QUERCETIN

This monograph is intended to serve as a guide to industry for the preparation of Product Licence Applications (PLAs) 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 label at the applicant’s discretion.
▸ The solidus (/) indicates that the terms and/or the statements are synonymous. Either term or statement may be selected by the applicant.

Date
November 27, 2012

Proper name(s)

▸ 2-(3,4-dihydroxyphenyl)-3,5,7-trihydroxy-4H-1-benzopyran-4-one (Ph.Eur. 2013; ChemID 2012; Merck 2012, Martindale 2011)
▸ 2-(3,4-dihydroxyphenyl)-3,5,7-trihydroxychromen-4-one (PubChem 2012)
▸ 3,3’,4’,5,7-pentahydroxyflavone (ChemID 2012; Merck 2012; Martindale 2011)

Common name(s)
quercetin (ChemID 2012; Merck 2012)

Source material(s)

▸ quercetin (Merck 2012; Martindale 2011)
▸ quercetin isolate from one or more of the following plant sources:
  • Apple - Malus domestica Borkh. (Rosaceae), pericarp (Duke 1992)
  • Ash, Mountain/ Rowan - Sorbus aucuparia L. (Rosaceae), fruit (Häkkinen et al. 1999)
  • Bilberry/ Whortleberry/ Bog whortleberry/ Myrtle blueberry/ Myrtle whortleberry - Vaccinium myrtillus L. (Ericaceae), fruit (Erlund et al. 2003; Häkkinen et al. 1999)
  • Black currant - Ribes nigrum L. (Grossulariaceae), fruit (Erlund et al. 2003)
  • Brussels sprouts - Brassica oleracea L. var. gemmifera (DC) (Brassicaceae), sprout (Duke 1992)
  • Buckthorn, Sea - Hippophae rhamnoides L. (Elaeagnaceae), fruit (Häkkinen et al. 1999)
• Cabbage, Red/White cabbage - Brassica oleracea L. var. capitata L. (Brassicaceae), leaf (Duke 1992)
• Cauliflower - Brassica oleracea L. var. botrytis L. (Brassicaceae), flower (Duke 1992)
• Chives - Allium schoenoprasum L. (Amaryllidaceae), leaf (Duke 1992)
• Chokecherry - Prunus virginiana L. (Rosaceae), fruit (Häkkinen et al. 1999)
• Cranberry/american cranberry/ Large cranberry - Vaccinium macrocarpon Aiton (Ericaceae), fruit (Häkkinen et al. 1999; Duke 1992)
• Crowberry - Empetrum spp. L. (Empetraceae), fruit (Häkkinen et al. 1999)
• Evening-primrose - Oenothera biennis L. (Onagraceae), leaf (Duke 1992)
• Garlic - Allium sativum L. (Amaryllidaceae), bulb (Duke 1992)
• Himalayan mayapple - Podophyllum hexandrum Royle (Berberidaceae), rhizome (Duke 1992)
• Japanese pagoda tree - Styphnolobium japonicum L. (Fabaceae), flower (Kite et al. 2007)
• Kale, Curly/Kitchen Kale/Scotch Kale - Brassica oleracea L. var. sabellica L. (Brassicaceae), leaf (Duke 1992)
• Kohlrabi - Brassica oleracea L. var. gongylodes L. (Brassicaceae), shoot (Duke 1992)
• Lingonberry - Vaccinium vitis-idaea L. (Ericaceae), fruit (Erlund et al. 2003; Häkkinen et al. 1999)
• Mayapple/american mandrake - Podophyllum peltatum L. (Berberidaceae), resin/exudate/sap (Duke 1992)
• Neem/ bead tree/ Margosa - Azadirachta indica A. Juss. (Meliaceae), flower (Duke 1992)
• Oat - Avena sativa L. (Poaceae), straw (Duke 1992)
• Onion/ shallot - Allium cepa L. (Amaryllidaceae), bulb (Duke 1992)
• Pear - Pyrus communis L. (Rosaceae), pericarp (Duke 1992)
• Pepper, Hot/ Capsicum/ Cayenne/ Red chili/ Tabasco - Capsicum frutescens L. (Solanaceae), fruit (Duke 1992)
• Spinach - Spinacia oleracea L. (Chenopodiaceae), leaf (Duke 1992)
• Sunflower - Helianthus annuus L. (Asteraceae), flower (Duke 1992)
• Tea - Camellia sinensis (L.) Kuntze (Theaceae), leaf (Duke 1992)

Route(s) of administration

oral

Dosage form(s)

▸ The acceptable pharmaceutical dosage forms include, but are not limited to capsules, chewables (e.g. gummies, tablets), liquids, powders, strips or tablets.
▸ This monograph is not intended to include foods or food-like dosage forms such as bars, chewing gums or beverages.
Use(s) or Purpose(s) Statement(s) to the effect of:

- An antioxidant (Merck 2012; Martindale 2011; Murray and Bongiorno 2006; Harborne et al. 1999).

- Used in Herbal Medicine as a capillary/ blood vessel protectant (Merck 2012; Martindale 2011; PDR 2008; Murray and Bongiorno 2006; Harborne et al. 1999).

Note
A claim for traditional use must include the term “Herbal Medicine”.

Dose(s) Statement(s) to the effect of

Subpopulation(s)

adults (≥ 19 years)

Quantity(ies)

Antioxidant:
Up to 1200 mg quercetin, per day (NS 2012; Wang et al. 2009; Boots et al. 2008; PDR 2008; Erlund et al. 2003; Lamson and Brignall 2000; Hakkinen et al. 1999).

Capillary/ blood vessel protectant:
600-1200 mg quercetin, per day (PDR 2008; Murray and Bongiorno 2006).

Directions for use

Products providing 40-1200 mg quercetin, per day (Harwood et al. 2007):
- Take in 2 or 3 divided doses.
- Take with food/meals.

Duration of use Statement(s) to the effect of:

Products providing 40-1200 mg quercetin, per day:
For use beyond 12 weeks, consult a healthcare practitioner (NS 2012; Harwood et al. 2007; Boyle et al. 2000).

Risk information Statement(s) to the effect of

Caution(s) and warning(s)
Products providing 40-1200 mg quercetin, per day:
If pregnant or breastfeeding, consult a health care practitioner prior to use.

**Contraindication(s)**

No statement required.

**Known adverse reaction(s)**

No statement required.

**Storage conditions**

Statement(s) to the effect of
Store in a light-resistant container (Ph.Eur. 2013).

**Non-medicinal ingredients**

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

**Specifications**

- The finished product must comply with the minimum specifications outlined in the current NHPD *Compendium of Monographs*.
- The medicinal ingredient must comply with the requirements outlined in the *Natural Health Products Ingredients Database* (NHPID). In addition, the medicinal ingredient may comply with the quality specifications outlined in the Quercetin dihydrate monograph in the British and European Pharmacopoeias.

**References cited**


Kite GC, Stoneham CA, Veitch NC. Flavonol tetr glycosides and other constituents from leaves of *Styphnolobium japonicum* (Leguminosae) and related taxa. Phytochemistry 2007;68(10):1407-1416.


References reviewed


Longanga OA, Vercruysse A, Foriers A. Contribution to the ethnobotanical, phytochemical and pharmacological studies of traditionally used medicinal plants in the treatment of dysentery and


