

London, 12 November 2009  
Doc. Ref.: EMA/HMPC/331645/2008

**This document was valid from 12 November 2009 until September 2016. It is now superseded by a [new version](#) adopted by the HMPC on 20 September 2016 and published on the EMA website.**

**LIST OF REFERENCES SUPPORTING THE ASSESSMENT REPORT ON:**

**Salviae folium and Salviae aetheroleum**  
***Salvia officinalis* L., folium and *Salvia officinalis* L., aetheroleum**  
**(sage leaf and sage oil)**

*The EMEA acknowledges that copies of the underlying works used to produce this monograph were provided for research only with exclusion of any commercial purpose.*

Akhondzadeh S, Noroozian M, Mohammadi M, Ohadinia S, Jamshidi AH, Khani M. *Salvia officinalis* extract in the treatment of patients with mild to moderate Alzheimer's disease: a double blind, randomized and placebo-controlled trial. *J Clin Pharm Ther* 2003, 28: 53-59

Barnes J, Anderson LA, Phillipson DJ. Sage. Herbal Medicines. 2nd ed. The Pharmaceutical Press, London 2002, 408-411

Barnes J, Anderson LA, Phillipson DJ. Sage. Herbal Medicines. 3rd ed. The Pharmaceutical Press, London 2007, 512-514

Bisset NG, Wichtl M. *Salviae officinalis* folium. Herbal Drugs and Phytopharmaceuticals. A Handbook for Practice on a Scientific Basis With Reference to German Commission E Monographs. 2nd ed. Medpharm, Stuttgart 2001, 440-443

Blumenthal M, Goldberg A, Brinckmann J. Herbal Medicine Expanded Commission E Monographs. American Botanical Council, Austin 2000, 330-334

Bradley P. Sage Leaf. British Herbal Compendium, a handbook of scientific information on widely used plant drugs. Companion to the British Herbal Pharmacopoeia. Volume 2, Bournemouth 2006, 339-344

British Herbal Medicine Association, Sage Leaf. British Herbal Pharmacopoeia. 4th ed. British Herbal Medicine Association, Bournemouth 1996, 164-165

Bruneton J. Toxic plants Dangerous to Humans and Animals. Lavoisier, Paris 1999, 324

Chang SS, Ostric-Imatijasevic B, Hsieh OAL, Huangz CL. Natural Antioxidants from Rosemary and Sage. *J of Food Science* 1977, 42(4): 1102-1106

Croteau R, Felton M, Karp F, Kjonaas R. Relationship of Camphor Biosynthesis to Leaf Development in Sage (*Salvia officinalis*). *Plant Physiol* 1981, 67: 820-824

Dapkevicius A, Venskutonis R, van Beek TA, Linssen JPH. Antioxidant Activity of Extracts Obtained by Different Isolation Procedures from some Aromatic Herbs Grown in Lithuania. *J Sci Food Agric* 1998, 77: 140-146

Detting A, Grass H, Schuff A, Skopp G, Strohbeck-Kuehner P, Haffner HT. Absinthe: Attention Performance and Mood under the Influence of Thujone. *J Stud Alcohol* 2004, 65: 573-581

EFSA. Camphor in flavourings and other food ingredients with flavouring properties. *The EFSA Journal* 2008, 729: 1-15

EFSA. Use of rosemary extracts as a food additive. *The EFSA Journal* 2008, 721: 1-29

EFSA. Public Hearing. Safety Assessment of Botanicals and Botanicals Preparations Intended for Use as Food supplements

Available at: [http://www.efsa.europa.eu/EFSA/efsa\\_locale-1178620753812\\_1178669754855.htm](http://www.efsa.europa.eu/EFSA/efsa_locale-1178620753812_1178669754855.htm)

Accessed: 04/06/2008

Ergänzungsbuch zum Deutschen Arzneibuch (Erg. B. 6). Stuttgart 1953

El-Desouki Hala M, Al-Omar, Mouhamed A. b-Sitosterol. Trade Science Inc. Biochemistry Department, Faculty of Science, Ain Shams University, Egypt 2007

European Pharmacopoeia 2008

Available at: [http://online6.edqm.eu/ep601/#doc\\_1\\_of\\_32](http://online6.edqm.eu/ep601/#doc_1_of_32)

Accessed: 04/06/2008

European Scientific Cooperative on Phytotherapy. ESCOP Monographs, The Scientific Foundation for Herbal Medicinal Products. 2nd ed. Thieme, Stuttgart 2004, 452-455

Fleming T. PDR for Herbal Medicines. 2nd ed. Medical Economics, Montvale 2000, 656

Funk C, Croteau R. Induction and Characterization of a Cytochrome P-450-Dependent Camphor Hydroxylase in Tissue Cultures of Common Sage (*Salvia officinalis*). *Plant Physiol* 1993, 101: 1231-1237

Futrell JM, Rietschel RL. Spice allergy evaluated by results of patch tests. Department of Dermatology. Ochsner Clinic, New Orleans, Louisiana 1993, 70121

Gomes-Carneiro MR, Felzenszwalb I, Paumgarten FJR. Mutagenicity testing of -camphor, 1,8-cineole, citral, citronellal, menthol and terpineol with the Salmonellarmicrosome assay. *Mutat Res* 1998, 416: 129-136

Grundmann O, Phipps SM, Zadezensky I, Butterweck V. *Salvia divinorum* and salvinorin A: an update on pharmacology and analytical methodology. *Planta Med* 2007, 73(10): 1039-1046

Gruzunov K, Mastelic J, Ruzic N. Identification of aglycones of  $\beta$ -D-glucosides from the leaves of Dalmatian sage (*Salvia off.*). *Acta Pharm Jugosl* 1984, 35: 175-179

Harborne JB, Baxter H, Moss GP. Dictionary of Plant Toxins. John Wiley & Sons, Chichester 1996, 87

Hellum BH, Nilsen OG. The in vitro Inhibitory Potential of Trade herbal Products on Human CYP2D6-Mediated Metabolism and the Influence of Ethanol. *Basic Clin Pharmacol Toxicol* 2007, 101: 350-358

Hirono I. Naturally Occurring Carcinogens of Plant Origin, Toxicology, Pathology and Biochemistry, Kodansha LTD, Tokyo 1987, 2: 76

Hold KM, Sirisoma NS, Sparks SE, Quistad GB, Casida JE.  $\alpha$ -Thujone and absinthe: Structural and metabolic aspects of neurotoxic action. Book of Abstracts 2000, Volume 2000, 23

Horiuchi K, Shiota S, Hatano T, Yoshida T, Kuroda T, Tsuchiya T. Antimicrobial Activity of Oleanolic Acid from *Salvia officinalis* and Related Compounds on Vancomycin-Resistant Enterococci (VRE). *Biol Pharm Bull* 2007, 30(6): 1147-1149

Hubbert M, Sievers H, Lehnfeld R, Kehrl W. Efficacy and Tolerability of a Spray with *Salvia officinalis* in the Treatment of Acute Pharyngitis-A Randomised, Double-Blind, Placebo-Controlled Study with Adaptive Design and Interim Analysis. *Eur J Med Res* 2006, 11: 20-26

Hänzel R, Keller K, Rimpler H. Hagers Handbuch der Pharmazeutischen Praxis. Drogen P-Z. 5th ed. Springer Verlag, Berlin 1994, 6: 548-559

Kennedy DO, Pace S, Haskell C, Okello EJ, Milne A, Scholey AB. Effects of Cholinesterase Inhibiting Sage (*Salvia officinalis*) on Mood, Anxiety and Performance on a Psychological Stressor Battery. *Neuropsychopharmacology* 2006, 31: 845-852

Länger R, Mechtler CH and Jurenitsch J. Composition of the Essential Oils of Commercial Samples of *Salvia officinalis* L. and *S. fruticosa* Miller: A Comparison of Oils Obtained by Extraction and Steam Distillation. *Phytochem Anal* 1996, 7: 289-293

Love JN, Sammon M, Smereck J. Are one or two dangerous? Camphor exposure in toddlers. *J Emerg Med* 2004, 27(1): 49-54

Madaus G. Lehrbuch der Biologischen Heilmittel, Band III. Georg Thieme Verlag, Leipzig 1938

Madaus G. Lehrbuch der Biologischen Heilmittel, Band III. Georg Thieme Verlag, Leipzig 1938  
Available at: <http://www.henriettesherbal.com/eclectic/madaus/salvia.html>  
Accessed: 04/06/2008

Marder M, Paladini AJ. GABA A-Receptor Ligands of Flavonoid Structure. *Curr Top Med Chem* 2002, 2: 853-867

Martindale W, Reynolds, JEF, Parfitt K. Martindale The Extra Pharmacopoeia, 31st ed. London Royal Pharmaceutical Society, London 1996, 1749

Martindale The Complete Drug Reference  
Available at:  
[http://www.thomsonhc.com/hcs/librarian/ND\\_T/HCS/ND\\_PR/Main/CS/147420/DUPLICATIONSHIELD\\_SYNC/89FE13/ND\\_PG/PRIH/ND\\_B/HCS/SBK/1/ND\\_P/Main/PFPUI/uiY1rv2tSssiK/PFActionId/hcs.common.RetrieveDocumentCommon/DocId/4704s/ContentSetId/30/SearchTerm/Salvia/SearchOption/BeginWith](http://www.thomsonhc.com/hcs/librarian/ND_T/HCS/ND_PR/Main/CS/147420/DUPLICATIONSHIELD_SYNC/89FE13/ND_PG/PRIH/ND_B/HCS/SBK/1/ND_P/Main/PFPUI/uiY1rv2tSssiK/PFActionId/hcs.common.RetrieveDocumentCommon/DocId/4704s/ContentSetId/30/SearchTerm/Salvia/SearchOption/BeginWith)  
Accessed: 04/06/2008

Newall CA, Anderson LA, Phillipson JD. Herbal Medicines A Guide for Health-care Professionals. London. The Pharmaceutical Press, London 1996, 231-232

Patenkovic A, Stamenkovic-Radak M, Banjanac T, Andjelkovic M. Antimutagenic effect of sage tea in the wing spot test of *Drosophila melanogaster*. *Food and Chem Tox* 2009, 47(1): 180-183

PubMed:

Available at: <http://www.ncbi.nlm.nih.gov/sites/entrez>  
Accessed: 16/06/2008

Scientific Committee on Food. Opinion of the Scientific Committee on Food on Thujone. European Commission health & consumer protection directorate - general  
Available at: [http://ec.europa.eu/food/fs/sc/scf/out162\\_en.pdf](http://ec.europa.eu/food/fs/sc/scf/out162_en.pdf)  
Accessed: 04/06/2008

Scifinder

Available at: <http://www.ub.uio.no/umn/SciFinder/> (this is not available without an account)  
Accessed: 16/06/2008

Scholey AB, Tildesley NTJ, Ballard CG, Wesnes KA, Tasker A, Perry ELK, Kennedy DO. An extract of *Salvia* (sage) with anticholinesterase properties improves memory and attention in healthy older volunteers. *Psychopharmacology* 2008, 198: 127-139

Sutovska M, Nosalova G, Franova S, Capek P, Hribalova V. The antitussive and immunomodulatory activities of pectin and hemicellulose polysaccharides originated from *Salvia officinalis* L. *Biomed Pap Med Fac Univ Palacky Olomouc Czech Repub. (Suppl. I)* 2007, 151: 107-108

Taddei I, Giachetti D, Taddei E, Mantovani P. Spasmolytic activity of Peppermint, Sage and Rosemary essences and their major constituents. *Fitoterapia* 1988, 59(6): 463-468

The Cochrane Library

Available at: [http://mrw.interscience.wiley.com/cochrane/cochrane\\_search\\_fs.html](http://mrw.interscience.wiley.com/cochrane/cochrane_search_fs.html)  
Accessed: 16/06/2008

The Merck Index

Available at:  
[https://themerckindex.cambridgesoft.com/TheMerckIndex/default.asp?formgroup=basenp\\_form\\_group&databasename=TheMerckIndex](https://themerckindex.cambridgesoft.com/TheMerckIndex/default.asp?formgroup=basenp_form_group&databasename=TheMerckIndex)  
Accessed: 04/06/2008

Todorov S, Philianos S, Pelkov V, Harvala C, Zamfirova R, Olimpiou H. Experimental Pharmacological Study of Three Species from Genus *Salvia*. *Acta Physiol Pharmacol Bulg* 1984, 10(2): 3-19

Tong T, Schneir AB, Williams SR, Ly BT, Richardson WR. Sage Tea Related Convulsions in a Pediatric Patient. *J Toxicol, Clinical Toxicology* 2003, 41(5): 727-8

ToxLine

Available at: <http://toxnet.nlm.nih.gov/cgi-bin/sis/search>  
Accessed: 16/06/2008

Van Dyke TE, Braswell, Offenbacher S. Inhibition of gingivitis by topical application of ebselen and rosmarinic acid. *Agents and Actions* 1986, 19(5-6): 376-377

Verweij-van Vught AMJJ, Appelmelk BJ, Groeneveld ABJ, Sparrius M, Thijs LG, MacLaren DM. Influence of rosmarinic acid on opsonization and intracellular killing of *Escherichia coli* and *Staphylococcus aureus*. *Agent and Actions* 1987, 22 (3-4): 289-294

Viuda-Martos M, Ruiz-Navajas Y, Fernandez-Lopez J, Angel Perez-Alvarez J. Antibacterial activity of different essential oils obtained from spices widely used in Mediterranean diet. *Int J Food Sci and Tech* 2008, 43: 526-531

Vujosevic M, Blagojevic J. Antimutagenic effects of extracts from sage (*Salvia officinalis*) in mammalian system in vivo. *Acta Vet Hung* 2004, 52(4): 439-443

Wang M, Shao Y, Li J, Zhu N, Rangarajan M, La Voie EJ, Ho CH. Antioxidative Phenolic Glycosides from Sage (*Salvia officinalis*). *J Nat Prod* 1999, 62: 454-456

Wang M, Kikuzaki H, Zhu N, Sang S, Nakatani N, Ho CT. Isolation and Structural Elucidation of Two New Glycosides from Sage (*Salvia officinalis* L.)  
*J Agric Food Chem* 2000, 48: 235-238

Weiss RF, Fintelmann V. Herbal Medicine. 2nd ed. Thieme, Stuttgart 2000, 422

Wichtl M. *Salvia officinalis* folium. In: Wichtl M, ed. Herbal Drugs and Phytopharmaceuticals. A Handbook for Practice on a Scientific Basis. 3rd ed. Medpharm, Stuttgart 2004, 538-542

Zimna D, Grzybowski J, Piekos R. Extraction of Some Essential Elements from the Leaves of Sage (*Salvia officinalis* L.). *Sci Pharm* 1984, 52: 131-141

Supersedes