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COMMITTEE ON HERBAL MEDICINAL PRODUCTS (HMPC)

LIST OF REFERENCES SUPPORTING THE ASSESSMENT REPORT ON:

**This document was valid from 5 July 2007 until January 2024.
It is now superseded by a [new version](#) adopted by the HMPC on
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Abraham K. Anti-genotoxicity of *trans*-anethole and eugenol in mice. Food Chem Toxicol 2001; 39: 493-498.

Afzal H, Akhtar MS. Preliminary studies on the antibacterial properties of essential oil extracts from five folk medicines. J Pak Med Assoc 1981; 31: 230-232.

Albert-Puleo M. Fennel and anise as estrogenic agent. J. Ethnopharmacology.1980; 2: 337-344.

Alexandrovich I, Rakovitskaya O, Kolmo E, Sidorova, T. Shushunov S. The effect of fennel (*Foeniculum vulgare*) seed oil emulsion in infantile colic: a randomized, placebo-controlled study. Alternative therapies 2003; 9: 58-61.

Al-Harbi MM, Qureshi S, Raza M, Ahmed MM, GiangrecoAB, Shah AH. Influence of anethole treatment on the tumour induced by Ehrlich ascites carcinoma cells in paw of Swiss albino mice. Eur J Cancer Prev 1995; 4: 307-318.

Andersen KE. Contact allergy to toothpaste flavours. Contact Dermatitis 1978; 4: 195-198.

Anon: Aromatherapy useful in some epilepsy patients. Pharm J 1993; 251: 798.

Avesina A. Law in medicine, 2nd ed., Vol 2, Soroush, Teheran, Press. 1985: 187.

Bilia AR, Flamini G, Taglioli V, Morelli I, Vincieri FF. GC-MS Analysis of essential oil of some commercial fennel teas. Food Chem. 2002; 76: 307-310.

Blumenthal M, Busse WR, Goldberg A *et al.* (eds): The Complete German Commission E Monographs, 1st ed. American Botanical Council, Austin, TX. 1998.

Blumenthal M, Goldberg A, Brinckmann J (eds): Herbal Medicine, Expanded Commission E Monographs, 1st ed. Integrated Medicine Communications, Newton, MA. 2000.

Boskabady MH, Khatami A. Relaxant effect of *Foeniculum vulgare* on isolated guinea pig tracheal chains. Pharm. Biology. 2003; 41: 211-215.

Boskabady MH, Khatami A, Nazazi A. Possible mechanism(s) for relaxant effect of *Foeniculum vulgare* on guinea pig tracheal chains. Pharmazie. 2004; 59: 561-564.

Bounds SVJ and Caldwell J. Pathways of Metabolism of (1'-¹⁴C)*trans*-anethole in the rat and mouse. Drug Metabolism and Disposition. 1996; 24: 717-724.

Boyd EM, Sheppard EP. An autumn-enhanced mucotropic action of inhaled terpenes and related volatile agents. Pharmacology 1971; 6: 65-80.

Brand N. *Foeniculum*. In: Hansel R, Keller K, Rimpler H, Schneider G, editors. Hagers Handbuch der Pharmazeutischen Praxis, 5th ed. Volume 5: Drogen E-O. Berlin-Heidelberg-New York-London: Springer-Verlag. 1993: 156-181.

Caldwell J. Perspective on the usefulness of the mouse lymphoma assay as an indicator of a genotoxic carcinogen: ten compounds which are positive in the test but are not genotoxic carcinogens. Teratogenesis, Carcinogenesis and Mutagenesis. 1993; 13: 185-190.

Caldwell J, Sutton JD. Influence of dose size on the disposition of *trans*-[methoxy-¹⁴C] anethole in human volunteers. Food Chem Toxicol 1988; 26: 87-91.

Caldwell J, Chan VSW, Marshall AD, Hasheminejad G, Bounds SVJ. 1'-hydroxylation is the only metabolic pathway of simple alkylbenzenes involved in their genotoxicity. Toxicologist. 1992; 12: 56.

Casciano DA, Talaska G, Clive D. The potent hepatocarcinogen methapyriline induces mutation in L5178Y mouse lymphoma cells in the apparent absence of DNA adduct formation. Mutation Res. 1992; 263: 127-132.

Chainy GBN, Manna SK, Chaturvedi MM, Aggarwal BB. Anethole blocks both early and late cellular responses transduced by tumor necrosis factor: effect on NF-κB, AP-1, JNK, MAPKK and apoptosis. Oncogene 2000; 19: 2943-2950.

Chinese Herbal Medicine (Liu Gongwang Ed.). Xiaohuixiang. Hua Xia Publishing House. 1999: 203-204 and 444-445 and 503.

"*Chinese Materia Medica*". University Textbook of Traditional Chinese Medicine. People's Medical Publishing House. TianJin. 2001.

Ciganda L, Laborde A. Herbal infusions used for induced abortions. J.Toxicol.Clin.Toxicol. 2001; 39: 318-319.

Committee for Veterinary Medicinal Products – *Foeniculi Aetheroleum*. Summary Report. The European Medicines Agency MRL 418/98.

Council of Europe. Plants in Cosmetics. 2002; Vol. II; 65-69.

Czygan FC. Fenchel. In: Teedrogen (2nd ed.). Wichtl M. (Ed). Stuttgart: Wissenschaftliche Verlagsgesellschaft. 1989; 2: 171-173.

Czygan FC, Hiller K. *Foeniculi amari fructus* - Bitterer Fenchel, *Foeniculi dulcis fructus* - Süßer Fenchel. In: Teedrogen and Phytopharmaka. Ein Handbuch für die Praxis auf wissenschaftlicher Grundlage, 4th ed Stuttgart: Wissenschaftliche Verlagsgesellschaft. 2002: 212-215.

Dadalioglu I., Evrendilek G.A. Chemical composition and antibacterial effects of essential oils of Turkish oregano (*Origanum minutiflorum*), bay laurel (*Laurus nobilis*), spanish lavender (*Lavandula stoechas* L.) and fennel (*Foeniculum vulgare*) on common foodborne pathogens. J. Agric. Food Chem. 2004; 52: 8255-8260

De-Oliveira AC, Ribeiro-Pinto LF, Otto SS, Goncalves A, Paumgartten FJ. Induction of liver monooxygenase by beta-myrcene. Toxicology. 1997; 26: 124; 135-140.

de Siqueira RJ, Magalhaes PJ, Leal-Cardoso JH, Duarte GP, Lahlou S. Cardiovascular effects of the essential oil of Croton zehntneri leaves and its main constituents, anethole and estragole, in normotensive conscious rats. Life Sci. 2006; 78: 2365-2372.

De Vincenzi M, Silano M, Maialetti F, Scazzocchio B. Constituents of aromatic plants: II. Estragole. Fitoterapia 2000; 71: 725-729.

Dhar SK. Anti-fertility activity and hormonal profile of *trans*-anethole in rats. Indian J Physiol Pharmacol 1995; 39: 63-67.

Diaz-Maroto MC, Diaz Maroto Hidalgo IJ, Sanchez-Palomo E., Perez-Coello MS. Volatile components and key odorants of fennel (*Foeniculum vulgare*) and thyme (*Thymus vulgaris*) oil extracts obtained by simultaneous distillation-extraction and supercritical fluid extraction. J. Agric. Food Chem. 2005; 53: 5385-5389.

Dorsch W, Loew D, Meyer-Buchtela E, Schilcher H. In: Kooperation Phytopharmaka, editor. Kinderdosierung von Phytopharmaka, 3rd ed. Teil I. Empfehlungen zur Anwendung und Dosierung von Phytopharmaka, monographierte Arzneidrogen und ihren Zubereitungen in der Pädiatrie: Foeniculi fructus (Fenchelfrüchte). Bonn: Kooperation Phytopharmaka, 2002: 70-71.

Drinkwater NR, Miller EC, Miller JA, Pitot HC. Hepatocarcinogenicity of estragole (1-allyl-4-methoxybenzene) and 1'-hydroxyestragole in the mouse and mutagenicity of 1'-acetoxyestragole in bacteria. J Natl Cancer Inst. 1976; 57: 1323-1331.

El Bardai S, Lyoussi B, Wibo M, Morel N. Pharmacological evidence of hypotensive activity of *Marrubium vulgare* and *Foeniculum vulgare* in spontaneously hypertensive rats. Clin Exper Hypertension 2001; 23: 329-343.

EMA/HMPC Public statement on the use of herbal medicinal products containing estragole. (EMA/HMPC/137212/2005).

European Commission: Scientific Committee on Food. Opinion of the scientific committee on food on estragole (1-allyl-4-methoxybenzene). 26 September 2001.

European Pharmacopoeia, Fennel, Bitter - Foeniculi amari fructus. Council of Europe. 01/2005:0824

European Pharmacopoeia, Fennel, Sweet - Foeniculi dulcis fructus. Council of Europe. 01/2005:0825

European Pharmacopoeia, Bitter Fennel fruit oil - Foeniculi amari fructus aetheroleum. Council of Europe. 5th ed. 1/2005:0826; 1108

ESCOP (European Scientific Cooperative on Phytotherapy): Fennel. In: Monographs on the medicinal uses of plant drugs (2nd edition). Argyle House, ESCOP, Exeter, UK. 2003.

Ezzat SM. *In vitro* inhibition of *Candida albicans* growth by plant extracts and essential oils. World J. Microbiol. Biotechnol. 2001; 17: 757-759.

Farag R, Daw Z, Abo-Raya S. Influence of some spice essential oils on *A. parasiticus* growth and production of aflatoxins in a synthetic medium. *J. Food Sci.* 1989; 54: 74-76.

Forster HB, Niklas H, Lutz S. Antispasmodic effects of some medicinal plants. *Planta Med* 1980; 40: 309-319.

Forster HB. Spasmolytische Wirkung pflanzlicher Carminativa. Tierexperimentelle Untersuchungen. *Z Allg Med* 1983; 59: 1327-1333.

Franks A. Contact allergy to anethole in toothpaste associated with loss of taste. *Contact Dermatitis* 1998; 38: 354.

Friedman M., Henika PR, Mandrell RE. Bacterial activities of plant essential oils and some of their isolated constituents against *Campylobacter jejuni*, *Escherichia coli*, *Listeria monocytogenes* and *Salmonella enterica*. *J. Food Prot.* 2002; 65: 1545-1560.

Garcia Gonzalez JJ, Bartolomè Zavala B, Fernandez Meléndez S, Barcelò-Munoz JM, Pàez AM, Carmona-Bueno MJH, Vega-Chicote JM, Negro Carrasco M, Godoy AA, Espinosa RP. Occupational riginosconjunctivitis and food allergy because of aniseed sensitization. *Ann. Allergy, Asthma Immunol.* 2002; 88: 518-522.

Ghelardini C, Galeotti N, Mazzanti G. Local anaesthetic activity of monoterpenes and phenylpropanes of essential oils. *Planta Med* 2001; 67: 564-566.

Gorelik NJ. Genotoxicity of *trans*-anethole *in vitro*. *Mutation Res.* 1995; 326: 199-209.

Hammer KA, Carson CF, Riley TV. Antimicrobial activity of essential oils and other plant extracts. *J Applied Microbiol* 1999; 86: 985-990.

Hare HA, Caspari C, Rusby HH. *The National Standard Dispensatory*. Lea & Febiger. 1916.

Hagan EC, Hansen WH, Fitzhugh OG, Jenner PM, Jones W, Taylor JM, Long EL, Nelson AA, Brower JB. Food flavourings and compounds of related structure. II. Subacute and chronic toxicity. *Food Cosmet Toxicol* 1967; 5: 141-157.

Hasan H.A.H., Inhibition of mycoflora and zearalenone on rice by selected essential oils. *Pakistan Journal of Scientific and Industrial Research* 1994; 37: 471-473.

Heck JD, Vollmuth TA, Cifone MA, Jagannath DR, Mhyr B. and Curren RD. Evaluation of food flavouring ingredients in a genetic toxicity screening battery. *Toxicologist.* 1989; 9: 257.

Howes AJ, Chan VSW, Caldwell J. Structure-specificity of the genotoxicity of some naturally occurring alkenylbenzenes determined by the unscheduled DNA synthesis assay in rat hepatocytes. *Food Chemical Toxicol.* 1990; 28: 537-542.

Howes MJ, Houghton PJ, Barlow DJ, Pocock VJ, Milligan SR. Assessment of estrogenic activity in some common essential oil constituents. *J Pharm Pharmacol.* 2002; 54(11):1521-1528.

Hsia MTS, Adamovics JA, Kreamer BL. Microbial studies of insect growth regulators and other potential insecticidal compounds in *Salmonella typhimurium*. *Chemosphere.* 1979; 8: 521-529.

Imaseki I, Kitabatake Y. Yakugku Zasshi. Studies on effect of essential oils and their components on the isolated intestines of mice. *Jpn J Pharmacol.* 1962; 82: 1326-1328.

Ishidate M, Sofuni T, Yoshikawa K, Hayashi M, Nohmi T, Sawada M, Matsuoka A. Primary mutagenicity screening of food additives currently used in Japan. *Food Chem Toxicol* 1984; 22: 623-636.

Ishikawa T, Kitajima J, Tanaka Y, Ono M, Ito Y, Nohara T. Water-soluble constituents of fennel. VI. 1,8-Cineole type glycosides. Chem Pharm Bull 1998; 46: 1738-1742.

Ishikawa T, Tanaka Y, Kitajima J. Water-soluble constituents of fennel. VII. Acyclic monoterpenoid glycosides. Chem Pharm Bull 1998; 46: 1748-1751.

Ishikawa T, Kitajima J, Tanaka Y. Water-soluble constituents of fennel. III. Fenchane-type monoterpenoid glycosides. Chem Pharm Bull 1998; 46: 1599-1602.

Ishikawa T, Kitajima J, Tanaka Y. Water-soluble constituents of fennel. IV. Menthane-type monoterpenoids and their glycosides. Chem Pharm Bull 1998; 46: 1603-1606.

L'Italia Agricola. Piante medicinali e aromatiche. Reda ed. 1989: 182-183.

Iten F., Saller R. Fencheltee Im Kindesalter Nutzen-Risiko-Abschätzung Forschende Komplementärmedizin und Klassische Naturheilkunde. 2004: 517- 530

Jahromi BN, Tartifizadeh A, Knabnadideh S. Comparison of fennel and mefenamic acid for the treatment of primary dysmenorrhea. Int. J. Gynecol. Obstet. 2003; 80: 153-157.

Javidnia K, Dastgheib L, Samani Mohammadi S, Naisri A. Antihirsutism activity of fennel (fruits of *Foeniculum vulgare*) extract. Double-blind placebo controlled study. Phytomedicine. 2003; 10: 455-458.

Joint FAO/WHO Expert Committee on Food Additives (JECFA) safety evaluation of certain food additives. Trans-anethole. World Health Organization, Geneva. 1999.

Keller K. *Foeniculum vulgare*. In: De Smet PAGM, Keller K, Hansel R, Chandler RF, editors. Adverse effects of herbal drugs, Volume 1. Berlin-Heidelberg-New York: Springer-Verlag. 1992: 135-142.

Kitajima J, Ishikawa T, Tanaka Y. Water-soluble constituents of fennel. I. Alkyl glycosides. Chem Pharm Bull 1998; 46: 1643-1646.

Kitajima J, Ishikawa T, Tanaka Y. Water-soluble constituents of fennel. II. Four *erythro*-anethole glycol glycosides and two p-hydroxyphenyl propylene glycol glycosides. Chem Pharm Bull 1998; 46: 1591-1594.

Kitajima J, Ishikawa T, Tanaka Y, Ono M, Ito Y, Nohara T. Water-soluble constituents of fennel. V. Glycosides of aromatic compounds. Chem Pharm Bull 1998; 46: 1587-1590.

Kunzemann J, Herrmann K. Isolierung und Identifizierung der Flavon(ol)-O-glykoside in Kümmel (*Carum carvi* L.), Fenchel (*Foeniculum vulgare* Mill.), Anis (*Pimpinella anisum* L.) and Koriander (*Coriandrum sativum* L.) and von Flavon-C-Glykosiden im Anis. Z Lebensm Unters-Forsch 1977; 164: 194-200.

Kwon YS, Choi WG, Kim WJ, Kim WK, Kim MJ, Kang WH, Kim CM. Antimicrobial constituents of *Foeniculum vulgare*. Arch Pharm Res. 2002; 25: 154-157.

Leclerc H. Fenouil. In: Précis de Phytothérapie – Essai de thérapeutique par les plantes françaises. Paris: Masson, 1983: 162-163

Levy SB. Bronchial asthma due to ingestion of fennel and fennel seed. Ann.Allergy. 1948; 6: 415-416.

Lin FSD. *Trans*-anethole. In: Joint FAO/WHO Expert Committee on Food Additives. Toxicological evaluation of certain food additives and contaminants. WHO Food Additives Series 28. Geneva: World Health Organization 1991: 135-152.

Lis-Balchin M, Hart S. A preliminary study of the effect of essential oils on skeletal and smooth muscle *in vitro*. *J Ethnopharmacol* 1997; 58: 183-187

Liu Gan Zhong, Xu Qiu Ping, Wang Tai. "The Essentials of Traditional Chinese Herbal Medicine". Foreign Language Press, Beijing. 2003.

Lo Cantore P, Jacobellis NS, De Marco A, Capasso F., Senatore F, Antibacterial activity of *Coriandrum sativum* L. and *Foeniculum vulgare* Miller var. *vulgare* (Miller) essential oils. *J. Agric. Food Chem.* 2004; 52: 7862-7866.

Locock RA: Fennel. *Can Pharm J* 1994; 126: 503-504.

Madaus G. *Lehrbuch der biologischen Heilmittel*. Leipzig: Bd. 3, Thieme-Verlag, 1. Aufl. 1938.

Madaus G. *Foeniculum*. In: *Lehrbuch der biologischen Heilmittel*. Volume II. 2 Georg Olms ed. Hildesheim-New York. 1976: 1354-1361.

Malini T, Vanithakumari G, Megala N, Anusya S, Devi K, Elango V. Effect of *Foeniculum vulgare* Mill. seed extract on the genital organs of male and female rats. *Indian J Physiol Pharmacol* 1985; 29: 21-26.

Marcus C, Lichtenstein EP. Interactions of naturally occurring food plant components with insecticides and pentobarbital in rats and mice. *J Agric Food Chem* 1982; 30: 563-568.

Maruzzella JC, Freundlich M. Antimicrobial substances from seeds. *J Am Pharm Assoc* 1959; 48: 356-358.

Marzin D. Recherche d'une action mutagène par le test du micronucleus chez la souris (unpublished). Département Recherche et Essais Biologiques Stallergnes 1979.

Mascolo N, Autore G, Capasso F, Menghini A, Fasulo MP. Biological screening of Italian medicinal plants for anti-inflammatory activity. *Phytother Res* 1987; 1: 28-31.

Merkes K. Drogen mit ätherischem Öl (XVI): *Foeniculum vulgare* Miller - Fenchel. *PTA-Repetitorium* 1980; 12: 45-48.

Miller EC, Swanson AB, Philips DH, Fletcher L, Liem A, Miller JA. Structure-activity studies of the carcinogenities in the mouse and rat of some naturally occurring and synthetic alkenylbenzene derivatives related to safrole and estragole. *Cancer Res.* 1983; 43: 1124-1134.

Mortelmans K, Haworth S, Lawlor T, Speck W., Tainer B, and Zeiger E. Salmonella mutagenicity tests: II. Results from the testing of 270 chemicals. *Environ. Mutagen.* 1986; 6 (suppl.7): 1-119.

Muller L, Kasper P, Muller-Tegethoff K., Petr T. The genotoxic potential *in vitro* and *in vivo* of the alkylbenzene etheric oils estragole, basil oil and *trans*-anethole. *Mutat. Res.* 1994; 325: 129-136.

Mills *et al.* (eds). *Principles and practice of Phytotherapie*. Churchill Livingstone, Edinburgh. 2000: 374-378.

- Miraldi E. Comparison of the essential oils from ten *Foeniculum vulgare* Miller samples of fruits of different origin. *Flavour Fragrance J.* 1999; 14: 379-382.
- Morimoto I, Watanabe F, Osawa T, Okitsu T, Kada T. Mutagenicity screening of crude drugs with *Bacillus subtilis* rec-assay and Salmonella/microsome reversion assay. *Mutat Res* 1982; 97: 81-102.
- Müller-Limmroth W, Fröhlich H-H. Wirkungsnachweis einiger phytotherapeutischer Expektorantien auf den mukoziliaren Transport. *Fortschr Med* 1980; 98: 95-101.
- Nestmann ER, Lee EGH. Mutagenicity of constituents of pulp and paper mill effluent in growing cells of *Saccharomyces cerevisiae*. *Mutation Res.* 1983; 119 : 273-280.
- Nestmann ER, Lee EGH, Matula TI, Douglas GR, Meuller JC. Mutagenicity of constituents of pulp and paper mill effluent using the salmonella/mammalian-microsome assay. *Mutat. Res.* 1980; 79: 203-212.
- Newberne PM, Carlton WW, Brown WR. Histopathological evaluation of proliferative lesions in rats fed *trans*-anethole in chronic studies. *Food Chem. Toxicol.* 1989; 27: 21-26.
- Newberne P, Smith RL, Doull J, Goodman JI, Munro IC, Portoghese PS, Wagner BM, Weil CS, Woods LA, Adams TB, Lucas CD, Ford RA. The FEMA GRAS assessment of *trans*-anethole used as a flavouring substance. *Flavour and Extract Manufacturer's Association. Food Chem Toxicol.* 1999; 37: 789-811.
- Niesel S. Untersuchungen zum Freisetungsverhalten und zur Stabilität ausgewählter wertbestimmender Pflanzeninhaltsstoffe unter besonderer Berücksichtigung moderner phytochemischer Analysenverfahren. Inaugural Dissertation zur Erlangung der Doktorwürde im Fachbereich Pharmazie der Freien Universität Berlin, 1992.
- Niiho Y, Takayanagi I, Takagi K. Effects of a combined stomachic and its ingredients on rabbit stomach motility *in situ*. *Japan J Pharmacol* 1977; 27: 177-179.
- Oktay M, Gulcin, I, Kufrevioglu I. Determination of *in vitro* antioxidant activity of fennel (*Foeniculum vulgare*) seed extracts. *Lebensmittel-Wissenschaft Technologie.* 2003; 36: 263-271.
- Ono M, Masuoko C, Ito Y, Niiho Y, Kinjo J, Nohara T. Antioxidative and antihyaluronidase activities of some constituents from *Foeniculi fructus*. *Food Sci. Technol. Internat.* 1997; 3: 53-55.
- Opdyke DLJ. Monographs on fragrance raw materials: fennel oil, bitter. *Food Cosmet Toxicol* 1976; 14: 309.
- Opdyke DLL Monographs on fragrance raw materials: fennel oil. *Food Cosmet Toxicol* 1974; 12: 879-880.
- Orosi G. *Farmacologia Teorica e Pratica.* (Vincenzo Mausì Ed.). 1851: Vol. I; 40.
- Ostad SN, Shariffzadeh M, Soodi M. Evaluation of toxicity of *Foeniculum vulgare* variety *dulce* and its LD₅₀. *Barij Essence Pamphlet.* 2000; 1: 24-26.
- Ostad SN, Khakinegad B, Sabzevari O. Evaluation of teratogenicity of fennel essential oil (FEO) on the rat embryo limb buds culture. *Toxicology in vitro.* 2004; 18: 623-627.
- Ostad SN, Soodi M, Shariffzadeh M, Khorshidi N, Marzban H. The effect of fennel essential oil on uterine contraction as a model for dysmenorrhea; pharmacology and toxicology study. *J Ethnopharmacol* 2001; 76: 299-304.

- Ozbek H. Investigation of the level of the lethal dose 50 and the hypoglycemic effect of *Foeniculum vulgare* Mill. Fruit essential oil extract in healthy and diabetic mice. Van Tip Dergisi 2002; 9: 98-103.
- Ozbek H, Ugras S, Ozturk M, Bayram I, Citoglu GS. Hypoglycemic and hepatoprotective effects of *Foeniculum vulgare* Miller seeds fixed oil extract in mice and rats. Eastern J. Medicine. 2003b; 8: 35-40
- Ozbek H, Ugras S, Bayram I, Uygan I, Erdogan E, Ozturk A, Huyut Z. Hepatoprotective effect of *Foeniculum vulgare* essential oil: A carbon-tetrachloride induced liver fibrosis model in rats. Scand. J. Lab. Anim. Sci. 2004; 31: 9-17.
- Ozbek H, Ugras S, Dulger H, Bayram I, Tunur I, Ozturk G, Ozturk A. Hepatoprotective effect of *Foeniculum vulgare* essential oil. Fitoterapia. 2003a; 74: 317-319.
- Park JS, Baek HH, Bai DH, Oh TK, Lee CH. Antibacterial activity of fennel (*Foeniculum vulgare* Mill.) seed essential oil against the growth of *Streptococcus mutans*. Food Scii Biotechnol. 2004; 13: 581-585.
- Pharmacopoeia of the People's Republic of China (English Ed.) Xiaohuixiang. 2000; Vol. I; 73-74.
- Phillips DH, Reddy MV, Randerath K. 32-P-post labelling analysis of DNA adducts formed in the livers of animals treated with safrole, estragole and other naturally-occurring alkenylbenzenes.II. Newborn male B6C3F1 mice. Carcinogenesis. 1984; 5: 1623- 1628.
- Plant OH, Miller GH. J. Effects of carminative volatile oils on the muscular activity of the stomach and colon. Exp. Pharmacol. Ther. 1926; 27: 149-164.
- Platel K, Srinivasan K. Studies on the influence of dietary spices on food transit time in experimental rats. Nutr Res 2001; 21: 1309-1314.
- Ramadan FM, El-Zanfaly RT, El-Wakeil FA, Alian AM. On the antibacterial effects of some essential oils. I. Use of agar diffusion method. Chem Mikrobiol Technol Lebensm 1972; 2: 51-55.
- Reed PM, Caldwell J. Induction of hepatic cytochrome P450 and related activities following dietary administration of trans-anethole in SD-CD rats. Hum. Experimen. Toxicol. 1992; 11: 580-581.
- Reicks MM, Crankshaw D. Effects of D-limonene on hepatic microsomal monooxygenase activity and paracetamol-induced glutathione depletion in mouse. Xenobiotica. 1993; 23: 809-819.
- Reiter M, Brandt W. Relaxant effects on tracheal and ileal smooth muscles of the guinea-pig. Arzneimittelforschung/Drug Res.1985; 35: 408-414.
- Ruberto G, Baratta MT, Deans SG, Dorman HJD. Antioxidant and antimicrobial activity of *Foeniculum vulgare* and *Crithmum maritimum* essential oils. Planta Med 2000; 66: 687-93.
- Sangster SA, Caldwell J, Hutt AJ, Anthony A. Smith RL. The metabolic disposition of [methoxy-¹⁴C]-labelled *trans*-anethole, estragole and *p*-propylanisole in human volunteers. Xenobiotica 1987; 17: 1223-1232.
- Sangster SA, Caldwell J, Smith RL, Farmer PB. Metabolism of anethole. I. Pathways of metabolism in the rat and mouse. Food Chem Toxicol 1984a; 22: 695-706.
- Sangster SA, Caldwell J, Smith RL. Metabolism of anethole. II. Influence of dose size on the route of metabolism of *trans*-anethole in the rat and mouse. Food Chem Toxicol 1984b; 22: 707-713.

Satyanarayana S, Sushruta K, Sarma GS, Srinivas N, Subba Rayu GV. Antioxidant activity of the aqueous extract of spicy food additives-evaluation and comparison with ascorbic acid in *in vitro* systems. J Herb Pharmacother. 2004; 4: 1-10.

SATCM - State Administration of Traditional Chinese Medicine. New World Press, BeiJing. 2002. "Vol. II Advanced Textbook on Traditional Chinese Medicine and Pharmacology". State Administration of Traditional Chinese Medicine. New World Press, BeiJing. 2002.

Savino F, Cresi F, Castagno E, Silvestro L, Oggero R. A randomized double-blind placebo-controlled trial of a standardized extract of *Matricariae recutita*, *Foeniculum vulgare* and *Melissa officinalis* (ColiMil) in the treatment of breastfed colicky infants. Phytother Res. 2005; 19: 335-340.

Schilcher H. Ätherische Öle - Wirkungen und Nebenwirkungen Dtsch. Apoth. Ztg. 1984; 124: 1433-1442.

Schilcher H. Pharmakologie und Toxikologie ätherischer Öle. Therapiewoche. 1986; 36: 1100-1112.

Schulz V, Hansel R, Tyler VE. Rational Phytotherapy. A Physician's Guide to Herbal Medicine. Springer, New York, NY; 1998: 159-160.

Schwartz HJ, Jones RT, Rojas AR, Squillace DL, Yunginger JW. Occupational allergic rhinoconjunctivitis and asthma due to fennel seed. Ann Allergy Asthma Immunol. 1997; 78: 37-40.

Sekizawa J, Shibamoto T. Genotoxicity of safrole related chemicals in microbial test systems. Mutat Res 1982; 101: 127-140.

Shah AH, Qureshi S, Ageel AM. Toxicity studies in mice of ethanol extracts of *Foeniculum vulgare* fruit and *Ruta chalepensis* aerial parts. J Ethnopharmacol 1991; 34: 167-72.

Singh G, Kapoor IP, Pandey SK, Singh UK, Singh RK. Studies on essential oils: Part 10; Antibacterial activity of volatile oils of some spices. Phytother. Res. 2002; 16: 680-682.

Soher EA. Prevention of the growth and aflatoxin production of *Apergillus flavus* by some spice essential oils. Minufiya J. Agric. Res. 1999; 24: 563-576.

Shlosberg A, Egyed M. Experimental *Ferula communis* (giant fennel) toxicosis in sheep. Zentralbl Veterinarmed A. 1985; 32: 778-784.

Soliman KM, Badeaa RI. Effect of oil extracted from some medicinal plants on different mycotoxigenic fungi. Food Chem. Toxicol. 2002; 40: 1669-1675.

Stäger J, Wüthrich B, Johansson S. Spice allergy in celery-sensitive patients. Allergy 1991; 46: 475-478.

Swanson AB, Chambliss DD, Blomquist JC, Miller EC, Miller JA. The mutagenicities of safrole, estragole, eugenol, *trans*-anethole and some of their known or possible metabolites for *Salmonella typhimurium* mutants. Mutat. Res. 1979; 60: 143-153.

Sweetman SE, editor. Fennel, Fennel oil. In: Martindale - The complete drug reference. 33rd ed. London: Pharmaceutical Press. 2002: 1610.

Teuscher E, Anton R, Lobstein A. Plantes aromatiques. Editions Tec&Doc Paris. 2005: 236-241.

Tisserand R, Balacs T. Fennel (sweet and bitter). In: Essential Oil Safety - A guide for health care professionals. Edinburgh: Churchill Livingstone, 1995: 136.

To LP, Hunt TP, Andersen ME. Mutagenicity of *trans*-anethole, estragole, eugenol and safrole in the Ames *Salmonella typhimurium* assay. Bull. Environ. Contam. Toxicol. 1982; 28: 647-654.

Tóth L. Untersuchungen fiber das ätherische Öl von *Foeniculum vulgare*. Planta Med 1967; 15: 157-172.

Trenkle K. Contents of fennel root (*Foeniculum vulgare* Mill.) Pharmazie 1969; 24: 782.

Trenkle K. Recent studies in *Foeniculum vulgare*. Organic acids, especially phenyl carbonic acids. Planta Med 1971; 20: 289-301.

Trenkle K. Neuere Untersuchungen an Fenchel (*Foeniculum vulgare* M.). 2. Mitteilung: Das ätherische Öl von Frucht, Kraut and Wurzel fruktifizierender Pflanzen. Pharmazie 1972; 27: 319-324.

Truhaut R, Le Bourhis B, Attia M, Glomot R, Newman J, Caldwell J, Chronic toxicity/carcinogenicity of *trans*-anethole in rats. Food Chem. Toxicol. 1989; 27: 11-20.

Valnet J. Fenouil. In: Aromathérapie - Traitement des maladies par les essences de plantes. Paris: Maloine, 1990.

Vasudevan K, Vembar S, Veeraraghavan K, Haranath PS. Influence of intragastric perfusion of aqueous spice extracts on acid secretion in anesthetized albino rats. Indian J Gastroenterol 2000; 19: 53-56.

Von Skramlik E. On the toxicity and tolerance of ethereal oils. Pharmazie 1959; 14: 435-45.

Weiss RF. In: Lehrbuch der Phytotherapie, 8th ed. Stuttgart: Hippokrates. 1997: 82-83, 443 and 463.

Weizman Z, Alkrinawi S, Goldfarb D, Biltran C. Efficacy of herbal tea preparation in infantile colic. J. Pediatric. 1993; 22: 650-652.

Wiseman RW, Miller EC, Miller JA, Liem A. Structure-activity studies of the hepatocarcinogenicities of alkenylbenzene derivatives related to estragole and safrole on administration to preweaning male C57BL/6J x C3H/HeJ F1 mice. Cancer Res. 1987; 47: 2275-2283.

Yamamoto H, Mizutani T, Nomura H. Studies on the mutagenicity of crude drug extracts. I. Yakugaku Zasshi 1982; 102: 596-601.

Zagari A. Medicinal plants. Tehran University Publication. Tehran, Iran. 1992: 32-37.

Zhu M, Wong PY, Li RC: Effect of oral administration of fennel (*Foeniculum vulgare*) on ciprofloxacin absorption and disposition in the rat. J Pharm Pharmacol 1999; 51: 1391-1396.

Other consulted bibliographic documentation:

- The effect of a herbal water-extract on histamine release from mast cells and on allergic asthma. J Herb Pharmacother. 2003; 3: 41-54.
- Betts TJ Anethole and fenchone in the developing fruits of *Foeniculum vulgare* Mill. J Pharm Pharmacol 1968; 20: 469-472
- Maruzzella JC, Liguori L. The *in vitro* antifungal activity of essential oils. J Am Pharm Assoc (Baltim). 1958;47: 250-254.
- Lord CF Jr, Husa WJ. Antimolding agents for syrups. J Am Pharm Assoc (Baltim). 1954; 43: 438-440.
- Gockeritz D, Weuffen W, Hoppe H. Terpenes and terpene derivatives of carvone and camphor type their antimicrobial and verminoxious properties. Pharmazie. 1974; 29: 339-344.
- Wenzel DG, Ross CR Central stimulating properties of some terpenones. J Am Pharm Assoc 1957; 46: 77-82.
- Stoner GD, Shimkin MB, Kniazeff AJ, Weisburger JH, Weisburger EK, Gori GB Test for carcinogenicity of food additives and chemotherapeutic agents by the pulmonary tumor response in strain A mice. Cancer Res 1973; 33: 3069-3085
- Calcandi V, Ciropol-Calcandi I, Georgescu E Studies on the etheral oils of some umbelliferous plants grown in Rumania. Pharmazie 1961; 16: 331-334
- Singh YN Traditional medicine in Fiji: some herbal folk cures used by Fiji Indians. J Ethnopharmacol 1986; 15: 57-88.
- Dhawan BN, Dubey MP, Mehrotra BN, Rastogi RP, Tandon JS Screening of Indian plants for biological activity: Part IX. Indian J Exp Biol 1980; 18: 594-606
- Arya S. Controlling angiotensin-converting-enzyme-inhibitor induced cough by fennel fruit. Indian J Pharmacol 1999; 31: 159.
- Asero R. Fennel, cucumber, and melon allergy successfully treated with pollen-specific injection immunotherapy. Ann Allergy Asthma Immunol 2000; 84: 460-462.
- Bedoukian P: Perfumery and flavor materials. Perfum Flavor 1984; 9: 22-31.
- Edenharder R, Kurz P, Burgard S *et al.* In vitro effect of vegetable and fruit juices on the mutagenicity of 2-amino-3-methylimidazo(4,5-f)quinoline, 2-amino-3,4-dimethylimidazo(4,5-f)quinoline and 2-amino-3,8-dimethylimidazo(4,5-f)quinoxaline. Food Chem Toxicol 1994; 32: 443-459.
- Farag R, Abu-Raiia S, Abdel-Moein N *et al.* The essential oils of coriander, common dill, and bitter fennel and their effects on diabetic rats. Bull Fac of Agric, Univ of Cairo 1992; 43: 31-44.
- Franke W: Vitamin C in sea fennel (*Crithmum maritimum*), an edible plant. Econ Bot 1982; 36: 163-165.
- Fyfe L, Armstrong F & Stewart J. Inhibition of *Listeria monocytogenes* and *Salmonella enteritidis* by combinations of plant oils and derivatives of benzoic acid: the development of synergistic antimicrobial combinations. Int J Antimicrob Agents 1998; 9: 195-199.
- McGuffin M, Hobbs C, Upton R *et al* (eds). American Herbal Products Association's Botanical Safety Handbook. CRC Press, Boca Raton, FL; 1997.
- Miura Y, Ogawa K, Fukui H *et al.* Changes in the essential oil components during the development of fennel plants from somatic embryoids. Planta Medica 1987; 53: 95-96.
- Mostafa M, El-Naway M, El-Zalaki E *et al.* Antimicrobial effect of Egyptian anise and fennel volatile oils and of anethol. J Agric Res 1984; 9: 283-299.
- Sadek M: The antimicrobial effects of some essential oils on the growth of some microorganisms. Ann Agric Sci 1993; 31: 907-916.
- Annusuya S, Vanithakumari G, Megala N, Devi K, Malini T, Elango V. Effect of *Foeniculum vulgare* seed extracts on cervix & vagina of ovariectomised rats. Indian J Med Res. 1988; 87: 364-367.
- Zondek B, Bergmann E. Phenol methyl ethers as estrogenic agents. Biochem J. 1938; 32: 641-5.