifungal	Rao B.R.R., Kothari S.K., Rajput D.K., Patel R.P., Darokar M.P. (2011): Chemical and biological diversity in fourteen selections of four *Ocimum* species. Natural Product Communications, 6: 1705–1710.
90	*Ocimum kilimandscharicum* Baker ex Gürke	leaves	antibacterial	Carović-Stanko K., Orlić S., Politeo O., Strikić F., Kolak I., Miloš M., Šatović Z. (2010): Composition and antibacterial activities of essential oils of seven *Ocimum* taxa. Food Chemistry, 119: 196–201. Alzoreky N.S., Nakahara K. (2003): Antibacterial activity of extracts from some edible plants commonly consumed in Asia. International Journal of Food Microbiology, 80: 223–230.
			antibacterial and antifungal	Rao B.R.R., Kothari S.K., Rajput D.K., Patel R.P., Darokar M.P. (2011): Chemical and biological diversity in fourteen selections of four *Ocimum* species. Natural Product Communications, 6: 1705–1710.
91	*Origanum compactum* Benth.	leaves	antibacterial	Sfeir J., Lefrancois C., Baudoux D., Derbre S., Licznar P. (2013): *In vitro* antibacterial activity of essential oils against *Streptococcus pyogenes*. Evidence-Based Complementary and Alternative Medicine, Article ID 269161. doi: 101155/2013/269161
			antimalarial, antioxidant, and cytotoxic	El Babili F., Bouajila J., Souchard J.P., Bertrand C., Bellvert F., Fouraste I., Moulis C., Valentin A. (2011): Oregano chemical analysis and evaluation of its antimalarial antioxidant and cytotoxic activities. Journal of Food Science, 76: 512–518.
92	*Origanum dictamnus* L.	leaves	antioxidant	Lagouri V., Alexandri G. (2013): Antioxidant properties of greek *O. dictamnus* and *R. officinalis* methanol and aqueous extracts – HPLC determination of phenolic acids. International Journal of Food Properties, 16: 549–562.
			antibacterial	Alexopoulos A., Kimbaris A.C., Plessas S., Mantzourani I., Theodoridou I., Stavropoulou E., Polissiou M.G., Bezirtzoglou E. (2011): Antibacterial activities of essential oils from eight Greek aromatic plants against clinical isolates of *Staphylococcus aureus*. Anaerobe, 17: 399–402.
			cytotoxic	Chinou I., Liolios C., Moreau D., Roussakis C. (2007): Cytotoxic activity of *Origanum dictamnus*. Fitoterapia, 78: 342–344.

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No.	Species	Edible part	Medicinal properties due to biological activity	References
93	*Origanum glandulosum* Desf.	leaves	antimicrobial and antioxidant	Sari M., Biondi D.M., Kaabeche M., Mandalari G., D'Arrigo M., Bisignano G., Saija A., Daquino C., Ruberto G. (2006): Chemical composition, antimicrobial and antioxidant activities of the essential oil of several populations of Algerian *Origanum glandulosum* Desf. Flavour and Fragrance Journal, 21: 890–898.
94	*Origanum onites* L.	leaves	anti-spasmodic, antibacterial, and antifungal	Chishti S., Kaloo Z.A., Sultan P. (2013): Medicinal importance of genus *Origanum*: a review. Journal of Pharmacognosy. Phytotherapy Research, 5: 170–177.
95	*Origanum syriacum* L.	leaves	antiseptic	
			antioxidant, anti-inflammatory, and antinociceptive	Awaad A.S., El–Meligy R.M., Qenawy S.A., Atta A.H., Soliman G.A. (2011): Anti-inflammatory antinociceptive and antipyretic effects of some desert plants. Journal of Saudi Chemical Society, 15: 367–373.
			antibacterial	Nedorostova L., Kloucek P., Urbanova K., Kokoska L., Smid J., Urban J., Valterova I., Stolcova M. (2011): Antibacterial effect of essential oil vapours against different strains of *Staphylococcus aureus*, including MRSA. Flavour and Fragrance Journal, 26: 403–407.
96	*Perovskia atriplicifolia* Benth.	flowers	antimicrobial, mutagenic, and antimutagenic	Erdemgil F.Z., Ilhan S., Korkmaz F., Kaplan C., Mercangoz A., Arfan M., Ahmad S. (2007): Chemical composition and biological activity of the essential oil of *Perovskia atriplicifolia* from Pakistan. Pharmaceutical Biology, 45: 324–331.
97	*Phlomis bourgaei* Boiss.	leaves	antibacterial, antifungal, and antiviral	Ozcelik B., Orhan I., Kartal M., Konuklugil B. (2010): *In vitro* testing of antiviral, antibacterial, antifungal effects and cytotoxicity of selected turkish *Phlomis* species. Acta Alimentaria, 39: 119–125.
			antioxidant	Sarikurkcu C., Ozer M.S., Cakir A., Eskici M., Mete E. (2013): GC/MS evaluation and *in vitro* antioxidant activity of essential oil and solvent extracts of an endemic plant used as folk remedy in turkey *Phlomis bourgaei* Boiss. Evidence-Based Complementary and Alternative Medicine, Article ID 293080. doi: 101155/2013/293080
98	*Phlomis fruticosa* L.	leaves	antibacterial	Sarac N., Ugur A. (2007): Antimicrobial activities and usage in folkloric medicine of some Lamiaceae species growing in Mugla, Turkey. EurAsian Journal of BioSciences, 4: 28–37.
			analgesic, antifungal	Limem-Ben Amor I., Boubaker J., Ben Sgaier M., Skandrani I., Bhouri W., Neffati A., Kilani S., Bouhlel I., Ghedira K., Chekir-Ghedira L. (2009): Phytochemistry and biological activities of *Phlomis* species. Journal of Ethnopharmacology, 125: 183–202.
99	*Phlomis tuberosa* L.	roots and leaves	antimicrobial	Olennikov D.N., Dudareva L.V., Tankhaeva L.M. (2010): Chemical composition of essential oils from *Galeopsis bifida* and *Phlomoides tuberosa*. Chemistry of Natural Compounds, 46: 316–318.
100	*Phlomis purpurea* L.	flowers	anti-inflammatory	Algieri F., Zorrilla P., Rodriguez-Nogales A., Garrido-Mesa N., Banuelos O., Gonzalez-Tejero M.R., Casares-Porcel M., Molero-Mesa J., Zarzuelo A., Utrilla M.P. (2013): Intestinal anti-inflammatory activity of hydroalcoholic extracts of *Phlomis purpurea* L. and *Phlomis lychnitis* L. in the trinitrobenzenesulphonic acid model of rat colitis. Journal of Ethnopharmacology, 146: 750–759.

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No.	Species	Edible part	Medicinal properties due to biological activity	References
101	*Plectranthus ternifolius* Don.	shoots and leaves	anti-dysentery	Pegu R., Gogoi J., Tamuli A.K., Teron R. (2013): Ethnobotanical study of wild edible plants in Poba reserved forest Assam India multiple functions and implications for conservation. Research Journal of Agriculture and Forestry Sciences, 1: 1–10.
102	*Pogostemon benghalensis* Kuntze.	leaves	antimicrobial	Sharma S.M., Bhadange D.G. (2013): Antimicrobial potential of Lamiaceae members. International Journal of Pharmaceutical Sciences and Research, 3: 324–327.
103	*Salvia argentea* L.	basal leaves	antibacterial	Sarac N., Ugur A. (2007): Antimicrobial activities and usage in folkloric medicine of some Lamiaceae species growing in Mugla, Turkey. EurAsian Journal of BioSciences, 4: 28–37.
			anticholinesterase and antioxidant	Orhan I.E., Senol F.S., Ercetin T., Kahraman A., Celep F., Akaydin G., Sener B., Dogan M. (2013): Assessment of anticholinesterase and antioxidant properties of selected sage (*Salvia*) species with their total phenol and flavonoid contents. Industrial Crops and Products, 41: 21–30.
104	*Salvia castanea* Diels	stem and leaves	antioxidant	Xiang C., Li F., Zhang L.D., Li B.C., He J., Qin Y., Wan J.B., Wang Y.T., Li P. (2014): Determination of radical scavengers from *Salvia* plants by HPLC. Analytical Letters, 47: 1–13.
105	*Salvia clevelandii* (A. Gray.) Greene.	leaves	cytotoxic	Guerrero I.C., Andres L.S., Leon L.G., Machin R.P., Padron J.M., Luis J.G., Delgadillo J. (2006): Abietane diterpenoids from *Salvia pachyphylla* and *S. clevelandii* with cytotoxic activity against human cancer cell lines. Journal of Natural Products, 69: 1803–1805.
106	*Salvia columbariae* Benth.	seed and nutlets	cytotoxic	Esquivel B., Sanchez A.A., Vergara F., Matus W., Hernandez-Ortega S., Ramirez-Apan M.T. (2005): Abietane diterpenoids from the roots of some Mexican *Salvia* species (Labiatae) chemical diversity, phytogeographical significance and cytotoxic activity. Chemistry & Biodiversity, 2: 738–747.
107	*Salvia elegans* Vahl.	leaves	antihypertensive	Jimenez-Ferrer E., Badillo F.H., Gonzalez-Cortazar M., Tortoriello J., Herrera-Ruiz M. (2010): Antihypertensive activity of *Salvia elegans* Vahl. (Lamiaceae): ACE inhibition and angiotensin II antagonism. Journal of Ethnopharmacology, 130: 340–346.
			antidepressant	Herrera-Ruiz M., Garcia-Beltran Y., Mora S., Diaz-Veliz G., Viana G.S.B., Tortoriello J., Ramirez G. (2006): Antidepressant and anxiolytic effects of hydroalcoholic extract from *Salvia elegans*. Journal of Ethnopharmacology, 107: 53–58.
108	*Salvia glutinosa* L.	leaves	anticholinesterase and antioxidant	Orhan I.E., Senol F.S., Ercetin T., Kahraman A., Celep F., Akaydin G., Sener B., Dogan M. (2013): Assessment of anticholinesterase and antioxidant properties of selected sage (*Salvia*) species with their total phenol and flavonoid contents. Industrial Crops and Products, 41: 21–30.
			antimicrobial	Velickovic D.T., Randjelovic N.V., Ristic M.S., Smelcerovic A.A., Velickovic A.S. (2002): Chemical composition and antimicrobial action of the ethanol extracts of *Salvia pratensis* L.,, *Salvia glutinosa* L, and *Salvia aethiopis* L. Journal of the Serbian Chemical Society, 67: 639–646.

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No.	Species	Edible part	Medicinal properties due to biological activity	References
109	*Salvia lavandulifolia* Vahl.	flowered aerial part	antimicrobial	Rota C., Carraminana J.J., Burillo J., Herrera A. (2004): In vitro antimicrobial activity of essential oils from aromatic plants against selected foodborne pathogens. Journal of Food Protection, 67: 1252–1256.
			antioxidant and cytoprotective	Porres-Martinez M., Gonzalez-Burgos E., Accame M.E.C., Gomez-Serranillos M.P. (2013): Phytochemical composition. antioxidant and cytoprotective activities of essential oil of *Salvia lavandulifolia* Vahl. Food Research International, 54: 523–531.
110	*Salvia limbata* C.A. Meyer	leaves and seed	antioxidant and antiviral	Ogutcu H., Sokmen A., Sokmen M., Polissiou M., Serkedjieva J., Daferera D., Sahin F., Baris O., Gulluce M. (2008): Bioactivities of the various extracts and essential oils of *Salvia limbata* CAMey. and *Salvia sclarea* L. Turkish Journal of Biology, 32: 181–192.
111	*Salvia macrosiphon* Boiss.	seed	cytotoxic	Amirghofran Z., Zand F., Javidnia K., Miri R. (2010): The cytotoxic activity of various herbals against different tumor cells an in vitro study. Iranian Red Crescent Medical Journal, 12: 260–265.
112	*Salvia multicaulis* Vahl.	leaves	antioxidant	Firuzi O., Javidnia K., Gholami M., Soltani M., Miri R. (2010): Antioxidant activity and total phenolic content of 24 Lamiaceae species growing in Iran. Natural Product Communications, 5: 261–264.
			anticholinesterase and antioxidant	Orhan I.E., Senol F.S., Ercetin T., Kahraman A., Celep F., Akaydin G., Sener B., Dogan M. (2013): Assessment of anticholinesterase and antioxidant properties of selected sage (*Salvia*) species with their total phenol and flavonoid contents. Industrial Crops and Products, 41: 21–30.
			antibacterial and antifungal	Mojtaba T., Reza G.H., Borzo S., Shiva N., Esmaeil S. (2011): In vitro antibacterial and antifungal activity of *Salvia multicaulis*. Journal of Essential Oil Bearing Plants, 14: 255–259.
113	*Salvia pomifera* L.	leaves	antioxidant	Erdogan S.S., Karik U., Baser K.H.C. (2011): The determination of total phenolics and flavonoid contents and antioxidant activity of some sage populations of *Salvia fruticosa* Mill, *Salvia pomifera* Mill and *Salvia tomentosa* Mill in the Marmara region of Turkey. Planta Medica, 77: 1319–1319.
114	*Salvia pratensis* L.	aerial part	antimicrobial	Velickovic D.T., Randjelovic N.V., Ristic M.S., Smelcerovic A.A., Velickovic A.S. (2002): Chemical composition and antimicrobial action of the ethanol extracts of *Salvia pratensis* L., *Salvia glutinosa* L. and *Salvia aethiopis* L. Journal of the Serbian Chemical Society, 67: 639–646.
			antioxidant	Kucekova Z., Mlcek J., Humpolicek P., Rop O. (2013): Edible flowers - antioxidant activity and impact on cell viability. Central European Journal of Biology, 8: 1023–1031.
115	*Salvia reflexa* Hornem.	seed	antioxidant	Malencic D., Gasic O., Popovic M., Boza P. (2000): Screening for antioxidant properties of *Salvia reflexa* Hornem. Phytotherapy Research, 14: 546–548.
116	*Salvia tiliifolia* Vahl.	seed	antioxidant and acetylcholinesterase	Adewusi E.A., Moodley N., Steenkamp V. (2011): Antioxidant and acetylcholinesterase inhibitory activity of selected southern African medicinal plants. South African Journal of Botany, 77: 638–644.

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No.	Species	Edible part	Medicinal properties due to biological activity	References
117	*Salvia verbenaca* L.	leaves and flowers	antibacterial	Sarac N., Ugur A. (2007): Antimicrobial activities and usage in folkloric medicine of some Lamiaceae species growing in Mugla, Turkey. EurAsian Journal of BioSciences, 4: 28–37.
118	*Salvia viridis* L.	leaves and seed	antioxidant	Erdemoglu N., Turan N.N., Cakōc I., Sener B., Aydōn A. (2006): Antioxidant activities of some Lamiaceae plant extracts. Phytotherapy Research, 20: 9–13.
			antibacterial and antifungal	Digrak M., Alma M.H., Ilcim A. (2011): Antibacterial and antifungal activities of Turkish medicinal plants. Pharmaceutical Biology, 39: 346–350.
119	*Satureja intricata* Lange	flowered aerial part	antioxidant	Jordan M.J., Sanchez-Gomez P., Jimenez J.F., Quilez M., Sotomayor J.A. (2010): Chemical composition and antiradical activity of the essential oil from *Satureja intricata*, *S. obovata* and their hybrid *Satureja* × *delpozoi*. Natural Product Communications, 5: 629–634.
120	*Satureja obovata* Lag,	flowered aerial part	antioxidant	
121	*Satureja spicigera* (K. Koch.) Boiss.	leaves	antimicrobial	Sariboga B., Sariboga N. (2011): Antimicrobial activity of various extracts of *Satureja spicigera*. Asian Journal of Chemistry. 23: 1867–1868.
			antioxidant	Eminagaoglu O., Tepe B., Yumrutas O., Akpulat H.A., Daferera D., Polissiou M., Sokmen A. (2007): The *in vitro* antioxidative properties of the essential oils and methanol extracts of *Satureja spicigera* (K. Koch.) Boiss. and *Satureja cuneifolia* Ten. Food Chemistry, 100: 339–343.
122	*Satureja subspicata* Bartl. ex Vis,	aerial part	antioxidant and antimicrobial	Cavar S., Maksimovic M., Solic M.E., Jerkovic-Mujkic A., Besta R. (2008): Chemical composition and antioxidant and antimicrobial activity of two *Satureja* essential oils. Food Chemistry, 111: 648–653.
123	*Satureja thymbra* L.	leaves	anticholinesterase and antioxidant	Ozturk M. (2012): Anticholinesterase and antioxidant activities of Savoury (*Satureja thymbra* L.) with identified major terpenes of the essential oil. Food Chemistry, 134: 48–54.
			antimicrobial and antioxidant	Giweli A., Dzamic A.M., Sokovic M., Ristic M.S., Marin P.D. (2012): Antimicrobial and antioxidant activities of essential oils of *Satureja thymbra* growing wild in Libya. Molecules, 17: 4836–4850.
			antimicrobial	Markovic T., Chatzopoulou P., Siljegovic J., Nikolic M., Glamoclija J., Ciric A., Sokovic M. (2011): Chemical analysis and antimicrobial activities of the essential oils of *Satureja thymbra* L. and *Thymbra spicata* L. and their main components. Archives of Biological Sciences, 63: 457–464.
124	*Scutellaria violacea* Heyne ex. Benth.	leaves	cytotoxic and antioxidant	Salini S., Chubicka T., Sasidharan N., Sindhu E.R., Babu T.D. (2013): Cytotoxic and antioxidant properties of selected *Scutellaria* species from the Western Ghats of Peninsular India. Pharmaceutical Biology, 51: 152–159.
125	*Sideritis hyssopifolia* L.	flowered aerial part	antioxidant	Huerga V., Sahagun A., Diez R., Diez M.J., Villaescusa L., Martin M.T., Zaragoza F., Sierra M. (2011): Determination of the antioxidant activity of *Sideritis Hyssopifolia*. Basic & Clinical Pharmacology, 109: 49–49.

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No.	Species	Edible part	Medicinal properties due to biological activity	References
126	*Sideritis leptoclada* O. Schwarz & P.H.	leaves	antimicrobial	Erdogan S.S., Karik U., Baser K.H.C. (2011): The determination of total phenolics and flavonoid contents and antioxidant activity of some sage populations of *Salvia fruticosa* Mill, *Salvia pomifera* Mill. and *Salvia tomentosa* Mill. in the Marmara region of Turkey. Planta Medica, 77: 1319–1319.
			antioxidant	Ayar-Kayali H., Urek R.O., Nakiboglu M., Tarhan L. (2009): Antioxidant activities of endemic *Sideritis leptoclada* and *Mentha dumetorum* aqueous extracts used in Turkey folk medicine. Journal of Food Processing and Preservation 33: 285–295.
127	*Sideritis tragoriganum* Lag.	flowered aerial parts	anti-inflammatory	Bas E., Recio M.C., Giner R.M., Manez S., Cerda-Nicolas M., Rios J.L. (2006): Anti-inflammatory activity of 5-O-demethylnobiletin a polymethoxyflavone isolated from *Sideritis tragoriganum*. Planta Medica, 72: 136–142.
128	*Stachys affinis* Bunge	leaves and tubers	antimicrobial, antioxidant, and antifungal	Conforti F., Menichini F., Formisano C., Rigano D., Senatore F., Arnold N.A., Piozzi F. (2009): Comparative chemical composition free radical-scavenging and cytotoxic properties of essential oils of six *Stachys* species from different regions of the Mediterranean Area. Food Chemistry, 116: 898–905.
129	*Stachys albiflora* N.E.Br.	leaves and flowering tops	antibacterial	Sarac N., Ugur A. (2007): Antimicrobial activities and usage in folkloric medicine of some Lamiaceae species growing in Mugla, Turkey. EurAsian Journal of BioSciences, 4: 28–37.
			antimicrobial, antioxidant, and antifungal	Conforti F., Menichini F., Formisano C., Rigano D., Senatore F., Arnold N.A., Piozzi F. (2009): Comparative chemical composition free radical-scavenging and cytotoxic properties of essential oils of six *Stachys* species from different regions of the Mediterranean Area. Food Chemistry, 116: 898–905.
130	*Stachys alpine* L.	leaves and flowering tops	antimicrobial, antioxidant, and antifungal	
			antiinflammatory effect of *Stachys* species	Háznagy-Radnai E., Balogh Á., Czigle S., Máthé I., Hohmann J., Blazsó G. (2012): Antiinflammatory activities of Hungarian *Stachys* species and their iridoids. Phytotherapy Research, 26: 505–509.
131	*Stachys annua* L.	leaves and flowering tops	antimicrobial, antioxidant, and antifungal	Conforti F., Menichini F., Formisano C., Rigano D., Senatore F., Arnold N.A., Piozzi F. (2009): Comparative chemical composition free radical-scavenging and cytotoxic properties of essential oils of six *Stachys* species from different regions ofthe Mediterranean Area. Food Chemistry, 116: 898–905.
			antiinflammatory	Háznagy-Radnai E., Balogh Á., Czigle S., Máthé I., Hohmann J., Blazsó G. (2012): Antiinflammatory activities of Hungarian *Stachys* species and their iridoids. Phytotherapy Research, 26: 505–509.
			antibacterial and antitumor	Yildirim A.B., Karakas F.P., Turker A.U. (2013): In vitro antibacterial and antitumor activities of some medicinal plant extracts growing in Turkey. Asian Pacific Journal of Tropical Medicine, 6: 616–624.
132	*Stachys beckeana* Dörfler & Hayek	leaves and flowering tops	antimicrobial, antioxidant, and antifungal	Conforti F., Menichini F., Formisano C., Rigano D., Senatore F., Arnold N.A., Piozzi F. (2009): Comparative chemical composition free radical-scavenging and cytotoxic properties of essential oils of six *Stachys* species from different regions of the Mediterranean Area. Food Chemistry, 116: 898–905.

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133	*Stachys chrisantha* Boiss. & Heldr.	leaves and flowering tops	antimicrobial, antioxidant, and antifungal	Conforti F., Menichini F., Formisano C., Rigano D., Senatore F., Arnold N.A., Piozzi F. (2009): Comparative chemical composition free radical-scavenging and cytotoxic properties of essential oils of six *Stachys* species from different regions of the Mediterranean Area. Food Chemistry, 116: 898–905.
134	*Stachys cretica* L.	leaves and flowering tops	antibacterial	Sarac N., Ugur A. (2007): Antimicrobial activities and usage in folkloric medicine of some Lamiaceae species growing in Mugla, Turkey. EurAsian Journal of BioSciences, 4: 28–37.
			antimicrobial, antioxidant, antifungal, antiradical, and cytotoxic	Conforti F., Menichini F., Formisano C., Rigano D., Senatore F., Arnold N.A., Piozzi F. (2009): Comparative chemical composition free radical-scavenging and cytotoxic properties of essential oils of six *Stachys* species from different regions of the Mediterranean Area. Food Chemistry, 116: 898–905.
135	*Stachys germanica* L.	leaves and flowering tops	antimicrobial, antioxidant, antifungal, antiproliferative, cytotoxic	
			antiinflammatory	Háznagy-Radnai E., Balogh Á., Czigle S., Máthé I., Hohmann J., Blazsó G. (2012): Antiinflammatory activities of Hungarian *Stachys* species and their iridoids. Phytotherapy Research, 26: 505–509.
136	*Stachys hydrophila* Boiss.	leaves and flowering tops	antimicrobial, antioxidant, antifungal, antiradical, and cytotoxic	Conforti F., Menichini F., Formisano C., Rigano D., Senatore F., Arnold N.A., Piozzi F. (2009): Comparative chemical composition free radical-scavenging and cytotoxic properties of essential oils of six *Stachys* species from different regions of the Mediterranean Area. Food Chemistry, 116: 898–905.
137	*Stachys lavandifolia* Vahl.	leaves and flowering tops	anxiolytic	Joudi L., Bibalani G.H., Shadkami H. (2011): Exploration of medicinal species of Lamiaceae family in Ilkhji and Sharafaldin regions of East Azarbaijan in Iran. Current Research Journal of Biological Sciences, 3: 385–387.
			antimicrobial, antioxidant, and antifungal	Conforti F., Menichini F., Formisano C., Rigano D., Senatore F., Arnold N.A., Piozzi F. (2009): Comparative chemical composition free radical-scavenging and cytotoxic properties of essential oils of six *Stachys* species from different regions of the Mediterranean Area. Food Chemistry, 116: 898–905.
138	*Stachys leptoclada* Briq.	leaves and flowering tops	antibacterial	Sarac N., Ugur A. (2007): Antimicrobial activities and usage in folkloric medicine of some Lamiaceae species growing in Mugla, Turkey. EurAsian Journal of BioSciences, 4: 28–37.
			antimicrobial, antioxidant, and antifungal	Conforti F., Menichini F., Formisano C., Rigano D., Senatore F., Arnold N.A., Piozzi F. (2009): Comparative chemical composition free radical-scavenging and cytotoxic properties of essential oils of six *Stachys* species from different regions of the Mediterranean Area. Food Chemistry, 116: 898–905.
139	*Stachys nivea* Labill.	leaves and flowering tops	antimicrobial, antioxidant, antifungal, and cytotoxic	Conforti F., Menichini F., Formisano C., Rigano D., Senatore F., Arnold N.A., Piozzi F. (2009): Comparative chemical composition free radical-scavenging and cytotoxic properties of essential oils of six *Stachys* species from different regions of the Mediterranean Area. Food Chemistry, 116: 898–905.

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No.	Species	Edible part	Medicinal properties due to biological activity	References
140	*Stachys palustris* L.	leaves, tubers, and seed	antimicrobial, antioxidant, antifungal, antiradical, and cytotoxic	Conforti F., Menichini F., Formisano C., Rigano D., Senatore F., Arnold N.A., Piozzi F. (2009): Comparative chemical composition free radical-scavenging and cytotoxic properties of essential oils of six *Stachys* species from different regions of the Mediterranean Area. Food Chemistry, 116: 898–905.
			anti-inflammatory	Háznagy-Radnai E., Balogh Á., Czigle S., Máthé I., Hohmann J., Blazsó G. (2012): Antiinflammatory activities of Hungarian *Stachys* species and their iridoids. Phytotherapy Research, 26: 505–509.
141	*Stachys persica* Gmel.	leaves and flowering tops	anti-inflammatory	Joudi L., Bibalani G.H., Shadkami H. (2011): Exploration of medicinal species of Lamiaceae family in Ilkhji and Sharafaldin Regions of East Azarbaijan in Iran. Current Research Journal of Biological Sciences, 3: 385–387.
			antimicrobial, antioxidant, and antifungal	Conforti F., Menichini F., Formisano C., Rigano D., Senatore F., Arnold N.A., Piozzi F. (2009): Comparative chemical composition free radical-scavenging and cytotoxic properties of essential oils of six *Stachys* species from different regions of the Mediterranean area. Food Chemistry, 116: 898–905.
142	*Stachys plumosa* L.	leaves and flowering tops	antimicrobial, antioxidant, and antifungal	
143	*Stachys pseudopinardii* R. Bhattacharjee & Hub.-Mor.	leaves and flowering tops	antimicrobial	Dulger G., Aki C. (2009): Antimicrobial activity of the leaves of endemic *Stachys pseudopinardii* in Turkey. Tropical Journal of Pharmaceutical Research, 8: 371–375.
144	*Stachys recta* L.	leaves and flowering tops	antimicrobial, antioxidant, and antifungal	Conforti F., Menichini F., Formisano C., Rigano D., Senatore F., Arnold N.A., Piozzi F. (2009): Comparative chemical composition free radical-scavenging and cytotoxic properties of essential oils of six *Stachys* species from different regions of the Mediterranean area. Food Chemistry, 116: 898–905.
			antiinflammatory	Háznagy-Radnai E., Balogh Á., Czigle S., Máthé I., Hohmann J., Blazsó G. (2012): Antiinflammatory activities of Hungarian *Stachys* species and their iridoids. Phytotherapy Research, 26: 505–509.
145	*Stachys scardica* Griseb.	leaves and flowering tops	antimicrobial, antioxidant, and antifungal	Conforti F., Menichini F., Formisano C., Rigano D., Senatore F., Arnold N.A., Piozzi F. (2009): Comparative chemical composition free radical-scavenging and cytotoxic properties of essential oils of six *Stachys* species from different regions of the Mediterranean Area. Food Chemistry, 116: 898–905.
146	*Stachys spinosa* L.	leaves and flowering tops	antimicrobial, antioxidant,antifungal, and cytotoxic	
147	*Stachys subaphylla* Rech. F.	leaves and flowering tops	antimicrobial, antioxidant, and antifungal	
			citotoxic	Khanavi M., Manayi A., Lotfi M., Abbasi R., Majdzadeh M., Ostad S.N. (2012): Investigation of citotoxic activity in four *Stachys* species from Iran. Iranian Journal of Pharmaceutical Research, 11: 589–593.
148	*Stachys sylvatica* L.	leaves and flowering tops	antimicrobial, antioxidant, and antifungal	Conforti F., Menichini F., Formisano C., Rigano D., Senatore F., Arnold N.A., Piozzi F. (2009): Comparative chemical composition free radical-scavenging and cytotoxic properties of essential oils of six *Stachys* species from different regions of the Mediterranean Area. Food Chemistry, 116: 898–905.

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149	*Stachys trinervis* Aitch. and Hemsl.	leaves and flowering tops	antimicrobial, antioxidant, and antifungal	Conforti F., Menichini F., Formisano C., Rigano D., Senatore F., Arnold N.A., Piozzi F. (2009): Comparative chemical composition free radical-scavenging and cytotoxic properties of essential oils of six *Stachys* species from different regions of the Mediterranean Area. Food Chemistry, 116: 898–905.
			citotoxic	Khanavi M., Manayi A., Lotfi M., Abbasi R., Majdzadeh M., Ostad S.N. (2012): Investigation of citotoxic activity in four *Stachys* species from Iran. Iranian Journal of Pharmaceutical Research, 11: 589–593.
150	*Stachys turcomanica* Trautv.	leaves and flowering tops	antioxidant	Joudi L., Bibalani G.H., Shadkami H. (2011): Exploration of medicinal species of Lamiaceae family in Ilkhji and Sharafaldin regions of East Azarbaijan in Iran. Current Research Journal of Biological Sciences, 3: 385–387.
			antimicrobial, antioxidant, and antifungal	Conforti F., Menichini F., Formisano C., Rigano D., Senatore F., Arnold N.A., Piozzi F. (2009): Comparative chemical composition free radical-scavenging and cytotoxic properties of essential oils of six *Stachys* species from different regions of the Mediterranean Area. Food Chemistry, 116: 898–905.
			antiinflammatory	Háznagy-Radnai E., Balogh Á., Czigle S., Máthé I., Hohmann J., Blazsó G. (2012): Antiinflammatory activities of Hungarian *Stachys* species and their iridoids. Phytotherapy Research, 26: 505–509.
			citotoxic	Khanavi M., Manayi A., Lotfi M., Abbasi R., Majdzadeh M., Ostad S.N. (2012): Investigation of citotoxic activity in four *Stachys* species from Iran. Iranian Journal of Pharmaceutical Research, 11: 589–593.
151	*Stachys virdata* L.	leaves and flowering tops	antioxidant	Joudi L., Bibalani G.H., Shadkami H. (2011): Exploration of medicinal species of Lamiaceae family in Ilkhji and Sharafaldin regions of East Azarbaijan in Iran. Current Research Journal of Biological Sciences, 3: 385–387.
			antimicrobial, antioxidant, and antifungal	Conforti F., Menichini F., Formisano C., Rigano D., Senatore F., Arnold N.A., Piozzi F. (2009): Comparative chemical composition free radical-scavenging and cytotoxic properties of essential oils of six *Stachys* species from different regions of the Mediterranean Area. Food Chemistry, 116: 898–905.
			antiinflammatory effect of *Stachys* species	Háznagy-Radnai E., Balogh Á., Czigle S., Máthé I., Hohmann J., Blazsó G. (2012): Antiinflammatory activities of Hungarian *Stachys* species and their iridoids. Phytotherapy Research, 26: 505–509.
152	*Teucrium divaricatum* Heldr.	flowered aerial part	antibacterial	Sarac N., Ugur A. (2007): Antimicrobial activities and usage in folkloric medicine of some Lamiaceae species growing in Mugla, Turkey. EurAsian Journal of BioSciences, 4: 28–37.

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153	*Teucrium marum* L.	flowered aerial part	antibacterial	Djabou N., Lorenzi V., Guinoiseau E., Andreani S., Giuliani M.C., Desjobert J.M., Bolla J.M., Costa J., Berti L., Luciani A. (2013): Phytochemical composition of *Corsican teucrium* essential oils and antibacterial activity against foodborne or toxi-infectious pathogens. Food Control, 30: 354–363.
			antimicrobial and antioxidant	Ricci D., Fraternale D., Giamperi L., Bucchini A., Epifano F., Burini G., Curini M. (2005): Chemical composition, antimicrobial and antioxidant activity of the essential oil of *Teucrium marum* (Lamiaceae). Journal of Ethnopharmacology, 98: 195–200.
154	*Thymbra capitata* (L.) Cav.	flowered aerial part	antioxidant	Blanco Salas J., Ruiz Tellez T., Perez Alonso M.J., Vazquez Pardo F.M., Cases Capdevila M.A., Gervasini Rodriguez C. (2010): Chemical composition and antioxidant activity of the essential oil of *Thymbra capitata* (L.) Cav. in Spain. Acta Bot Gallica, 157: 55–63.
			anti-candida	Palmeira-de-Oliveira A., Gaspar C., Palmeira-de-Oliveira R., Silva-Dias A., Salgueiro L., Cavaleiro C., Pina-Vaz C., Martinez-de-Oliveira J., Queiroz J.A., Rodrigues A.G. (2012): The anti-*Candida* activity of *Thymbra capitata* essential oil: Effect upon pre-formed biofilm. Journal of Ethnopharmacology, 140: 379–383.
155	*Thymus baeticus* Boiss. ex Laciata	flowered aerial part	antimicrobial	Cruz T., Cabo M.M., Castillo M.J., Jimenez J., Ruiz Ramos-Cormenzana A. (1993): Chemical-composition and antimicrobial activity of the essential oils of different samples of *Thymus baeticus* Boiss. Phytotherapy Research, 7: 92–94.
			spasmolytic	Cruz T., Jimenez J., Zarzuelo A., Cabo M.M. (1989): The spasmolytic activity of the essential oil of *Thymus baeticus* Boiss. in rats. Phytotherapy Research, 3: 106–108.
156	*Thymus capitatus* (L.) Hoffmanns et Link syn. *Coridothymus capitatus* L.	leaves	antibacterial	Ballester-Costa C., Sendra E., Fernandez-Lopez J., Perez-Alvarez J.A., Viuda-Martos M. (2013): Chemical composition and in vitro antibacterial properties of essential oils of four *Thymus* species from organic growth. Industrial Crops and Products, 50: 304–311.
			antioxidant and antihypertensive	Yvon Y., Raoelison E.G., Razafindrazaka R., Randriantsoa A., Romdhane M., Chabir N., Mkaddem M.G., Bouajila J. (2012): Relation between chemical composition or antioxidant activity and antihypertensive activity for six essential oils. Journal of Food Science, 77: H184–H191.
157	*Thymus kotschyanus* Boiss.	flowered aerial part	cardiotonic, hypotensive, antibacterial	Joudi L., Bibalani G.H., Shadkami H. (2011): Exploration of medicinal species of Lamiaceae family in Ilkhji and Sharafaldin regions of East Azarbaijan in Iran. Current Research Journal of Biological Sciences, 3: 385–387.
			antioxidant and antibacterial	Aliakbarlu J., Shameli F. (2013): In vitro antioxidant and antibacterial properties and total phenolic contents of essential oils from *Thymus vulgaris*, *T. kotschyanus*, *Ziziphora tenuior* and *Z. clinopodioides*. Turkish Journal of Biochemistry, 38: 425–431.
158	*Thymus hyemalis* Lange	flowered aerial part	antioxidant and antimicrobial	Tepe B., Sarikurkcu C., Berk S., Alim A., Akpulat H.A. (2011): Chemical composition, radical scavenging and antimicrobial activity of the essential oils of *Thymus boveii* and *Thymus hyemalis*. Records of Natural Products, 5: 208–220.

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No.	Species	Edible part	Medicinal properties due to biological activity	References
159	*Thymus linearis* Benth.	whole plant	antibacterial, antioxidant, antimalarial, and antiproliferative	Hussain A.I., Anwar F., Chatha S.A.S., Latif S., Sherazi S.T.H., Ahmad A., Worthington J., Sarker S.D. (2013): Chemical composition and bioactivity studies of the essential oils from two *Thymus* species from the Pakistani flora. LWT-Food Science and Technology, 50: 185–192.
160	*Thymus mastichina* (L.) L.	leaves	antibacterial	Ballester-Costa C., Sendra E., Fernandez-Lopez J., Perez-Alvarez J.A., Viuda-Martos M. (2013): Chemical composition and in vitro antibacterial properties of essential oils of four *Thymus* species from organic growth. Industrial Crops and Products, 50: 304–311.
			fungicide	Leal F., Coelho A.C., Soriano T., Alves C., Matos M. (2013): Fungicide, activity of *Thymus mastichina* and *Mentha rotundifolia* in plants in vitro. Journal of Medicinal Food, 16: 273–273.
161	*Thymus moroderi* Pau ex Martínez	aerial part	antibacterial and antioxidant	Ruiz-Navajas Y., Viuda-Martos M., Sendra E., Perez-Alvarez J.A., Fernandez-Lopez J. (2013a): In vitro antibacterial and antioxidant properties of chitosan edible films incorporated with *Thymus moroderi* or *Thymus piperella* essential oils. Food Control, 30: 386–392.
			antioxidant and antifungal	Ruiz-Navajas Y., Viuda-Martos M., Sendra E., Perez-Alvarez J.A., Fernandez-Lopez J. (2013b): *In vitro* antioxidant and antifungal properties of essential oils obtained from aromatic herbs endemic to the Southeast of Spain. Journal of Food Protection, 76: 1218–1225.
162	*Thymus orospedanus* Villar	flowered aerial part	hypotensive	Jimenez J., Zarzuelo A., Crespo M.E. (1988) Hypotensive activity of *Thymus orospedanus* alcoholic extract. Phytotherapy Research, 2: 152–153.
163	*Thymus pulegioides L.*	aerial part	antioxidant	Fernandes A.S.F., Barros L., Carvalho A.M., Ferreira I.C.F.R. (2010): Lipophilic and hydrophilic antioxidants lipid peroxidation inhibition and radical scavenging activity of two Lamiaceae food plants. European Journal of Lipid Science and Technology, 112: 1115–1121.
			antibacterial	Pavel M., Ristic M., Stevic T. (2010): Essential oils of *Thymus pulegioides* and *Thymus glabrescens* from Romania chemical composition and antimicrobial activity. Journal of the Serbian Chemical Society, 75: 27–34.
			antifungal	Pinto E., Pina-Vaz C., Salgueiro L., Goncalves M.J., Costa-de-Oliveira S., Cavaleiro C., Palmeira A., Rodrigues A., Martinez-De-Oliveira J. (2006): Antifungal activity of the essential oil of *Thymus pulegioides* on *Candida*, *Aspergillus* and dermatophyte species. Journal of Medical Microbiology, 55: 1367–1373.
164	*Thymus piperella* L.	aerial part	antibacterial and antioxidant	Ruiz-Navajas Y., Viuda-Martos M., Sendra E., Perez-Alvarez J.A., Fernandez-Lopez J. (2013a): In vitro antibacterial and antioxidant properties of chitosan edible films incorporated with *Thymus moroderi* or *Thymus piperella* essential oils. Food Control, 30: 386–392.
			antioxidant and antifungal	Ruiz-Navajas Y., Viuda-Martos M., Sendra E., Perez-Alvarez J.A., Fernandez-Lopez J. (2013b): In vitro antioxidant and antifungal properties of essential oils obtained from aromatic herbs endemic to the Southeast of Spain. Journal of Food Protection, 76: 1218–1225.

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165	*Thymus praecox* Opiz	flowered aerial part	acetylcholinesterase inhibitory and antioxidant	Orhan I., Senol F.S., Gulpinar A.R., Kartal M., Sekeroglu N., Deveci M., Kan Y., Sener B. (2009): Acetylcholinesterase inhibitory and antioxidant properties of *Cyclotrichium niveum*, *Thymus praecox* subsp. *caucasicus* var. *caucasicus*, *Echinacea purpurea* and *E. pallida*. Food and Chemical Toxicology, 47: 1304–1310.
166	*Thymus pulegioides* L.	flowered aerial part	antimicrobial	Pavel M., Ristic M., Stevic T. (2010): Essential oils of *Thymus pulegioides* and *Thymus glabrescens* from Romania chemical composition and antimicrobial activity. Journal of the Serbian Chemical Society, 75: 27–34.
			antioxidant	Dandlen S.A., Lima A.S., Mendes M.D., Miguel M.G., Faleiro M.L., Sousa M.J., Pedro L.G., Barroso J.G., Figueiredo A.C. (2010): Antioxidant activity of six Portuguese thyme species essential oils. Flavour and Fragrance Journal, 25: 150–155.
167	*Thymus serpylloides* Bory	flowered aerial part	antibacterial	Crespo M.E., Jimenez J., Gomis E., Navarro C. (1990): Antibacterial activity of the essential oil of *Thymus-Serpylloides* subspecies *gadorensis*. Microbios, 61: 248–249.
168	*Thymus zygis* Loefl. ex L.	leaves	antimicrobial, antioxidant	Dorman H.J.D., Deans S.G. (2004): Chemical composition, antimicrobial and in vitro antioxidant properties of *Monarda citriodora* var. *citriodora*, *Myristica fragrans*, *Origanum vulgare* ssp. *hirtum*, *Pelargonium* sp. and *Thymus zygis* oils. Journal of Essential Oil Research, 16: 145–150.
			antibacterial	Aliakbarlu J., Shameli F. (2013): In vitro antioxidant and antibacterial properties and total phenolic contents of essential oils from *Thymus vulgaris*, *T. kotschyanus*, *Ziziphora tenuior* and *Z. clinopodioides*. Turkish Journal of Biochemistry, 38: 425–431.
			antioxidant	Dandlen S.A., Lima A.S., Mendes M.D., Miguel M.G., Faleiro M.L., Sousa M.J., Pedro L.G., Barroso J.G., Figueiredo A.C. (2010): Antioxidant activity of six Portuguese thyme species essential oils. Flavour and Fragrance Journal, 25: 150–155.
169	*Ziziphora capitata* L.	aerial parts	antibacterial	Aghajani Z., Assadian F., Masoudi S., Chalabian F., Esmaeili A., Tabatabaei-Anaraki M., Rustaiyan A. (2008): Chemical composition and in vitro antibacterial activities of the oil of *Ziziphora clinopodioides* and *Z. capitata* subsp *capitata* from Iran. Chemistry of Natural Compounds, 44: 387–389.
170	*Ziziphora hispanica* L.	flowered aerial part	antibacterial	Bekhechi C., Bekkara F.A., Abdelouahid D.E., Liu K., Casanova J., Tomi F. (2007): Composition and antibacterial activity of the essential oil of *Ziziphora hispanica* (L.) from Algeria. Journal of essential oil-bearing plants, 10: 318–323.