

NATURAL HEALTH PRODUCT

TURMERIC – *CURCUMA LONGA* Oral

This monograph is intended to serve as a guide to industry for the preparation of Product Licence Applications (PLA) and labels for natural health product market authorization. It is not intended to be a comprehensive review of the medicinal ingredient.

Notes

- ▶ Text in parentheses is additional optional information which can be included on the PLA and product labels at the applicant's discretion.
- ▶ The solidus (/) indicates that the terms and/or statements are synonymous. Either term or statement may be selected by the applicant.

Date

July 31, 2018

Proper name(s), Common name(s), Source material(s)

Table 1. Proper name(s), Common name(s), Source material(s)

Proper name(s)	Common name(s)	Source material(s)	
		Proper name(s)	Part(s)
<i>Curcuma longa</i>	<ul style="list-style-type: none"> ▶ Common turmeric ▶ Curcuma ▶ Indian-saffron ▶ Jianghuang ▶ Turmeric ▶ Yellow ginger 	<i>Curcuma longa</i>	Rhizome

References: Proper name: USDA 2018; Common names: USDA 2018, McGuffin et al. 2000; Source material: PPRC 2005, ESCOP 2003, Blumenthal et al. 2000.

Route of administration

Oral (ESCOP 2003; Blumenthal et al. 2000)

Dosage form(s)

This monograph excludes foods or food-like dosage forms as indicated in the Compendium of Monographs Guidance Document.

Acceptable dosage forms for the age category listed in this monograph and specified route of administration are indicated in the Compendium of Monographs Guidance Document.

Use(s) or Purpose(s)

- ▶ Source of/ Provides antioxidants (ESCOP 2003; Blumenthal et al. 2000; Mills and Bone 2000).
- ▶ Used in Herbal Medicine to aid digestion (ESCOP 2003; Williamson 2003; Blumenthal et al. 2000; Mills and Bone 2000).
- ▶ (Traditionally) used in Herbal Medicine to help relieve flatulent dyspepsia (carminative) (Mills and Bone 2005; Blumenthal et al. 2000; Wren 1907).
- ▶ Used in Herbal Medicine as a hepatoprotectant/liver protectant (Boon and Smith 2004; Williamson 2003).
- ▶ Used in Herbal Medicine to increase bile excretion by the liver (choloretic) and stimulate contraction of the gallbladder (cholagogue) (Mills and Bone 2005; Boon and Smith 2004; Wichtl 2004; Williamson 2002; Blumenthal et al. 2000; Mills and Bone 2000).
- ▶ (Traditionally) used in Herbal Medicine as an anti-inflammatory to help relieve joint pain (Winston and Kuhn 2008; Blumenthal et al. 2000; WHO 1999).
- ▶ Used in Traditional Chinese Medicine (TCM) to eliminate blood stasis, promote the flow of qi, relieve pain of menstruation due to blood stasis (PPRC 2005).
- ▶ Traditionally used in Ayurveda to relieve pain and inflammation (Paranjape 2005; Murthy 2004; API 2001; Kapoor 2001).

The following combined use(s) or purpose(s) is/are also acceptable:

- ▶ (Traditionally) used in Herbal Medicine to help relieve flatulent dyspepsia (carminative) and aid digestion (Mills and Bone 2005; ESCOP 2003; Williamson 2003; Blumenthal et al. 2000; Mills and Bone 2000; Wren 1907)
- ▶ Used in Herbal Medicine to aid digestion, increase bile excretion by the liver and stimulate the gallbladder (Mills and Bone 2005; Boon and Smith 2004; Wichtl 2004; Williamson 2002; Blumenthal et al. 2000; Mills and Bone 2000).

Note

Claims for traditional use must include the term “Herbal Medicine”, “Traditional Chinese Medicine”, or “Ayurveda”.

Dose(s)

Subpopulation(s)

Adults 18 years and older



Quantity(ies)

Antioxidant

Methods of preparation: Dry, powder, Non-Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion)

Not to exceed 9 grams of dried rhizome, per day; For dry extracts, maximum ratio is 25:1 (EMEA 2009; ESCOP 2003; Williamson 2003; Blumenthal et al. 2000).

Methods of preparation: Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion)

Extract providing up to 35% Curcuminoids; Quantity crude equivalent: no to exceed 9 grams of dried rhizome, per day (Bagchi 2012; EMEA 2009; ESCOP 2003; Williamson 2003; Blumenthal et al. 2000).

Digestive aid; Relief of flatulent dyspepsia; Hepatoprotectant; Bile excretion; Anti-inflammatory

Methods of preparation: Dry, Powder, Non-Standardised Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion)

1-9 grams of dried rhizome, per day; For dry extracts, maximum ratio is 25:1 (EMEA 2009; Mills and Bone 2005; Wichtl 2004; ESCOP 2003; Williamson 2003; Blumenthal et al. 2000)

Methods of preparation: Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion)

Extract providing up to 35% Curcuminoids; Quantity crude equivalent: 1- 9 grams of dried rhizome, per day (Bagchi 2012; EMEA 2009; Mills and Bone 2005; Wichtl 2004; ESCOP 2003; Williamson 2003; Blumenthal et al. 2000)

Ayurveda

Methods of preparation: Dry, powder, Non-Standardized Ethanolic Extracts (Dry extract, Tincture, Fluid extract)

1-4 grams of dried rhizome, per day; For dry extracts, maximum ratio is 25:1 (Williamson 2002, API 2001, Kapoor 2001)



TCM

Methods of preparation: Decoction, Decoction concentrate

3-9 grams of dried rhizome, per day; For dry extracts, maximum ratio is 25:1 (PPRC 2005; Bensky and Gamble 1993).

Direction(s) for use

No statement required.

Duration(s) of use

No statement required.

Risk information

Caution(s) and warning(s)

All products

Consult a health care practitioner/health care provider/health care professional/doctor/physician prior to use if you are pregnant or breastfeeding, have gallstones, a bile duct obstruction, stomach ulcers or excess stomach acid (ESCOP 2003; Brinker 2001; McGuffin et al. 1997).

All products except for Antioxidants

Consult a health care practitioner/health care provider/health care professional/doctor/physician if symptoms persist or worsen.

Contraindication(s)

No statement required.

Known adverse reaction(s)

No statement required.

Non-medicinal ingredients

Must be chosen from the current Natural Health Products Ingredients Database (NHPID) and must meet the limitations outlined in the database.

Storage conditions

No statement required.

Specifications

- ▶ The finished product specifications must be established in accordance with the requirements described in the Natural and Non-prescription Health Products Directorate (NNHPD) Quality of Natural Health Products Guide.
- ▶ The medicinal ingredient must comply with the requirements outlined in the NHPID.

References cited

API 2001 [1990]. The Ayurvedic Pharmacopoeia of India, 1st edition, Part I, Volume I. Delhi (IN): The Controller of Publications; [Reprint of 1990 publication].

Bagchi 2012. Extraction of Curcumin. IOSR Journal of Environmental Science, Toxicology and Food Technology 1(3):1-16.

Bensky D, Gamble A. 1993. Chinese Herbal Medicine Materia Medica. Revised Edition. Seattle (WA): Eastland Press, Incorporated.

Blumenthal M, Goldberg A, Brinkmann J, editors. 2000. Herbal Medicine: Expanded Commission E Monographs. Boston (MA): Integrative Medicine Communications.

Boon H, Smith M. 2004. The Complete Natural Medicine Guide to the 50 Most Common Medicinal Herbs. Toronto (ON): Robert Rose Inc.

Brinker F. 2001. Herb Contraindications and Drug Interactions, 3rd edition. Sandy (OR): Eclectic Medical Publications.

EMA/HMPC/456845/2009. Community Herbal Monograph on *Curcuma longa* L., rhizome. London (GB): European Medicines Agency: Committee on Herbal Medicinal Products (HMPC); 12 November 2009.



[Accessed 2018 June 21] Available from:

http://www.ema.europa.eu/docs/en_GB/document_library/Herbal_-_Community_herbal_monograph/2010/02/WC500070703.pdf

ESCOP 2003: ESCOP Monographs: The Scientific Foundation for Herbal Medicinal Products, 2nd edition. 2003. Exeter (GB): European Scientific Cooperative on Phytotherapy and Thieme.

Kapoor LD. 2001. Handbook of Medicinal Ayurvedic Medicinal Plants. Boca Raton (FL): CRC press LLC.

McGuffin M, Hobbs C, Upton R, Goldberg A, editors. 1997. American Herbal Products Association's Botanical Safety Handbook. Boca Raton (FL): CRC Press.

McGuffin M, Kartesz JT, Leung AY, Tucker AO, editors. 2000. Herbs of Commerce, 2nd edition. Silver Spring (MD): American Herbal Products Association.

Mills S, Bone K. 2000. Principles and Practice of Phytotherapy. Toronto (ON): Churchill Livingstone.

Mills S, Bone K. 2005. The Essential Guide to Herbal Safety. St. Louis (MO): Elsevier Churchill Livingstone.

Murthy KRS. 2004. Bhavaprakasha of Bhavmisra, Volume 1. Varanasi (IND): Chowkhamba Krishnadas Academy.

Paranjpe P. 2005. Indian Medicinal Plants- Forgotten Healers (A Guide to Ayurvedic Herbal Medicine). Delhi (IND): Chaukhamba Sanskrit Pratishtan.

PPRC 2005: Pharmacopoeia of the People's Republic of China, Volume 1, English edition 2005. Beijing (CN): The State Pharmacopoeia Commission of the People's Republic of China.

USDA 2018: United States Department of Agriculture, Agricultural Research Service, National Genetics Resource Program. Germplasm Resources Information Network (GRIN) [online database]. *Curcuma longa* L. Beltsville (MD): National Germplasm Resources Laboratory. [Accessed 2018 June 1]. Available from: <https://npgsweb.ars-grin.gov/gringlobal/taxon/taxonomysimple.aspx>

WHO 1999: World Health Organization. WHO monographs on selected medicinal plants, Volume 1. Geneva (CHE): World Health Organization.



Wichtl M, editor. 2004. Herbal Drugs and Phytopharmaceuticals: A Handbook for Practice on a Scientific Basis, 3rd edition. Stuttgart (DE): Medpharm GmbH Scientific Publishers.

Williamson EM. 2002. Major Herbs of Ayurveda. Edinburgh (GB): Churchill Livingstone.

Williamson EM. 2003. Potter's Herbal Cyclopaedia: The Authoritative Reference work on Plants with a Known Medical Use. Saffron Walden (GB): The C.W. Daniel Company Limited.

Winston D, Kuhn MA. 2008. Winston and Kuhn's Herbal Therapy and Supplements. A Scientific and Traditional Approach, 2nd edition. Philadelphia (PA): Lippincott Williams and Wilkins.

Wren RC. 1907. Potter's Cyclopaedia of Botanical Drugs and Preparations. London (GB): Potter and Clark.

References reviewed

Aggarwal BB, Goel A, Kunnumakkara AB. 2008. Curcumin as "Curecumin": From kitchen to clinic. *Biochemical Pharmacology* 75:787-809.

Araújo CA, Leon LL. 2001. Abstract: Biological activities of *Curcuma longa* L. *Mem Inst Oswaldo Cruz* 96(5):723-728.

Deodhar SD, Sethi R, Srimal RC. 1980. Preliminary studies on antirheumatic activity of curcumin (di-feruloyl methane). *Indian Journal of Medical Research* 71:632-634.

Felter HW. 1983. *The Eclectic Materia Medica, Pharmacology and Therapeutics*. Sandy (OR): Eclectic Medical Publications [Reprint of 1922 original].

Felter HW, Lloyd JU. 1983. *King's American Dispensary, Volume 2*, 18th edition. Sandy (OR): Eclectic Medical Publications [Reprint of 1898 original].

Funk JL, Oyarzo JN, Frye JB, Chen G, Lantz RC, Jolad SD, Sólyom AM, Timmermann BN. 2006. Turmeric extracts containing curcuminoids prevent experimental rheumatoid arthritis. *Journal of Natural Products* 69(3):351-355.

Gerard J. 1975. *The Herbal or General History of Plants. The Complete 1633 Edition as Revised and Enlarged by Thomas Johnson*. NY (NY): Dover Publications.

Grieve M. 1971. *A Modern Herbal, Volume 2*. New York (NY): Dover Publications [Reprint of 1931 Harcourt, Brace & Company publication].



Hatcher H, Planalp R, Cho J, Torti FM, Torti SV. 2008. Curcumin: From ancient medicine to current clinical trials. *Cellular and Molecular Life Sciences* 65:1631-1652.

Hoffmann D. 2003. *Medical Herbalism: The Science and Practice of Herbal Medicine*. Rochester (VT): Healing Arts Press.

Jurenka JS. 2009. Anti-inflammatory properties of curcumin, a major constituent of *Curcuma longa*: a review of preclinical and clinical research. *Alternative Medicine Review* 14(2):141-153.

Khory RN, Katrak NN. 1999. *Materia Medica of India and their Therapeutics*. Delhi (IN): Komal Prakashan.

Kiso Y, Suzuki Y, Watanabe N, Oshima Y, Hikino H. 1983. Antihepatotoxic principles of *Curcuma longa* rhizomes. *Journal of Medicinal Plant Research* 49:185-187.

Kohli K, Ali J, Ansari J, Raheman Z. 2005. Curcumin: a natural antiinflammatory agent. *Indian Journal of Pharmacology* 37(3):141-147.

Kulkarni RR, Patki PS, Jog VP, Gandage SG, Patwardhan B. 1991. Treatment of osteoarthritis with a herbomineral formulation: a double-blind, placebo-controlled, cross-over study. *Journal of Ethnopharmacology* 33:91-95.

Mills S. 1985. *The Dictionary of Modern Herbalsim*. Wellingborough (GB): Thorsons Publishers Ltd.

Moerman DE. 1998. *Native American Ethnobotany*. Portland (OR): Timber Press.

Rivera-Espinoza Y, Muriel P. 2009. Pharmacological actions of curcumin in liver diseases or damage. *Liver International* 29(10):1457-1466.

Satoskar RR, Shah SJ, Shenoy SG. 1986. Evaluation of anti-inflammatory property of curcumin (diferuloyl methane) in patients with postoperative inflammation. *International Journal of Clinical Pharmacology, Therapy and Toxicology* 24(12):651-654.

Srimal R, Dhawan B. 1973. Pharmacology of diferuloyl methane (curcumin), a non-sterodal antiinflammatory agent. *Journal of Pharmacy and Pharmacology* 25:447-452.