

Cognitive function products

Source: [https://webprod.hc-sc.gc.ca/nhp/nd-bdipsn/atReq?atid=fonc.cognitive.func2\(=eng](https://webprod.hc-sc.gc.ca/nhp/nd-bdipsn/atReq?atid=fonc.cognitive.func2(=eng)

Extracted: 2025-08-26T06:37:15.677006

Cognitive Function Products Help on accessing alternative formats, such as Portable Document Format (PDF), Microsoft Word and PowerPoint (PPT) files, can be obtained in the alternate format help section. (PDF Version - 299 KB) 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 label at the applicant's discretion. The solidus (/) indicates that either term and/or statement may be selected on the label. Date July 25, 2025

Proper name(s), Common name(s), Source information Table 1.1. Proper name(s), Common name(s), Source information for ingredients with nervine action Proper name(s) Common name(s) Source information Source ingredient(s) Source material(s) Part(s) Preparation(s) Anemone pulsatilla European pasqueflower Pasqueflower Pulsatilla N/A Anemone pulsatilla Herb top Dry 1 Avena sativa Common oat Oat Red oat Side oat Tree oat N/A Avena sativa Seed Herb top Dry Hypericum perforatum Goatweed Hypericum St. John's wort St. John's-wort N/A Hypericum perforatum Herb top Dry 5-Hydroxy-L-tryptophan L-5-Hydroxytryptophan L-5-HTP L-5-Hydroxytryptophan N/A Griffonia simplicifolia 2 Seed N/A N/A Saccharomyces cerevisiae 2 Whole cell for biosynthesis N/A N/A Escherichia coli 2 Whole cell for biosynthesis N/A L-5-HTP 3 N/A N/A N/A Nepeta cataria Catmint Catnep Catnip Catswort Field balm N/A Nepeta cataria Herb top Dry Matricaria chamomilla Blue chamomile Chamomile Common chamomile German chamomile Hungarian chamomile Matricaria Scented chamomile Scented mayweed Sweet false chamomile True chamomile Wild chamomile N/A Matricaria chamomilla Flower Dry Melissa officinalis Balm Bee balm Lemon balm Melissa N/A Melissa officinalis Herb top Dry Panax quinquefolius American ginseng Occidental ginseng Sang Shang Xi yang shen N/A Panax quinquefolius Root Dry Scutellaria lateriflora Helmet flower Hoodwort Mad-dog scullcap Quarter bonnet Scullcap Skullcap Virginian skullcap N/A Scutellaria lateriflora Herb top Dry Stachys officinalis Bishop's-wort Purple betony Wood betony N/A Stachys officinalis Herb top Dry Tilia cordata Linden Littleleaf linden Small-leaf European linden Small-leaf lime Small-leaf lime tree Small-leaf linden Tilia N/A Tilia cordata Flower Dry Tilia platyphyllos Big-leaf linden Broadleaf lime Large-leaf lime Large-leaf linden Linden Tilia N/A Tilia platyphyllos Flower Dry Tilia x europaea European Lime tree European linden Lime Lime tree Linden Tilia N/A Tilia x europaea Flower Dry Turnera diffusa Damiana N/A Turnera diffusa Leaf Leaf and stem Dry Withania somnifera Asgandh Ashwagandha Asvagandha Winter-cherry Withania N/A Withania somnifera Root Dry

References: Proper names: NHPID 2025; Common names: NHPID 2025; Source information: EMA 2008; Bone 2003; Hoffman 2003; Lemaire and Adosraku 2002; API 2001; Bradley 1992; Williamson et al. 1988; BHP 1983; Fellows and Bell 1970; Remington and Wood 1918; BPC 1911. 1 Do not use the fresh plant (Bone 2003; Hoffman 2003; Bradley 1992; BHP 1983). 2 Isolate 3 Synthetic

Table 1.2. Proper name(s), Common name(s), Source information for ingredients with sedative action Proper name(s) Common name(s) Source information Source material(s) Part(s) Preparation(s) Eschscholzia californica California-poppy Eschscholzia californica Herb top Herb top flowering Dry Humulus lupulus Bine European hop Hop Hops Humulus lupulus Strobile Dry Passiflora incarnata Apricot-vine Maypop Maypop passionflower Passionflower Passiflora incarnata Herb top Dry Valeriana officinalis Common valerian Garden-heliotrope Garden valerian Valerian Valeriana officinalis Root Root and rhizome Dry

References: Proper names: NHPID 2025; Common names: NHPID 2025; Source information: Hoffman 2003; Williamson et al. 1988. Table 1.3. Proper name(s), Common name(s), Source information for ingredients with cognitive support action Proper name(s) Common name(s) Source information Source ingredient(s) Source material(s) Organism group(s) Part(s) Preparation(s) (2R)-2-(Acetyloxy)-3-carboxy-N,N,N-trimethyl-1-propanaminium inner salt Acetylcarnitine Acetyl-L-carnitine arginate dihydrochloride 2 Acetyl L-carnitine hydrochloride 1 N/A N/A N/A N/A Bacopa monnieri Bacopa Moneywort Water hyssop N/A Bacopa monnieri N/A Herb top Whole plant Dry 2-[[[(2R)-2,3-Dihydroxypropoxy]hydroxyphosphinyl]oxy]-N,N,N-trimethylethanaminium hydroxide • inner salt d-Choline hydroxide 2,3-dihydroxypropylhydrogen phosphate inner salt L-alpha-Glycerolphosphorylcholine Choline alfoscerate Choline alfoscerate 1 N/A N/A N/A N/A Choline cytidine 5'-pyrophosphate (ester) Cytidine 5'-(trihydrogen diphosphate) P'-[2(trimethylammonio)ethyl] ester inner salt Cytidine 5'-diphosphocholine Citicoline Citicoline sodium 1 Citicoline 1 N/A N/A N/A N/A Cod liver oil Cod liver oil Lecoris Aselli Oleum N/A

N/A Gadidae 3 Liver N/A Eleutherococcus senticosus Ci wu jia Eleuthero Siberian ginseng N/A Eleutherococcus senticosus N/A Root Dry Fish oil Fish oil N/A N/A Ammodytidae Carangidae Clupeidae Engraulidae Gadidae 3 Osmeridae Salmonidae Scombridae Whole N/A Ginkgo biloba Ginkgo Ginkgo biloba Maidenhair tree Baiguo Icho N/A Ginkgo biloba N/A Leaf N/A Panax ginseng Asian ginseng Chinese ginseng Hong shen Korean ginseng Korean red ginseng Oriental ginseng Panax ginseng Red ginseng Ren shen N/A Panax ginseng N/A Root Rootlet Dry Phosphatidylserine Phosphatidylserine N/A Helianthus annuus 2 N/A Seed N/A Phosphatidylserine-enriched soy lecithin 1 N/A N/A N/A N/A Phosphatidylserine 1 N/A N/A N/A N/A Rhodiola rosea Hong jing tian King's-crown Rhodiola Roseroot N/A Rhodiola rosea N/A Root Root and rhizome Dry Schizochytrium spp. Schizochytrium Oil N/A Schizochytrium spp. N/A Whole N/A (S)-alpha-Amino-4-hydroxybenzenepropanoic acid L-Tyrosine L-Tyrosine Tyrosine L-Tyrosine ethyl ester 1 N-Acetyl-L-tyrosine 1 N/A N/A N/A N/A Withania somnifera Asgandh Ashwagandha Asvagandha Winter-cherry Withania N/A Withania somnifera N/A Root Dry References: Proper names: NHPID 2025; Common names: NHPID 2025; Source information: NHPID 2025; Yurko-Mauro et al. 2010; Calabrese et al. 2008; Bone 2003; De Jesus Moreno Moreno 2003; API 2001; Parnetti et al. 2001; Barbagallo et al. 1994; Parnetti et al. 1993; Canal et al. 1991. 1 Synthetic 2 Isolate 3 For cod liver oil and fish oil, the species common name can be listed as source information on the label instead of the organism group. Fish oil corresponds to oil from the whole body of one or more of species of the families listed in the table in its natural and/or concentrated triglyceride/triacylglycerol form and/or its concentrated esterified form. Table 1.4. Proper name(s), Common name(s), Source information for caffeine and ingredients containing caffeine Proper name(s) Common name(s) Source information Source ingredient(s) Source material(s) Part(s) Preparation(s) 1,3,7-Trimethylxanthine 3,7-Dihydro-1,3,7-trimethyl-1H-purine-2,6-dione Caffeine Caffeine 1 Caffeine citrate 1 N/A N/A N/A N/A Camellia sinensis 2 Leaf N/A N/A Coffea arabica 2 Coffea canephora 2 Seed N/A N/A Cola acuminata 2 Seed N/A N/A Ilex paraguariensis 2 Ilex guayusa 2 Leaf N/A N/A Paullinia cupana 2 Seed N/A N/A Theobroma cacao 2 Seed N/A Ilex paraguariensis Brazilian tea Mate Paraguayan tea Paraguay tea St Bartholomew's tea Yerba mate N/A Ilex paraguariensis Leaf Dry Paullinia cupana Guarana N/A Paullinia cupana Seed Dry References: Proper names: NHPID 2025; Common names: NHPID 2025; Source information: EMA 2013; ESCOP 2009; Bradley 2006; Kennedy et al. 2004; Taylor 2003; Barnes et al. 2002; BHP 1983. 1 Synthetic 2 Isolate. If caffeine is sourced from Camellia sinensis, Coffea arabica, Coffea canephora, Cola acuminata, Ilex paraguariensis, Ilex guayusa, Paullinia cupana or Theobroma cacao , it must be isolated and purified. Extracts of Ilex paraguariensis and Paullinia cupana must be represented separately. This monograph does not support extracts of Camellia sinensis, Coffea arabica, Coffea canephora, Cola acuminata, Ilex guayusa or Theobroma cacao . Table 1.5. Proper name(s), Common name(s), Source information for ingredients with relaxation action Proper name(s) Common name(s) Source information Source ingredient(s) Source material(s) Part(s) 4-Aminobutanoic acid GABA gamma-Aminobutyric acid N/A Lentilactobacillus hilgardii 2 Whole cell for biosynthesis N/A Levilactobacillus brevis 2 Whole cell for biosynthesis N/A Laminaria japonica 2 Whole 4-Aminobutanoic acid 1 N/A N/A L-Theanine N-Ethyl-L-glutamine L-Theanine N/A Camellia sinensis 2 Leaf L-Theanine 1 N/A N/A References: Proper names: NHPID 2025; Common names: NHPID 2025; Source information: Kanehira et al. 2011; Abdou et al. 2006; Yamakoshi et al. 2006. 1 Synthetic 2 Isolate Table 1.6. Proper name(s), Common name(s), Source information for ingredients with adaptogen action Proper name(s) Common name(s) Source information Source material(s) Part(s) Preparation Asparagus racemosus Shatamuli Shatavari Asparagus racemosus Root Dry Astragalus membranaceus Astragalus Huangqi Huang qi Membranaceous milk vetch Membranous milk-vetch Milk vetch root Mo jia huang qi Astragalus membranaceus Root Dry Eleutherococcus senticosus Ci wu jia Eleuthero Siberian ginseng Eleutherococcus senticosus Root Root and rhizome Dry Ganoderma lucidum Ganoderma Ling zhi Reishi Ganoderma lucidum Cultured mycelium fruiting body Mycelium Dry Glycyrrhiza glabra Guang guo gan cao Licorice Liquorice Glycyrrhiza glabra Root Root and stolon Dry Ocimum tenuiflorum Holy basil Rama tulsi Sacred basil Tulsi Ocimum tenuiflorum Leaf Dry Panax ginseng Asian ginseng Chinese ginseng Hong shen Korean ginseng Korean red ginseng Oriental ginseng Panax ginseng Red ginseng Ren shen Panax ginseng Root Rootlet Dry Panax quinquefolius American ginseng Occidental ginseng Sang Shang Xi yang shen Panax quinquefolius Root Dry Rhodiola rosea Hong jing tian King's-crown Rhodiola Roseroot Rhodiola rosea Root Root and rhizome Dry Schisandra chinensis Chinese Magnoliavine Schisandra Wu wei zi Schisandra chinensis Fruit Dry Tinospora cordifolia Guduchi Tinospora cordifolia Stem Dry Withania somnifera Asgandh Ashwagandha Asvagandha Winter-cherry Withania Withania somnifera Root Whole plant Dry References: Proper names: NHPID 2025; Common names: NHPID 2025; Source information: Upton 2012; Winston and Kuhn 2008; Winston and Maimes 2007; WHO 2004; Bone 2003; Hoffman 2003; Thomsen 2002; Williamson 2002; API 2001; Blumenthal et al. 2000; Upton 1999; WHO 1999; Bradley 1992; BHP 1983. Table 1.7. Proper name(s), Common name(s), Source information for complementary ingredients Proper name(s) Common name(s) Source information Source ingredient(s) Source material(s) Part(s) Preparation(s) [5R-(5alpha,9beta, 11E)]-5-Amino-11-ethylidene-5,6,9, 1-tetrahydro-7-methyl-5,9-methano cycloocta [b]pyridine-2(1H)-one Huperzine A N/A Huperzia serrata 2 Whole

plant Dry Huperzine A 1 N/A N/A N/A 7,9-Dihydro-1,3,7,9-tetramethyl-1H-purine-2,6,8(3H)-trione Theacrine N/A
 Camellia sinensis 2 Leaf Dry Theobroma grandiflorum 2 Fruit Dry Theacrine 1 N/A N/A N/A
 3,7-Dihydro-3,7-dimethyl-1H-purine-2,6-dione 3,7-Dimethylxanthine Theobromine N/A Theobroma cacao 2
 Seed Dry Theobromine 1 N/A N/A N/A Huperzia serrata Toothed club-moss Toge-shiba N/A Huperzia serrata
 Whole plant Dry References: Proper names: NHPID 2025; Common names: NHPID 2025; Source information:
 NHPID 2025; Martinez-Pinilla et al. 2015; Ma et al. 2007; Kihlman 1977. 1 Synthetic 2 Isolate Route of
 Administration Oral 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 oral use are indicated in
 the dosage form drop-down list of the web-based Product Licence Application form for Compendial
 applications. Use(s) or Purpose(s) Refer to Tables 2.1 to 2.6. below. Notes: The recommended uses can be
 combined on the product label if from the same traditional or non-traditional system of medicine. The terms
 'Helps' or 'Helps to' can be used interchangeably on the label. Dose(s) Subpopulation(s) Adults 18 years and
 older Quantity(ies) Refer to Tables 2.1 to 2.7. below. Note: Methods of preparation: Solvents allowed for the
 methods of preparation, Non-Standardized Extracts "Dry extract" and Non-Standardized Ethanolic Extracts "Dry
 extract" as part of this monograph are ethanol and/or water only, unless otherwise specified. For
 Non-Standardized Aqueous Extracts "Dry extract", water is the only solvent allowed. Table 2.1. Cognitive
 function uses or purposes and associated daily doses for ingredients with nervine action Uses or Purposes 1
 Medicinal Ingredients Methods of preparation Doses/day 2 (Traditionally) used in Herbal Medicine to help
 relieve restlessness and/or nervousness (nervine/calmlative) Anemone pulsatilla (Pasqueflower) Dry,
 Powdered, Non-Standardized Ethanolic Extracts (Dry extract, Tincture, Fluid extract) 0.03-0.6 grams dried herb
 top, per day Non-Standardized Aqueous Extracts (Dry extract, Decoction, Infusion) 0.1-0.9 grams dried herb
 top, per day Avena sativa (Oat) Dry, Powdered, Non-Standardized Ethanolic Extracts (Dry extract, Tincture,
 Fluid extract) 0.6-20 grams dried seed, per day 3 grams dried herb top, per day Nepeta cataria (Catnip) Dry,
 Powdered, Non-Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion) 1.2-12 grams
 dried herb top, per day Panax quinquefolius (American ginseng) Dry, Powdered, Non-Standardized Extracts
 (Dry extract, Tincture, Fluid extract, Decoction, Infusion) 0.5-12 grams dried root, per day Tilia cordata
 (Small-leaf linden) Dry, Powdered, Non-Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction,
 Infusion) 1.5-12 grams dried flower, per day Tilia platyphyllos (Large-leaf linden) Dry, Powdered,
 Non-Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion) 1.5-12 grams dried flower,
 per day Tilia x europaea (European Linden) Dry, Powdered, Non-Standardized Extracts (Dry extract, Tincture,
 Fluid extract, Decoction, Infusion) 1.5-12 grams dried flower, per day Turnera diffusa (Damiana) Dry,
 Powdered, Non-Standardized Ethanolic Extracts (Dry extract, Tincture, Fluid extract) 1.5-4 grams dried leaf/leaf
 and stem, per day (Traditionally) used in Herbal Medicine to help relieve restlessness and/or nervousness
 (nervine/calmlative) Hypericum perforatum (St. John's wort) Dry, Powdered, Non- Standardized Extracts (Dry
 extract, Tincture, Fluid extract, Decoction, Infusion) 2-12.6 grams dried herb top, per day; Not to exceed 4.2
 grams per single dose Used in Herbal Medicine to help relieve restlessness and/or nervousness
 (nervine/calmlative) AND/OR (Used in Herbal Medicine to) help(s) relieve sleep disturbances associated with
 mood imbalance Standardized Extracts (Dry extract) 600-1800 milligrams of dried herb top extract, per day,
 standardized to 3-6% hyperforin and/or 0.12- 0.28% hypericin; Not to exceed 600 milligrams of extract per
 single dose Helps (to) relieve sleep disturbances associated with mood imbalance L-5-Hydroxytryptophan
 (L-5-HTP) N/A 100-200 milligrams, per day (Traditionally) used in Herbal Medicine to help relieve restlessness
 and/or nervousness (which helps to promote sleep) (nervine/calmlative) Matricaria chamomilla (German
 chamomile) Dry, Powdered, Non- Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction,
 Infusion) 1.5-24 grams dried flower, per day Melissa officinalis (Lemon balm) Dry, Powdered, Non-
 Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion) 0.4-13.5 grams dried herb top,
 per day Scutellaria lateriflora (Skullcap) Dry, Powdered, Non- Standardized Ethanolic Extracts (Dry extract,
 Tincture, Fluid extract) 0.25-12 grams dried herb top, per day Non-Standardized Aqueous Extracts (Dry extract,
 Decoction, Infusion) 3-12 grams dried herb top, per day Stachys officinalis (Wood betony) Dry, Powdered, Non-
 Standardized Ethanolic Extracts (Dry extract, Tincture, Fluid extract) 2-4 grams dried herb top, per day
 Traditionally used in Ayurveda to balance aggravated Vata (nervine) AND/OR Traditionally used in Ayurveda to
 help relieve restlessness and/or nervousness (which helps (to) promote sleep). Withania somnifera
 (Ashwagandha) Dry, Powdered, Non-Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction,
 Infusion) 2-6 grams dried root, per day 1 References consulted for the uses or purposes: Sutanto et al. 2024;
 ESCOP 2009; Bradley 2006; Bone 2003; Hoffman 2003; Barnes et al. 2002; Kapoor 2001; Blumenthal et al.
 2000; Upton 2000; Wheatley 1999; Poldinger et al. 1991; Williamson et al. 1988; Ellingwood 1983; Felter and
 Lloyd 1983; Soullairac and Lambinet 1977; Grieve 1971. 2 References consulted for the doses: Sutanto et al.
 2024; CNF 2023; EMA 2008; Angheliescu et al. 2006; Bone 2003; Hoffman 2003; API 2001; Kapoor 2001;
 Blumenthal et al. 2000; Bradley 1992; Williamson et al. 1988; BHP 1983; Ellingwood 1983; Felter and Lloyd
 1983; Soullairac and Lambinet 1977; Remington and Wood 1918; BPC 1911. Table 2.2. Cognitive function uses

or purposes and associated daily doses for ingredients with sedative (soporific) action Uses or Purposes 1 Medicinal Ingredients Methods of preparation Doses/day 2 (Traditionally) used in Herbal Medicine as a sleep aid (during times of mental stress). AND/OR (Traditionally) used in Herbal Medicine to help relieve restlessness and/or nervousness (calmative). *Eschscholzia californica* (California-poppy) Dry, Powdered, Non-Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion) 0.2-3 grams dried herb top (flowering), per day *Humulus lupulus* (Hops) Dry, Powdered, Non-Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion) 0.5-6 grams dried strobile, per day *Passiflora incarnata* (Passionflower) Dry, Powdered, Non-Standardized Ethanolic Extracts (Dry extract, Tincture, Fluid extract) 0.25-8 grams dried herb top, per day Non-Standardized Aqueous Extracts (Dry extract, Decoction, Infusion) 1-8 grams dried herb top, per day (Traditionally used in Herbal Medicine as a sleep aid/(to) help(s) to promote sleep. AND/OR (Traditionally) used in Herbal Medicine to relieve restlessness and/or nervousness (calmative) *Valeriana officinalis* (Valerian) Dry, Powdered, Non-Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion) 0.3-12 grams dried root/root and rhizome, per day; Not to exceed 3.6 grams per single dose Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion) 0.3-12 grams dried root/root and rhizome, per day 3 ; Not to exceed 3.6 grams per single dose and: 0.05-0.90% valerenic acid OR 0.10-0.90% sesquiterpenic acids 1 References consulted for the uses or purposes: Williamson et al. 1988; refer to respective single ingredient monographs. 2 References consulted for the doses: Williamson et al. 1988; refer to respective single ingredient monographs. 3 Note: For Valerian extracts standardized to valerenic acid or sesquiterpenic acids, the quantity dried equivalent and the extract ratio must be provided. Table 2.3. Cognitive function uses or purposes and associated daily doses for ingredients with with cognitive support action Uses or Purposes 1 Medicinal Ingredients Methods of preparation Doses/day 2 Helps support cognitive/brain health/function. *Acetylcarnitine* N/A 1.5-4 grams, per day *Bacopa monnieri* (Bacopa) Standardized Extracts (Dry extract) 300 milligrams dried whole plant/herb top extract, per day, standardized to 40-55% bacosides Cod liver oil Standardized fixed oil 18 years: 0.77-4 grams cod liver oil, per day And 150-1,360 milligrams EPA + DHA including at least 100 milligrams DHA, per day And 138-2,800 micrograms RAE (vitamin A), per day And 1.15-23.12 micrograms vitamin D3, per day 19 years and older: 0.77-4 grams cod liver oil, per day And 150-1,360 milligrams EPA + DHA including at least 100 milligrams DHA, per day And 138-3,000 micrograms RAE (Vitamin A), per day And 1.15-25 micrograms Vitamin D3, per day *L-alpha-Glycerophosphorylcholine* (Choline alfoscerate) N/A 1.2 grams, per day Fish oil Standardized fixed oil 150-5,000 milligrams EPA and DHA including at least 100 milligrams DHA, per day 3 *Phosphatidylserine* N/A 300 milligrams, per day *Schizochytrium* oil Standardized fixed oil 200-2,000 milligrams DHA, per day Helps (to) support memory *Bacopa monnieri* (Bacopa) Standardized Extracts (Dry extract) 300 milligrams dried whole plant/herb top extract, per day, standardized to 40- 55% bacosides Traditionally used in Ayurveda for memory enhancement *Bacopa monnieri* (Bacopa) Dry, Powdered, Non-Standardized Ethanolic Extracts (Dry extract, Tincture, Fluid extract) 1-6.5 grams dried whole plant/herb top, per day *Withania somnifera* (Ashwagandha) Dry, Powdered, Non-Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion) 2-6 grams dried root, per day Helps (to) improve sustained attention. *Citicoline* N/A 250-1000 milligrams per day; not to exceed 500 milligrams per single dose Helps (to) support cognitive health and/or brain function in older adults. N/A 500-1000 milligrams per day; not to exceed 500 milligrams per single dose Used in Herbal Medicine to help improve mental performance after periods of mental exertion *Eleutherococcus senticosus* (Eleuthero) Dry, Powdered, Non-Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion) 0.91-6 grams dried root, per day Helps (to) enhance cognitive function and/or memory in adults *Ginkgo biloba* (Ginkgo) Standardized Extracts (Dry extract) 80-240 milligrams of extract, per day (quantity crude equivalent 4 - 12 g of dried leaves, per day) providing at least 80 milligrams of extract per single dose and standardized to: 22-27% flavonoid glycosides And 5-7% terpene lactones (Used in Herbal Medicine to) help(s) support cognitive function and/or reduce mental fatigue (in cases of mental stress) AND/OR Helps support cognition *Panax ginseng* (Panax ginseng) Dry, Powdered, Non-Standardized Extracts (Dry extract, Tincture, Fluid Extract, Decoction, Infusion) 0.5-9 grams dried root/rootlet, per day Standardized Extracts (Dry extract) 200-600 milligrams of extract, per day; standardized to 4-7% total ginsenosides; Not to exceed a quantity crude equivalent of 9 grams of dried root/rootlet, per day (Used in Herbal Medicine) (to) help(s) support cognitive function (such as mental focus and mental stamina) *Rhodiola rosea* (Rhodiola) Tincture 1.2-1.8 grams dried root/root and rhizome, per day Standardized Extracts (Dry extract) 144-680 milligrams of dried root/root and rhizome extract, per day; Not to exceed 200 milligrams per single dose and: 0.8-3% salidroside And/Or 1-6% rosavins Helps to decrease cognitive fatigue due to physically stressful situations (e.g. extended wakefulness, exposure to cold, excessive noise). *L-Tyrosine* N/A 10-20 grams, per day; Not to exceed 10 grams per single dose 1 References consulted for the uses or purposes: Nakazaki et al. 2021; McGlade et al. 2015, 2012; Morgan and Stevens 2010; Yurko-Mauro et al. 2010; Barbhaiya et al. 2008; Calabrese et al. 2008; Malaguanera et al. 2008; Stough et al. 2008; Raghav et al. 2006; Murthy 2004; De Jesus Moreno Moreno 2003; Roodenrys et al. 2002; API 2001; Parnetti et al. 2001; Stough et al. 2001; Thal et al. 2000; Upton 2000; Neri et al. 1995; Barbagallo et al. 1994; Pettegrew et al. 1994;

Parnetti et al. 1993; Sano et al. 1992; Canal et al. 1991; Spagnoli et al. 1991. 2 References consulted for the doses : Nakazaki et al. 2021; McGlade et al. 2015, 2012; Cotroneo et al. 2013; EFSA 2013; Jensen et al. 2010; Morgan and Stevens 2010; Quinn et al. 2010; Yurko-Mauro et al. 2010; Calabrese et al. 2008; Malaguanera et al. 2008; Mahoney et al. 2007; Bone 2003; De Jesus Moreno Moreno 2003; API 2001; Kapoor 2001; Parnetti et al. 2001; Stough et al. 2001; Thal et al. 2000; Barbagallo et al. 1994; Pettegrew et al. 1994; Parnetti et al. 1993; Sano et al. 1992; Canal et al. 1991; Spagnoli et al. 1991. 3 For fish oil including species of Gadidae as a source material, the vitamin A and D content should be tested to ensure that the daily maximum amounts meet the Multi-Vitamin/Mineral Supplements monograph for each age group. Table 2.4. Cognitive function uses or purposes and associated daily doses for caffeine and ingredients containing caffeine

Uses or Purposes	1 Medicinal Ingredients	Methods of preparation	Doses/day	2 Helps (temporarily) (to)
				promote alertness and wakefulness, and (to) enhance cognitive performance
				AND/OR Helps (temporarily) (to) relieve/reduce fatigue/tiredness
				AND/OR Helps (temporarily) (to) support/promote mental sharpness/alertness
1,3,7-Trimethylxanthine (Caffeine)	N/A	100-400 milligrams, per day and 100-200 milligrams per single dose		
Ilex paraguariensis (Yerba mate)	Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion)	Extract standardized to caffeine corresponding to a maximum Quantity Crude Equivalent of 6 grams dried leaf, per day; not exceeding 150 milligrams caffeine per day; and providing 100-150 milligrams caffeine per single dose		
Paullinia cupana (Guarana)	Standardized Ethanolic Extracts (Dry extract, Tincture, Fluid extract)	Extract standardized to caffeine corresponding to a maximum Quantity Crude Equivalent of 3 grams dried seed per day and not exceeding 200 milligrams caffeine per day; and providing 100-200 milligrams caffeine per single dose		
Used in Herbal Medicine to help temporarily promote alertness and wakefulness, and to enhance cognitive performance				
Ilex paraguariensis (Yerba mate)	Standardized Ethanolic Extracts (Dry extract, Tincture, Fluid extract)	Extract standardized to caffeine corresponding to a Quantity Crude Equivalent of 3-6 grams dried leaf, per day and not exceeding 150 milligrams caffeine per day		
	Standardized Aqueous Extracts (Dry extract, Decoction, Infusion)	Extract standardized to caffeine corresponding to a Quantity Crude Equivalent of 2-6 grams dried leaf, per day and not exceeding 150 milligrams caffeine per day		
		Paullinia cupana (Guarana)		
	Standardized Ethanolic Extracts (Dry extract, Tincture, Fluid extract)	Extract standardized to caffeine corresponding to a Quantity Crude Equivalent of 1-3 grams dried seed, per day and not exceeding 200 milligrams caffeine per day		

1 References consulted for the uses or purposes: EMA 2013; EMA 2010; ESCOP 2009; Bradley 2006; Christopher et al. 2005; Kennedy al. 2004; Taylor 2003; Barnes et al. 2002; Kamimori et al. 2000; Zwyghuizen- Doorenbos et al. 1990. 2 References consulted for the doses: Health Canada 2025; EMA 2013; Health Canada 2012; EMA 2010; ESCOP 2009; Bradley 2006; Taylor 2003. Table 2.5. Cognitive function uses or purposes and associated daily doses for ingredients with relaxation action

Uses or Purposes	1 Medicinal Ingredients	Methods of preparation	Doses/day	2 Helps (to)
				temporarily promote relaxation
4-Aminobutanoic acid (GABA)	N/A	50-3,000 milligrams, per day; Not to exceed 750 milligrams per single dose		
L-Theanine	N/A	200-250 milligrams, per day		

1 References consulted for the uses or purposes: Kanehira et al. 2011; Abdou et al. 2006. 2 References consulted for the doses: Kanehira et al. 2011; Powers et al. 2007; Yamakoshi et al. 2006. Table 2.6. Cognitive function uses or purposes and associated daily doses for ingredients with adaptogen action

Uses or Purposes	1 Medicinal Ingredients	Methods of preparation	Doses/day	2 Used in Herbal Medicine as an adaptogen to help increase energy and resistance to stress over time (e.g. in case of mental and physical fatigue related to stress)
Asparagus racemosus (Shatavari)	Dry, Powdered, Non-Standardized Ethanolic Extracts (Dry extract, Tincture, Fluid extract)	2-6 grams dried root, per day		
Astragalus membranaceus (Astragalus)	Dry, Powdered, Non-Standardized Ethanolic Extracts (Dry extract, Tincture, Fluid extract)	2-4.8 grams dried root, per day		
Eleutherococcus senticosus (Eleuthero)	Dry, Powdered, Non-Standardized Ethanolic Extracts (Dry extract, Tincture, Fluid extract)	1-6 grams dried root/root and rhizome, per day		
	Non-Standardized Aqueous Extracts (Dry extract, Decoction, Infusion)	2-3 grams dried root/root and rhizome, per day		
Ganoderma lucidum (Reishi)	Dry, Powdered, Non-Standardized Ethanolic Extracts (Dry extract, Tincture, Fluid extract)	1.5-6 grams dried cultured mycelium/ fruiting body/mycelium, per day		
	Decoction, Decoction concentrate	3-15 grams dried cultured mycelium/ fruiting body/mycelium, per day		
	Standardized, Decoction concentrate	Standardized 3-15 grams dried cultured mycelium/ fruiting body/mycelium, per day and not to exceed 40 % polysaccharides		
Glycyrrhiza glabra (Licorice)	Dry, Powdered, Non-Standardized Ethanolic Extracts (Dry extract, Tincture, Fluid extract)	0.6-6 grams dried root/root and stolon, per day		
Ocimum tenuiflorum (Holy basil)	Dry, Powdered, Non-Standardized Ethanolic Extracts (Dry extract, Tincture, Fluid extract)	2-3 grams dried leaf, per day		
	Non-Standardized Aqueous Extracts (Dry extract, Decoction, Infusion)	4.2-28 grams dried leaf, per day		
Panax ginseng (Panax ginseng)	Dry, Powdered, Non-Standardized Extracts (Dry extract, Tincture, Fluid Extract, Decoction, Infusion)	0.5-9 grams dried root/ rootlet, per day		
	Standardized Extracts (Dry extract)	200-600 milligrams of extract, per day; standardized to 4-7% total ginsenosides; Not to exceed a quantity crude equivalent of 9 grams dried root/rootlet, per day		
Panax quinquefolius (American ginseng)	Dry, Powdered, Non-Standardized Ethanolic Extracts (Dry extract, Tincture, Fluid extract)	1-3 grams dried root, per day		
	Non-Standardized Aqueous Extracts (Dry extract, Decoction,			

Infusion) 6-9 grams dried root, per day; Not to exceed 3 grams per single dose *Rhodiola rosea* (*Rhodiola*) Non-Standardized Ethanolic Extracts (Dry extract) 144-400 milligrams of dry extract and a quantity crude equivalent of 216-2,000 milligrams dried root/root and rhizome, per day; Not to exceed 200 milligrams of dry extract and a QCE of 1 gram dried root/root and rhizome, per single dose Tincture 1.2-1.8 grams dried root/root and rhizome, per day Standardized Extracts (Dry extract) 144-680 milligrams of dried root/root and rhizome extract, per day; Not to exceed 200 milligrams per single dose and: 0.8 - 3% salidroside And/Or 1 - 6% rosavins *Schisandra chinensis* (*Schisandra*) Dry, Powdered, Non-Standardized Ethanolic Extracts (Dry extract, Tincture, Fluid extract) 1.2-6 grams dried fruit, per day Non-Standardized Aqueous Extracts (Dry extract, Decoction, Infusion) 1.5-6 grams dried fruit, per day *Tinospora cordifolia* (*Guduchi*) Dry, Powdered, Non-Standardized Ethanolic Extracts (Dry extract, Tincture, Fluid extract) 0.9-3 grams dried stem, per day Decoction, Decoction concentrate 20-30 grams dried stem, per day *Withania somnifera* (*Ashwagandha*) Dry, Powdered, Non-Standardized Ethanolic Extracts (Dry extract, Tincture, Fluid extract) 2.5-6.5 grams dried root/whole plant, per day (Used as an adaptogen) (to) help(s) (to) temporarily relieve symptoms of stress (such as mental fatigue and sensation of weakness) *Rhodiola rosea* (*Rhodiola*) Non-Standardized Ethanolic Extracts (Dry extract) 144-400 milligrams of dry extract and a Quantity Crude Equivalent (QCE) of 216-2,000 milligrams dried root/root and rhizome, per day; Not to exceed 200 milligrams of extract and a QCE of 1 gram dried root/root and rhizome, per single dose Tincture 1.2-1.8 grams dried root/root and rhizome, per day Standardized Extracts (Dry extract) 144-680 milligrams of dried root/root and rhizome extract, per day; Not to exceed 200 milligrams per single dose and: 0.8 - 3% salidroside And/Or 1 - 6% rosavins Traditionally used in Ayurveda as Rasayana (rejuvenative tonic) *Asparagus racemosus* (*Shatavari*) Dry, Powdered, Non-Standardized Ethanolic Extracts (Dry extract, Tincture, Fluid extract) 3-6 grams dried root, per day *Withania somnifera* (*Ashwagandha*) Dry, Powdered, Non-Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion) 2-6 grams dried root, per day 1 References consulted for the uses or purposes: Upton 2012; Winston and Maimes 2007; Mills and Bone 2005; API 2004; WHO 2004; Bone 2003; Hoffman 2003; Thomsen 2002; Williamson 2002; API 2001; Blumenthal et al. 2000; Upton 2000, 1999; WHO 1999; Bradley 1992. 2 References consulted for the doses: Upton 2012; Winston and Maimes 2007; Mills and Bone 2005; API 2004, 2001; WHO 2004; Bone 2003; Hoffman 2003; Thomsen 2002; Williamson 2002; Kapoor 2001; Blumenthal et al. 2000; Upton 1999; WHO 1999; Bradley 1992. Table 2.7. Maximum daily doses for complementary ingredients with no associated recommended use Medicinal Ingredients Methods of preparations Doses/day 1 *Huperzia serrata* (Toothed club-moss) Standardized extracts (Dry extract) Up to 20 milligrams extract standardized to huperzine A, per day; Not to exceed 1% huperzine A potency Huperzine A N/A Up to 200 micrograms, per day Theacrine N/A Up to 300 milligrams, per day Theobromine N/A Up to 850 milligrams, per day 1 References consulted for the doses: Clewell et al. 2016; Taylor et al. 2016; Neufingerl et al. 2013; Ma et al. 2007; Sun et al. 1999. Direction(s) for use See Table 5 below. Combination rules and restrictions All medicinal ingredients included in this monograph may be combined across all groups, with the following restrictions: Use or Purpose Restrictions A use or purpose statement is only acceptable if at least one medicinal ingredient associated with that statement is present at a dose at or above the minimum daily dose listed in Tables 2.1 to 2.6. Medicinal ingredients which do not meet the minimum daily dose for a use or purpose statement will be considered as acceptable complementary medicinal ingredients in product formulations. For multi-ingredient products making at least one claim based on traditional use: To prevent the product from being represented as a "traditional medicine," any indicated traditional use claim must refer to the specific medicinal ingredient(s) and recognized traditional system of medicine from which the claim originates when 1) both traditional and modern claims are present or 2) when claims originate from multiple systems of traditional medicine (e.g. German chamomile is traditionally used in Herbal Medicine to help relieve restlessness and/or nervousness. *Ashwagandha* is traditionally used in Ayurveda to balance aggravated Vata.). When ALL of the medicinal ingredients (MIs) in the product are used within the SAME identified system of traditional medicine AND the product makes ONLY traditional claims, listing of MIs in the traditional claim(s) is not required. Rules for sedative (soporific) ingredients (table 2.2) If sedative ingredients (table 2.2) are combined, the sum of the percentages of the maximum daily reference dose must not exceed 120%, for all sedative ingredients in the product (including sedative ingredients supported by other NNHPD monographs such as melatonin). Note that no single ingredient can exceed 100% of its maximum daily reference dose. Please see Table 3 below for a calculation example. Table 3. Combination Table to assess Safety of Sedative/Soporific Ingredients Additive Indication e.g. Used in Herbal Medicine as a sleep aid Medicinal Ingredients Maximum Daily Recommended Dose on PLA form Maximum Daily Monograph Reference Dose Percentage of the Maximum Daily Reference Dose (%) *Eschscholzia californica* (California-poppy) 0.5 g 3 g $0.5/3 = 16.67\%$ *Humulus lupulus* (Hops) 4 g 6 g $4/6 = 66.66\%$ *Passiflora incarnata* (Passionflower) 0.5 g 8 g $0.5/8 = 6.25\%$ Sum of Percentages 89.6% The calculations are performed as follows: Percentage of the Maximum Daily Reference Dose = [(Maximum Daily Recommended Dose on PLA form) / (Maximum Daily Monograph Reference Dose)] x 100% Safety assessment - Sum of Percentages: In the example above, the sum of Percentages of the Maximum Daily Reference Dose is

89.6%, which is less than 120%. Safety of the combination of ingredients is therefore supported by the monograph. Rules for Caffeine If a product contains caffeine from any source, it cannot contain a sedative at a therapeutic dose (table 2.2) and nervine/sedative/relaxation claims (tables 2.1, 2.2 & 2.5) are not permitted. Products containing a total amount of caffeine per day that meets the minimum therapeutic dose (100 mg/day) must indicate a use or purpose associated with caffeine. Products containing caffeine either synthetic, isolated or from plant materials must not: indicate any uses or purpose related to healthy blood pressure or cardiovascular health at any dose (except if supported by a monograph for a medicinal ingredient providing caffeine such as green coffee bean extract). indicate any uses or purpose related to the maintenance/support of good/general health at a daily dose of 40 mg or more total caffeine from all sources. The maximum amount of total caffeine permitted from all ingredients in the product is 400 mg/day, and 200 mg per single dose. If the total amount of caffeine provided by the combination of ingredients in the product (e.g. Yerba mate and Guarana) is equal to or higher than 40 mg per day, risk statements from the NNHPD Caffeine Monograph are required. Please see Table 5 below. Additional synthetic caffeine added to Guarana and/or Yerba mate extracts must be represented as a separate medicinal ingredient. When caffeine (from any source) is combined with theacrine and/or theobromine, the sum of the percentages of the maximum daily/single reference dose must not exceed 120% for these ingredients. Note that no single ingredient can exceed 100% of its maximum daily/single reference dose. Please see table 4 below. Table 4. Combination Table to assess safety of ingredients with a caution for cardiovascular and/or blood pressure conditions. Additive Effect Ingredients which may have an impact on heart rate and/or blood pressure Medicinal Ingredients Maximum Daily/ Single Recommended Dose on PLA form Maximum Daily/ Single Monograph Reference Dose Percentage of the Maximum Daily/ Single Reference Dose (%) Caffeine 100 mg 200 mg per single dose/400 mg per day 100/200 = 50% (single dose) 100/400 = 25% (day) Theacrine 120 mg 300 mg 120/300 = 40% Theobromine 50 mg 850 mg 50/850 = 5.9% Sum of Percentages 95.9% per single dose/ 70.9% per day See table 3 above for an example of calculations. In this example, the sum of Percentages of the Maximum Monograph Reference Single Dose is 95.9%, which is less than 120%. Safety of the combination of ingredients is therefore supported by the monograph. Rules for Huperzine A When combining Huperzia serrata extract and Huperzine A (isolate or synthetic), the total quantity of Huperzine A provided by the product cannot exceed 200 micrograms per day. Rules for Acetylcarnitine (Restrictions when this monograph is combined with other monographs) When combining Acetylcarnitine with L-Carnitine, the total quantity of these ingredients cannot exceed 4 grams per day and 2 grams per single dose. Duration(s) of Use See Table 5 below. Risk Information Consult Table 5 for appropriate statements related to each medicinal ingredient. The medicinal ingredients in Table 5 are associated with the required numbered statements below. As per the respective NNHPD monograph. Duration(s) of Use Products providing Huperzia serrata, Huperzine A, 300 mg or more GABA per day, or over 150 mg Theobromine per day: Ask a health care practitioner/health care provider/health care professional/doctor/physician for use beyond 4 weeks. Products providing 101 to 300 mg/day Theacrine: Ask a health care practitioner/health care provider/health care professional/doctor/physician for use beyond 8 weeks. Caution(s) and warning(s) Ask a health care practitioner/health care provider/health care professional/doctor/physician if symptoms persist or worsen. Ask a health care practitioner/health care provider/health care professional/doctor/physician before use if you are pregnant or breastfeeding. Ask a health care practitioner/health care provider/health care professional/doctor/physician before use if you are pregnant. Ask a health care practitioner/health care provider/health care professional/doctor/physician before use if you are breastfeeding. Ask a health care practitioner/health care provider/health care professional/doctor/physician before use if you have a urinary tract disorder and/or kidney disease. Ask a health care practitioner/health care provider/health care professional/doctor/physician before use if you have kidney disease and/or a seizure disorder. Ask a health care practitioner/health care provider/health care professional/doctor/physician before use if you have high blood pressure or glaucoma. Products providing Huperzia serrata, huperzine A, or over 150 mg/day theobromine: Ask a health care practitioner/health care provider/health care professional/doctor/physician before use if you have a blood pressure or cardiovascular disorder. Ask a health care practitioner/health care provider/health care professional/doctor/physician before use if you are taking medications which affect acetylcholine levels (cholinergic or anticholinergic drugs). Ask a health care practitioner/health care provider/health care professional/doctor/physician before use if you are taking dopaminergic or cholinergic drugs. Products making a sustained attention claim: Ask a health care practitioner/health care provider/health care professional/doctor/physician before use if you have an attention deficit disorder with or without hyperactivity (ADD or ADHD). When using this product exercise caution if you drive or use machinery as you may experience drowsiness. Products providing 300 mg or more GABA per day: When using this product avoid taking with alcohol. Contraindication(s) Do not use this product if you are pregnant or breastfeeding. Do not use this product if you are pregnant. Do not use if you have gastrointestinal irritation. Known adverse reaction(s) Stop use and ask a health care practitioner/health care provider/health care professional/doctor/physician if you experience dizziness, unusual muscle cramping, agitation,

gastrointestinal symptoms such as nausea, vomiting, diarrhea or excessive salivation. Stop use and ask a health care practitioner/health care provider/health care professional/doctor/physician if hypersensitivity/allergy occurs. Stop use if you experience severe stomach and/or intestinal irritation. When using this product you may experience gastrointestinal discomfort/disturbances. When using this product you may experience headaches or gastrointestinal discomfort/disturbances. When using this product (a) diuretic effect may occur. Table 5. Risk information, durations of use, and directions for use associated with medicinal ingredients

Medicinal Ingredients	Risk Information	Durations of Use	Directions for use
1,3,7-Trimethylxanthine (Caffeine)	1	1	4
4-Aminobutanoic acid (GABA)	5,16	2	
Acetyl-L-Carnitine (Acetylcarnitine)	5, 9, 23		
Anemone pulsatilla (Pasqueflower)	4, 8, 17, 19, 22		
Asparagus racemosus (Shatavari)	6		
Astragalus membranaceus (Astragalus)	1		
Avena sativa (Oat)	4		
Bacopa monnieri (Bacopa)	5, 23		
Citicoline	5, 13, 14, 24		
Cod liver oil	1		
Eleutherococcus senticosus (Eleuthero)	1	1	
Eschscholzia californica (California-poppy)	1	1	
Fish oil	1		
Ganoderma lucidum (Reishi)	1	1	
Ginkgo biloba (Ginkgo)	1	1	
Glycyrrhiza glabra (Licorice)	1	1	
Humulus lupulus (Hops)	1	1	
Huperzia serrata ; Huperzine A	11, 12, 17, 20	2	
Hypericum perforatum (St. John's wort)	1	1	
Ilex paraguariensis (Yerba mate)	5, 10, 21, 25		
L-5-Hydroxytryptophan (L-5-HTP)	1	1	1
L-alpha-Glycerophosphorylcholine (Choline alfoscerate)	5		
L-Theanine	1		
L-Tyrosine	1	1	1
Matricaria chamomilla (German chamomile)	1		
Melissa officinalis (Lemon balm)	1		
Nepeta cataria (Catnip)	1		
Ocimum tenuiflorum (Holy basil)	1		
Panax ginseng (Asian ginseng)	1	1	
Panax quinquefolius (American ginseng)	1		
Passiflora incarnata (Passionflower)	1	1	
Paullinia cupana (Guarana)	5, 10, 21, 25		
Phosphatidylserine	1		
Rhodiola rosea (Rhodiola)	1		
Schisandra chinensis (Schisandra)	7, 18		
Scutellaria lateriflora (Skullcap)	1		
Stachys officinalis (Wood Betony)	4, 5, 15		
Theacrine	5, 10	3	
Theobromine	5, 11, 23	2	
Tilia cordata (Small-leaf linden)	1		
Tilia platyphyllos (Large-leaf linden)	1		
Tilia x europaea (European linden)	1		
Tinospora cordifolia (Guduchi)	5		
Turnera diffusa (Damiana)	4, 7, 18		
Valeriana officinalis (Valerian)	1	1	
Withania somnifera (Ashwagandha)	1		

Combination of ingredients resulting in a total caffeine content of 40 mg/day or more (e.g. Yerba mate and Guarana extracts) as per the caffeine monograph as per the caffeine monograph

References: Nakazaki et al. 2021; Clewell et al. 2016; Taylor et al. 2016; Kuhman et al. 2015, McGlade et al. 2015, Morasch et al. 2015, Baggott et al. 2013, Cotroneo et al. 2013; EFSA 2013; EMA 2013; Gardner and McGuffin 2013, Neufingerl et al. 2013, Yang et al. 2013, McGlade et al. 2012, Fiebich et al. 2011; AMR 2010; Morgan and Stevens 2010; Okun et al. 2010, Van den Bogaard et al. 2010; ESCOP 2009; Wang et al. 2009; Calabrese et al. 2008; CPS 2008; Li et al. 2008, Cornelis and El-Sohemy 2007; Powers et al. 2007; Bain et al. 2006; Bradley 2006; Bui et al. 2006; Mills et al. 2006; Shils et al. 2006; Turner et al. 2006; Bouchard et al. 2005; Chandrasekaran et al. 2005; Haller et al. 2005; Noordzij et al. 2005; Nathan et al. 2004; Bone 2003; Zangara 2003; Avisar et al. 2002; Barnes et al. 2002; Berardi et al. 2002; Thomsen 2002; Brinker 2001; Nathan et al. 2001; Stough et al. 2001; Arya et al. 2000; Pepping 2000; Vahedi et al. 2000; Jee et al. 1999; Sun et al. 1999; Mester et al. 1995; Xu et al. 1995, Bradley 1992; Zimmerman 1992; Creighton and Stanton 1990; Rai et al. 1990; Jefferson 1988. 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 Must be established in accordance with the requirements described in the Natural Health Products Regulations. Products containing Cod liver oil, Fish oil or Schizochytrium oil (except when encapsulated) Refrigerate after opening (Senanayake and Fichtali 2006; Wille and Gonus 1989). (information for industry; not for labelling) To be packaged in airtight container, protected from light (Ph.Eur. 2023; USP-NF 2023). 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. For the following ingredients please see the respective NNHPD monograph for additional quality requirements: Astragalus, American ginseng, Cod liver oil, Eleuthero, Fish oil, German chamomile-Oral, Ginkgo biloba, Hops, Licorice, Panax ginseng, St John's wort, L-Tyrosine, L-Theanine, Valerian. EXAMPLE OF PRODUCT FACTS: Consult the Guidance Document, Labelling of Natural Health Products for more details. References Cited Abdou AM, Higashiguchi S, Horie K, Kim M, Hatta H, Yokogoshi H. Relaxation and immunity enhancement effects of gamma-aminobutyric acid (GABA) administration in humans. Biofactors 2006; 26(3):201-208. AMR 2010: Alternative Medicine Review (AMR). Acetyl-L-Carnitine Monograph. Alternative Medicine Review 2010; 15(1): 76-83. Anghelescu IG, Kohnen R, Szegedi A, Klement S, Kieser M. Comparisons of Hypericum extract WS 5570 and paroxetine in ongoing treatment after recovery from an episode of moderate to severe depression: results from a randomized multicenter study. Pharmacopsychiatry 2006; 39(6):213-219. API 2001: The Ayurvedic Pharmacopoeia of India, Part I, Volume I and II, 1st edition. New Delhi (India): Government of India, Ministry of Health and Family Welfare, Department of Indian Systems of Medicine & Homoeopathy; 2001. API 2004: The Ayurvedic Pharmacopoeia of India, Part 1, Volume IV. Delhi (IN): The Controller of Publications; 2004. Arya LA, Myers DL, Jackson ND. Dietary caffeine intake and the risk for detrusor instability: a case-control study. Obstetrics and Gynecology 2000; 96(1):85-89. Avisar R, Avisar E, Weinberger D. Effect of coffee consumption on intraocular pressure. The Annals of Pharmacotherapy 2002; 36(6):992-995. Baggott MJ, Childs E, Hart AB, de Bruin E, Palmer AA, Wilkinson JE, de Wit H. Psychopharmacology of theobromine in

healthy volunteers. *Psychopharmacology* 2013; 228(1): 109-118. Bain MA, Faull R, Fornasini G. Accumulation of trimethylamine and trimethylamine-N-oxide in end-stage renal disease patients undergoing haemodialysis. *Molecular Genetics and Metabolism* 2004; 81:263-272. Barbagallo SG, Barbagallo M, Giordano M, Meli M, Panzarasa R. Alpha-glycerophosphocholine in mental recovery of cerebral ischemic attacks. An Italian multicenter clinical trial. *Annals of the New York Academy of Science* 1994; 717: 253-269. Barbhaiya C, Desai R, Saxena V, Pravina K, Wasim P, Geetharani P, Allan J, Venkateshwarlu K, Amit A. Efficacy and tolerability of bacomind® on memory improvement in elderly participants- A double blind placebo controlled study. *Journal of Pharmacology and Toxicology* 2008; 3(6): 425-434. Barnes J, Anderson LA, Philipson JD. *Herbal Medicines: A Guide for Healthcare Professionals*, 2nd edition. London (GB): The Pharmaceutical Press; 2002. Berardi RR, DeSimone EM, Newton GD, Oszko MA, Popovich NG, Rollins CJ, Shimp LA, Tietze KJ, editors. *Handbook of Non-prescription Drugs: An Interactive Approach to Self-Care*, 13th edition. Washington (DC): American Pharmaceutical Association; 2002. BHP 1983: British Herbal Pharmacopoeia. Cowling (GB): British Herbal Medical Association; 1983. Blumenthal M, Goldberg A, Brinckmann J. *Herbal Medicine: Expanded Commission E Monographs*. American Botanical Council; 2000. Bone K. *A clinical guide to blending liquid herbs: Herbal formulations for the individual patient*. St. Louis (MI): Churchill Livingstone; 2003. Bouchard NC, Howland MA, Greller HA, Hoffman RS, Nelson LS. Ischemic stroke associated with use of an ephedra-free dietary supplement containing synephrine. *Mayo Clinic Proceedings* 2005; 80(4):541-545. BPC 1911: British Pharmaceutical Codex. Council of the Pharmaceutical Society of Great Britain; 1911. Bradley PR, editor. *British Herbal Compendium: A Handbook of Scientific Information on Widely Used Plant Drugs*, Volume 1. Bournemouth (GB): British Herbal Medicine Association; 1992. Bradley PR, editor. *British Herbal Compendium: A Handbook of Scientific Information on Widely Used Plant Drugs*, Volume 2. Bournemouth (GB): British Herbal Medicine Association; 2006. Brinker F. *Herb Contraindications and Drug Interactions*, 3rd edition. Sandy (OR): Eclectic Medical Publications; 2001. Brinker F. 2010. *Online Updates and Additions to Herb Contraindications and Drug Interactions*, 3rd edition. Sandy (OR): Eclectic Medical Publications; 2010. [Accessed 2014-03-04]. Available from: <http://www.eclecticherb.com/emp/updatesHCIDI.html>. Bui LT, Nguyen DT, Ambrose PJ. Blood pressure and heart rate effects following a single dose of bitter orange. *The Annals of Pharmacotherapy* 2006; 40(1):53-57. Calabrese C, Gregory WL, Leo M, Kraemer D, Bone K, and Oken B. Effects of a standardized *Bacopa monnieri* extract on cognitive performance, anxiety, and depression in the elderly: A randomized, double-blind, placebo-controlled trial. *The Journal of Alternative and Complimentary Medicine* 2008; 14(6): 707-713. Canal N, Franceschi M, Alberoni M, Castiglioni C, De Moliner P, Longoni A. Effects of L-alpha-glyceryl-phosphorylcholine on amnesia caused by scopolamine. *International Journal of Clinical Pharmacology. Therapy and Toxicology* 1991; 29(3): 103-107. Chandrasekaran S, Rochtchina E, Mitchell P. Effects of caffeine on intraocular pressure: the Blue Mountains Eye Study. *Journal of Glaucoma* 2005;14(6):504-507. Christopher G, Sutherland D, Smith A. Effects of caffeine in non-withdrawn volunteers. *Human Psychopharmacology* 2005;20(1):47-53. Clewell A, Hirka G, Glavits R, Palmer PA, Endres JR, Murbach TS, Marx T, Szakonyine IP. A 90-day oral toxicological evaluation of the methylurate purine alkaloid theacrine. *Journal of Toxicology* 2016: <https://doi.org/10.1155/2016/6206859>. CNF 2023: Canadian Nutrient File (CNF). Nutrition & Healthy Eating, Food and Nutrition, Health Canada. [Accessed 2023 October 27]. Available from: <http://webprod3.hc-sc.gc.ca/cnf-fce/index-eng.jsp>. Cornelis MC, El-Sohemy A. Coffee, caffeine, and coronary heart disease. *Current Opinion in Lipidology* 2007;18(1):13-19. Cotroneo AM, Castagna A, Putignano S, Lacava R, Fanto F, Monteleone F, Rocca F, Malara A, Gareri P. Effectiveness and safety of citicoline in mild vascular cognitive impairment: the IDEALE study. *Clinical interventions in aging* 2013;8:131-137. CPS 2008: *Compendium of Pharmaceuticals and Specialties: The Canadian Drug Reference for Health Professionals*. Ottawa (ON): Canadian Pharmacists Association; 2008. Creighton SM, Stanton SL. Caffeine: does it affect your bladder? *British Journal of Urology* 1990;66(6):613-614. De Jesus Moreno Moreno M. Cognitive improvement in mild to moderate Alzheimer's dementia after treatment with the acetylcholine precursor choline alfoscerate: A multicenter, double-blind, randomized, placebo-controlled trial. *Clinical Therapeutics* 2003; 25(1): 178-193. EFSA 2013: European Food Safety Authority. Scientific Opinion on the safety of "citicoline" as a Novel Food ingredient. *EFSA Journal* 2013; 11(10): 3421-3443. Ellingwood F. *American Materia Medica, Therapeutics and Pharmacognosy*. Sandy (OR): Eclectic Medical Publications; 1983 [Reprint of 1919 original]. EMA 2008: European Medicines Agency. Community herbal monograph on *Avena sativa* L., herba. London (UK): Committee on herbal medicinal products (HMPC); 2008. [Accessed 2024 February 8]. Available from: https://www.ema.europa.eu/en/documents/herbal-monograph/final-community-herbal-monograph-avena-sativa-l-herba_en.pdf. EMA 2010: European Medicines Agency. Community herbal monograph on *Ilex paraguariensis* St. Hilaire, folium. London (UK): Committee on Herbal Medicinal Products (HMPC); 2009. [Accessed 2023 October 27]. Available from: https://www.ema.europa.eu/en/documents/herbal-monograph/final-community-herbal-monograph-ilex-paraguariensis-st-hil-folium-first-version_en.pdf. EMA 2013: European Medicines Agency. Community herbal monograph on *Paullinia cupana* Kunth ex H.B.K. var. *sorbilis* (Mart.) Ducke, semen. London (UK): Committee on Herbal Medicinal Products (HMPC); 2013. [Accessed 2023 October 27]. Available from: https://www.ema.europa.eu/en/documents/herbal-monograph/final-community-herbal-monograph-paullinia-cupana-kunth-ex-h-b-k-var-sorbilis-mart-ducke-semen_en.pdf

[ps://www.ema.europa.eu/en/documents/herbal-monograph/final-community-herbal-monograph-paullinia-cupana-kunth-ex-hbk-var-sorbilis-mart-ducke-semen-first-version_en.pdf](https://www.ema.europa.eu/en/documents/herbal-monograph/final-community-herbal-monograph-paullinia-cupana-kunth-ex-hbk-var-sorbilis-mart-ducke-semen-first-version_en.pdf). ESCOP 2009: European Scientific Cooperative on Phytotherapy. ESCOP Monographs: The Scientific Foundation for Herbal Medicinal Products, 2nd edition, Supplement 2009. Exeter (GB): European Scientific Cooperative on Phytotherapy in collaboration with Thieme. Fellows LE, Bell EA. 5-hydroxy-L-tryptophan, 5-hydroxytryptamine and L-tryptophan-5hydroxylase in *Griffonia simplicifolia*. *Phytochemistry* 1970;9(11):2389-2396. Felter HW, Lloyd JU. King's American Dispensatory, Volume 1, 18th edition. Sandy (OR): Eclectic Medical Publications; 1983 [Reprint of 1898 original]. Fiebich BL, Knorle R, Appel K, Kammler T, Weiss G. Pharmacological studies in an herbal drug combination of St. John's Wort (*Hypericum perforatum*) and passion flower (*Passiflora incarnata*): In vitro and in vivo evidence of synergy between *Hypericum* and *Passiflora* in antidepressant pharmacological models 2011; 82: 474-480. Gardner Z and McGuffin M, editors. American Herbal Products Association's Botanical Safety Handbook. 2nd edition. Boca Raton (FL): CRC Press; 2013. Grieve M. A Modern Herbal, Volume 1. New York (NY): Dover Publications; 1971 [Reprint of 1931 Harcourt, Brace & Company publication]. Haller CA, Benowitz NL, Jacob P. Hemodynamic effects of ephedra-free weight-loss supplements in humans. *The American Journal of Medicine* 2005;118(9):998-1003. Health Canada 2025. Caffeine monograph. Natural and Non-Prescription Health Products Directorate. Ottawa (ON). [Accessed 2025 July 7]. Available from: <http://webprod.hc-sc.gc.ca/nhp/nd-bdipsn/atReq.do?atid=caffeine.caffeine&lang=eng> Health Canada 2012. Caffeine in foods. Health Canada. [Accessed 2019-02-14]. Available from: <https://www.canada.ca/en/health-canada/services/food-nutrition/food-safety/food-additives/caffeine-foods/foods.html> Hoffmann D. Medical Herbalism: The Science and Practice of Herbal Medicine. Rochester (VT): Healing Arts Press; 2003. Jee SH, He J, Whelton PK, Suh II, Klag MJ. The effect of chronic coffee drinking on blood pressure: a meta-analysis of controlled clinical trials. *Hypertension* 1999;33(2):647-652. Jefferson JW. Lithium tremor and caffeine intake: two cases of drinking less and shaking more. *Journal of Clinical Psychiatry* 1988;49(2):72-73. Jensen CL Voigt RG, Llorente AM, Peters SU, Prager TC, Zou YL, Rozelle JC, Turchich, MR, Frayley JK, Anerson RE, Heird WC. Effects of early maternal docosahexaenoic acid intake on neuropsychological status and visual acuity at five years of age of breast-fed term infants. *The Journal of Pediatrics* 2010; 125:900-905. Kamimori H, Penetar DM, Headley DB, Thorne DR, Otterstetter R, Belenky G. Effect of three caffeine doses on plasma catecholamines and alertness during prolonged wakefulness. *European Journal of Clinical Pharmacology* 2000;56(8):537-544. Kanehira T, Nakamura Y, Nakamura K, Horie K, Horie N, Furugori K, Sauchi Y, Yokogoshi H. Relieving Occupational Fatigue by Consumption of a Beverage Containing gamma-Amino Butyric Acid. *Journal of Nutritional Science and Vitaminology* 2011; 57(1):9-15. Kapoor LD. Handbook of Ayurvedic Medicinal Plants: Herbal Reference Library. Boca Raton (FL): CRC Press; 2001. Kennedy DO, Haskell CF, Wesnes KA, Scholey AB (2004). Improved cognitive performance in human volunteers following administration of guarana (*Paullinia cupana*) extract: comparison and interaction with Panaxginseng. *Pharmacology, Biochemistry, and Behaviour* 2004; 79(3):401-411. Kihlman BA. 1,3,7,9-Tetramethyluric acid - A chromosome-damaging agent occurring as a natural metabolite in certain caffeine-producing plants. *Mutation Research* 1977; 39: 297-316. Kuhman DJ, Joyner KJ, Bloomer RJ. Cognitive performance and mood following ingestion of a theacrine-containing dietary supplement, caffeine, or placebo by young men and women. *Nutrients* 2015; 7: 9618-9632. Lemaire PA, Adosraku RK. An HPLC method for the direct assay of the serotonin precursor, 5hydroxytryptophan, in seeds of *Griffonia simplicifolia*. *Phytochemical Analysis* 2002;13(6):333-337. Li et al. Huperzine A for Alzheimer's disease. *Cochrane Database Syst. Rev.* 2008;16(2) :CD005592 Ma X, Tan C, Zhu D, Gang DR, Xiao P. Huperzine A from *Huperzia* species - An ethnopharmacological review. *Journal of ethnopharmacology* 2007; 113(1): 15-34. Mahoney CR, Castellani J, Kramer FM, Young A, Lieberman HR. Tyrosine supplementation mitigates working memory decrements during cold exposure. *Physiology and Behavior* 2007;92(4):575-582. Malaguarnera M, Gargate, MP, Cristaldi E, Colonna V, Messano M, Koverech A, Neri S, Vacante M, Cammalleri L, Motta, M. Acetyl L-carnitine (ALC) treatment in elderly patients with fatigue. *Archives of Gerontology and Geriatrics* 2008; 46: 181-190. Martinez-Pinilla E, Onatibia-Astibia A, Franco R. The relevance of theobromine for the beneficial effects of cocoa consumption. *Frontiers in Pharmacology* 2015; 6: 30. McGlade E, Agoston AM, DiMuzio J, Kizaki, M, Nakazaki, E, Kamiya T, Yurgelun-Todd D. The Effect of Citicoline Supplementation on Motor Speed and Attention in Adolescent Males. *Journal of attention disorders* 2015;23(2):121-134. McGlade E, Locatelli A, Hardy J, Kamiya T, Morita M, Morishita K, Sugimura Y, Yurgelun-Todd D. Improved attentional performance following citicoline administration in healthy adult women. *Food and Nutrition Sciences* 2012;3:769-773. Mester R, Toren P, Mizrahi I, Wolmer L, Karni N, Weizman A. Caffeine withdrawal increases lithium blood levels. *Biological Psychiatry* 1995;37(5):348-350. Mills E, Dugoua JJ, Perri D, Koren G. Herbal Medicines in Pregnancy and Lactation. Boca Raton (FL): Taylor and Francis Medical; 2006. Mills S and Bone K. The Essential Guide to Herbal Safety. St. Louis (MO): Elsevier Churchill Livingstone; 2005. Morasch KC, Aaron CL, Moon JE, Gordon RK. Physiological and neurobehavioral effects of cholinesterase inhibition in healthy adults. *Physiology & Behaviour* 2015; 138: 165-172 Morgan and Stevens.

Does *Bacopa monnieri* improve memory performance in older persons? Results of a randomized, placebo-controlled, double-blind trial. *The Journal of Alternative and Complementary Medicine* 2010; 16 (7): 753-759. Murthy KRS. *Bhavaprakasha of Bhavmisra*, Volume 1. Varanasi (IND): Chowkhamba Krishnadas Academy; 2004. Nakazaki E, Mah E, Sanoshy K, Citrolo D, Watanabe F. Citicoline and memory function in healthy older adults: a randomized, double-blind, placebo-controlled clinical trial. *The Journal of Nutrition* 2023;151(8):2153-2160. Nathan PJ, Clarke, J, Lloyd J, Hutchison CW, Downey L, Stough C. The acute effects of an extract of *Bacopa monniera* (Brahmi) on cognitive function in healthy normal subjects. *Human Psychopharmacology* 2001; 16:345-351. Nathan PJ, Tanner S, Lloyd J, Harrison B, Curran, L, Oliver C, Stough C. Effects of a combined extract of *Ginkgo biloba* and *Bacopa monniera* on cognitive function in healthy humans. *Human Psychopharmacology* 2004; 19(2):91-96. Neri DF, Wiegmann D, Stanny RR, Shappell SA, McCardie A, McKay DL. The effect of tyrosine on cognitive performance during extended wakefulness. *Aviation, space, and environmental medicine* 1995;66(4):313-319. Neufingerl N, Zebregs YEMP, Schuring EAH, Trautwein EA. Effect of cocoa and theobromine consumption on serum HDL-cholesterol concentrations: a randomized controlled trial. *The American Journal of Clinical Nutrition* 2013; 97: 1201-1209. NHPID 2025. Natural Health Products Ingredients Database. [Accessed 2023-09-25]. Available from: <http://webprod.hc-sc.gc.ca/nhp-id-bdipsn/search-rechercheReq.do> Noordzij M, Uiterwaal CS, Arends LR, Kok FJ, Grobbee DE, Geleijnse JM. Blood pressure response to chronic intake of coffee and caffeine: a meta-analysis of randomized controlled trials. *Journal of Hypertension* 2005;23(5):921-928. Okun MS, Boothby LA, Bartfield RB, Doering PL. GHB: an important pharmacologic and clinical update. *Journal of Pharmacy & Pharmaceutical Sciences: A Publication of the Canadian Society for Pharmaceutical Sciences, Société canadienne des sciences pharmaceutiques*. 2001; 4(2):167-175. Parnetti L, Abate G, Bartorelli L, Cucinotta D, Cuzzupoli M, Maggioni M, Villardita C, Senin U. Multicentre study of l- α -glyceryl-phosphorylcholine vs ST200 among patients with probable senile dementia of Alzheimer's type. *Drugs and Aging* 1993; 3(2): 159-164. Parnetti L, Amenta F, and Gallai, V. Choline alfoscerate in cognitive decline and in acute cerebrovascular disease: an analysis of published clinical data. *Mechanisms of Ageing and Development* 2001; 122:2041-2055. Pepping J, Huperzine A. *American Journal of Health-System Pharmacy* 2000;57(6):530-534. Pettegrew JA, Klunk WE, Panchalingam K, Kanfer JN, McClure RJ. Clinical and neurochemical effects of acetyl-L-carnitine in Alzheimer's disease. *Neurobiology of Aging* 1994; 16(1):1-4. Ph.Eur. 2023: European Pharmacopoeia, 11th edition. Strasbourg (FR): Directorate for the Quality of Medicines and HealthCare of the Council of Europe (EDQM); 2023. Pödlinger W, Calanchini B, Schwarz W. A functional-dimensional approach to depression: serotonin deficiency as a target syndrome in a comparison of 5-hydroxytryptophan and fluvoxamine. *Psychopathology* 1991;24(2):53-81. Powers ME, Yarrow JF, McCoy SC, Borst SE. Growth Hormone Isoform Responses to GABA Ingestion at Rest and after Exercise. *Medicine & Science in Sports & Exercise* 2007; 40(1):104- 110. Quinn JF, Raman R, Thomas RG, Yurko-Mauro K, Nelson EB, Van Dyck C, Galvin JE, Emond J, Jack CR, Weiner M, Shinto L, Aisen PS. Docosahexaenoic acid supplementation and cognitive decline in Alzheimer's disease. *Journal of the American Medical Association* 2010; 304(17): 1903-1911. Raghav S, Singh H, Dalal P, Srivastava J, Asthana O. Randomized controlled trial of standardized *Bacopa monniera* extract in age-associated memory impairment. *Indian Journal of Psychiatry* 2006; 48(4): 238-242. Rai G, Wright G, Scott L, Beston B, Rest J, Exton-Smith AN. Double-blind, placebo controlled study of acetyl-L-carnitine in patients with Alzheimer's dementia. *Current Medical Research Opinion* 1990; 11:638-647. Remington JP and Woods HC, editors. *The Dispensatory of the United States of America*, 20th edition; 1918. Roodenrys S, Booth D, Bulzomi S, Phipps A, Micallef C, Smoker J. Chronic effects of Brahmi (*Bacopa monnieri*) on human memory. *Neuropsychopharmacology* 2002; 27(2):279-281. Sano M, Bell K, Cote L, Dooneief G, Lawton A, Legler L, Marder K, Naini A, Stern Y, Mayeux R. Double blind parallel design pilot study of acetyl levocarnitine in patients with Alzheimer's disease. *Archive of Neurology* 1992; 49 (11): 1137-1141. Senanayake SPJN, Fichtali J. Single-cell oils as sources of nutraceutical and specialty lipids: processing technologies and applications. In: Shahidi F, editor. *Neutraceutical and speciality lipids and their co-products*. Boca Raton (FL): Taylor and Francis Group; 2006. Shils ME, Olson JA, Shike M, Ross AC, editors. *Modern Nutrition in Health and Disease*, 10th edition. Philadelphia (PA): Lippincott Williams and Wilkins; 2006. Soulaire A, Lambinet H. [Effect of 5-hydroxytryptophan, a serotonin precursor, on sleep disorders]. *Annales Médico-Psychologiques* 1977;1(5):792-798 (in French). Spagnoli A, Lucca U, Menasce, Bandera L, Cizza G, Forloni G, Tettamanti M, Frattura L, Tiraboschi P, Comelli M, et al. Long-term acetyl-L-carnitine treatment in Alzheimer's disease. *Neurology* 1991; 41(11):1726-1732. Stough C, Downey L, Lloyd J, Silber B, Redman S, Hutchison C, Wesnes K, Nathan P. Examining the nootropic effects of a special extract of *Bacopa monniera* on human cognitive functioning: 90 day double-blind placebo-controlled randomized trial. *Phytotherapy Research* 2008; 22(12):1629-1634. Stough C, Lloyd J, Clarke J, Downey L, Hutchison CW, Rodgers T, Nathan PJ. The chronic effects of an extract of *Bacopa monniera* (Brahmi) on cognitive function in healthy human subjects. *Psychopharmacology* 2001; 156(4): 481-484. Sun QQ, Xu SS, Pan JL, Guo HM, Cao WQ. Huperzine-A capsules enhance memory and learning performance in 34 pairs of matched adolescent students. *Acta*

Pharmacologica Sinica 1999; 20(7): 601-603. Sutanto CN, Xia X, Heng CW, Tan YS, Shan Lee DP, Fam J, Kim JE. The impact of 5-hydroxytryptophan supplementation on sleep quality and gut microbiota composition in older adults: a randomized controlled trial. *Clinical Nutrition* 2024;43(3):593-602. Taylor L., Mumford P., Roberts M., Hayward S., Mullins J., Urbina S., Wilborn C. Safety of TeaCrine®, a non-habituating, naturally-occurring purine alkaloid over eight weeks of continuous use. *Journal of the International Society of Sports Nutrition* 2016; 13(2): <https://doi.org/10.1186/s12970-016-0113-3>. Taylor L. Technical data report for Yerba mate: Reprinted from *Herbal Secrets of the Rainforest*, 2nd Edition. Sage Press Inc.; 2003. Thal LJ, Calvani M, Amato A, Carta AA. 1-year controlled trial of acetyl-L-carnitine in early-onset AD. *Neurology* 2000; 55: 805-810. Thomsen M. *Shatavari-Asparagus racemosus*, Herbal Monograph, Phytomedicine. NSW Australia; 2002. Tobyn G, Denham A, Whitelegg M. *The Western Herbal Tradition: 2000 years of medicinal plant knowledge*. Churchill-Livingstone; 2010. Turner EH, Loftis JM, Blackwell AD. Serotonin a la carte: supplementation with the serotonin precursor 5-hydroxytryptophan. *Pharmacology & Therapeutics* 2006;109(3):325-338. Upton R, editor. *American Herbal Pharmacopoeia and Therapeutic Compendium: American Ginseng Root (Panax quinquefolius L.)-Standards of Analysis, Quality Control, and Therapeutics*. Santa Cruz (CA): American Herbal Pharmacopoeia; 2012. Upton R, editor. *American Herbal Pharmacopoeia and Therapeutic Compendium: Ashwagandha Root (Withania somnifera) - Standards of Analysis, Quality Control, and Therapeutics*. Santa Cruz (CA): American Herbal Pharmacopoeia; 2000. Upton R, editor. *American Herbal Pharmacopoeia and Therapeutic Compendium: Schisandra Berry (Schisandra chinensis)-Analytical, Quality Control, and Therapeutic Monograph*. Santa Cruz (CA): American Herbal Pharmacopoeia; 1999. USP-NF 2023: United States Pharmacopoeia and the National Formulary. Rockville (MD): The United States Pharmacopoeial Convention; <https://online.uspnf.com> Vahedi K, Domingo V, Amarenco P, Bousser MG. Ischaemic stroke in a sportsman who consumed MaHuang extract and creatine monohydrate for body building. *Journal of Neurology, Neurosurgery and Psychiatry* 2000;68(1):112-113. Van den Bogaard B, Draijer R, Westerhof BE, van den Meiracker AH, van Montfrans GA, van den Born BJH. Effects on peripheral and central blood pressure of cocoa with natural or high-dose theobromine. *Hypertension* 2010; 56(5): 839-846. Wang BS, Wang H, Wei ZH, Song YY, Zhang L, Chen HZ. Efficacy and safety of natural acetylcholinesterase inhibitor huperzine A in the treatment of Alzheimer's disease: an updated meta-analysis. *J. Neural Transm (Vienna)*; 2009;116(4):457-465. Wille HJ, Gonus P. Preparation of Fish Oil for Dietary Applications. In: Galli C, Simopolous AP, editors. *Dietary ω 3 and ω 6 Fatty Acids. Biological Effects and Nutritional Essentiality*. New York (NY): Plenum Press; 1989. Williamson EM, editor. *Major Herbs of Ayurveda*. Edinburgh (GB): Churchill Livingstone; 2002. Williamson EM, Evans FJ, Wren RC. *Potter's New Cyclopaedia of Botanical Drugs and Preparations*. Saffron Walden (GB): C.W. Daniel Company Limited; 1988. Winston D, Maimes S. *Adaptogens: Herbs for strength, stamina and stress relief*. Rochester (VT): Healing Arts Press; 2007. Winston D and Kuhn MA. *Herbal Therapy and Supplements: A Scientific and Traditional Approach*. Philadelphia (PA): Wolters Kluwer Health and Lippincott Williams & Wilkins; 2008. WHO: World Health Organization. WHO monographs on selected medicinal plants 2004; Volume 2. WHO: World Health Organization. WHO monographs on selected medicinal plants 1999; Volume 1. Xu SS, Gao ZX, Weng Z, Du ZM, Xu WA, Yang JS, Zhang ML, Tong ZH, Fang YS, Chai XS et al. Efficacy of tablet huperzine-A on memory, cognition, and behavior in Alzheimer's disease. *Acta Pharmacologica Sinica* 1995;16(5):391-395. Yamakoshi J, Shiojo R, Nakagawa S, Izui N, Ogihaara T. Hypotensive Effects and Safety of Less-salt Soy Sauce Containing gamma-aminobutyric acid (GABA) on High-Normal Blood Pressure and Mild Hypertensive Subjects. *Yakuri To Chirya* 2006; 34:691-709 [English Translation]. Yang G, Wang Y, Tian J, Liu JP. Huperzine A for Alzheimer's Disease: A Systematic Review and Meta-Analysis of Randomized Clinical Trials. *PLoS One* 2013; 8(9): 1-8. Yurko-Mauro K, McCarthy D, Rom D, Nelson EB, Ryan AS, Blackwell A, Salem N, Stedman M. Beneficial effects of docosahexaenoic acid on cognition in age-related cognitive decline, Alzheimer's and Dementia 2010; 6:1-9. Zaluski D, Kuzniewski R, Janeczko Z. HPTLC-profiling of eleutherosides, mechanism of antioxidative action of eleutheroside E1, the PAMPA test with LC/MS detection and the structure-activity relationship. *Saudi Journal of Biological Sciences* 2018;25(3): 520-528. Zangara A. The psychopharmacology of huperzine A: an alkaloid with cognitive enhancing and neuroprotective properties of interest in the treatment of Alzheimer's disease. *Pharmacology, Biochemistry and Behavior* 2003;75(3):675-686 Zimmerman DR. *Zimmerman's Complete Guide to Non-prescription Drugs*, 2nd edition. Detroit (MI): Gale Research Inc.; 1992. Zwickey H, Brush J, Iacullo CM, Connelly E, Gregory WL, Soumyanath A, Buresh R. The effect of Echinacea purpurea, astragalus membranaceus and Glycyrrhiza glabra on CD25 Expression in Humans: A Pilot Study. *Phytotherapy Research* 2007; 21(11): 1109-1112. Zwyghuizen-Doorenbos A, Roehrs TA, Lipschutz L, Timms V, Roth T. Effects of caffeine on alertness. *Psychopharmacology* 1990; 100(1):36-39. References Reviewed Blumenthal M, Busse W, Goldberg A, Gruenwald, J, Hall T, Riggins C, Rister R. *The complete German Commission E monographs*. Austin, TX: American Botanical Council; 1998. Brinker F. *The Toxicology of Botanical Medicines*. Sandy (OR): Eclectic Medical Publications; 2000. Calvani, M., Carta, A., Benedetti, N., Iannuccelli, M., Caruso, G. Action of acetyl-L-carnitine in neurodegeneration and Alzheimer's disease. *Aging and Cellular Defense Mechanisms* 1992;663:483-486. Gogte VVM. *Ayurvedic Pharmacology and Therapeutic Uses of Medicinal*

Plants. Mubai (IN): Bharatiya Vidya Bhavan; 2000. Keegan AP, Stough C, Paris D, Luis CA, Abdullah L, Ait-ghezala G, Crawford F, Mullan M. Bacopa monnieri supplementation has no effect on serum brain-derived neurotrophic factor levels but beneficially modulates nuclear factor kappa B and cyclic AMP response element-binding protein levels in healthy elderly subjects. *Journal of clinical and translational research* 2023; 9(1): 50-58. Rege NN, Thatte UM, and Dahanukar SA. Adaptogenic properties of six rasayana herbs used in Ayurvedic medicine. *Phytotherapy Research* 1999; 13(4):275-291. Sayre, L. A Manual of Organic Materia Medica and Pharmacognosy. P. Blakiston's Son & Company; 1917. Upton R, editor. American Herbal Pharmacopoeia and Therapeutic Compendium: Astragalus Root (Astragalus membranaceus & Astragalus membranaceus var. mongolicus)-Analytical, Quality Control, and Therapeutic Monograph. Santa Cruz (CA): American Herbal Pharmacopoeia; 1999. Wilson L. Review of adaptogenic mechanisms: Eleutherococcus senticosus, Panax ginseng, Rhodiola rosea, Schisandra chinensis and Withania somnifera. *Australian Journal of Medical Herbalism* 2007; 19(3): 126-131. Zwickey H, Brush J, Iacullo CM, Connelly E, Gregory WL, Soumyanath A, Buresh R. The effect of Echinacea purpurea, astragalus membranaceus and Glycyrrhiza glabra on CD25 Expression in Humans: A Pilot Study. *Phytotherapy Research* 2007; 21(11): 1109-1112. Report a problem on this page Date modified: 2019-03-01

MEDICINAL INGREDIENT(S)

Methods of preparation Doses/day2

DOSAGE FORM(S)

Acceptable dosage forms for oral use are indicated in the dosage form drop-down list of the web-based Product Licence Application form for Compendial applications.

USE(S) OR PURPOSE(S)

Uses or Purposes1Medicinal IngredientsMethods of preparationDoses/day2 (Traditionally) used in Herbal Medicine to help relieve restlessness and/or nervousness (nervine/calimative)Anemone pulsatilla(Pasqueflower)Dry, Powdered, Non-Standardized Ethanolic Extracts (Dry extract, Tincture, Fluid extract)0.03-0.6 grams dried herb top, per dayNon-Standardized Aqueous Extracts (Dry extract, Decoction, Infusion)0.1-0.9 grams dried herb top, per dayAvena sativa(Oat)Dry, Powdered, Non-Standardized Ethanolic Extracts (Dry extract, Tincture, Fluid extract)0.6-20 grams dried seed, per day3 grams dried herb top, per dayNepeta cataria(Catnip)Dry, Powdered, Non-Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion)1.2-12 grams dried herb top, per dayPanax quinquefolius(American ginseng)Dry, Powdered, Non-Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion)0.5-12 grams dried root, per dayTilia cordata(Small-leaf linden)Dry, Powdered, Non-Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion)1.5-12 grams dried flower, per dayTilia platyphyllos(Large-leaf linden)Dry, Powdered, Non-Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion)1.5-12 grams dried flower, per dayTilia x europaea(European Linden)Dry, Powdered, Non-Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion)1.5-12 grams dried flower, per dayTurnera diffusa(Damiana)Dry, Powdered, Non-Standardized Ethanolic Extracts (Dry extract, Tincture, Fluid extract)1.5-4 grams dried leaf/leaf and stem, per day(Traditionally) used in Herbal Medicine to help relieve restlessness and/or nervousness (nervine/calimative)Hypericum perforatum(St. John's wort)Dry, Powdered, Non-Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion)2-12.6 grams dried herb top, per day; Not to exceed 4.2 grams per single doseUsed in Herbal Medicine to help relieve restlessness and/or nervousness (nervine/calimative)AND/OR(Used in Herbal Medicine to) help(s) relieve sleep disturbances associated with mood imbalanceStandardized Extracts (Dry extract)600-1800 milligrams of dried herb top extract, per day, standardized to 3-6% hyperforin and/or 0.12- 0.28% hypericin; Not to exceed 600 milligrams of extract per single doseHelps (to) relieve sleep disturbances associated with mood

imbalance
L-5-Hydroxytryptophan (L-5-HTP)N/A100-200 milligrams, per day(Traditionally) used in Herbal Medicine to help relieve restlessness and/or nervousness (which helps to promote sleep) (nervine/calmlative)
Matricaria chamomilla(German chamomile)Dry, Powdered, Non- Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion)1.5-24 grams dried flower, per day
Melissa officinalis(Lemon balm)Dry, Powdered, Non- Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion)0.4-13.5 grams dried herb top, per day
Scutellaria lateriflora(Skullcap)Dry, Powdered, Non- Standardized Ethanolic Extracts (Dry extract, Tincture, Fluid extract)0.25-12 grams dried herb top, per day
Non-Standardized Aqueous Extracts (Dry extract, Decoction, Infusion)3-12 grams dried herb top, per day
Stachys officinalis(Wood betony)Dry, Powdered, Non- Standardized Ethanolic Extracts (Dry extract, Tincture, Fluid extract)2-4 grams dried herb top, per day
Traditionally used in Ayurveda to balance aggravated Vata (nervine)
AND/ORTraditionally used in Ayurveda to help relieve restlessness and/or nervousness (which helps (to) promote sleep).
Withania somnifera(Ashwagandha)Dry, Powdered, Non-Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion)2-6 grams dried root, per day

DOSE(S)

Uses or Purposes1Medicinal IngredientsMethods of preparationDoses/day2 (Traditionally) used in Herbal Medicine to help relieve restlessness and/or nervousness (nervine/calmlative)
Anemone pulsatilla(Pasqueflower)Dry, Powdered, Non-Standardized Ethanolic Extracts (Dry extract, Tincture, Fluid extract)0.03-0.6 grams dried herb top, per day
Non-Standardized Aqueous Extracts (Dry extract, Decoction, Infusion)0.1-0.9 grams dried herb top, per day
Avena sativa(Oat)Dry, Powdered, Non-Standardized Ethanolic Extracts (Dry extract, Tincture, Fluid extract)0.6-20 grams dried seed, per day3 grams dried herb top, per day
Nepeta cataria(Catnip)Dry, Powdered, Non-Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion)1.2-12 grams dried herb top, per day
Panax quinquefolius(American ginseng)Dry, Powdered, Non-Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion)0.5-12 grams dried root, per day
Tilia cordata(Small-leaf linden)Dry, Powdered, Non-Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion)1.5-12 grams dried flower, per day
Tilia platyphyllos(Large-leaf linden)Dry, Powdered, Non-Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion)1.5-12 grams dried flower, per day
Tilia x europaea(European Linden)Dry, Powdered, Non-Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion)1.5-12 grams dried flower, per day
Turnera diffusa(Damiana)Dry, Powdered, Non-Standardized Ethanolic Extracts (Dry extract, Tincture, Fluid extract)1.5-4 grams dried leaf/leaf and stem, per day
(Traditionally) used in Herbal Medicine to help relieve restlessness and/or nervousness (nervine/calmlative)
Hypericum perforatum(St. John's wort)Dry, Powdered, Non- Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion)2-12.6 grams dried herb top, per day; Not to exceed 4.2 grams per single dose
Used in Herbal Medicine to help relieve restlessness and/or nervousness (nervine/calmlative)
AND/OR(Used in Herbal Medicine to) help(s) relieve sleep disturbances associated with mood imbalance
Standardized Extracts (Dry extract)600-1800 milligrams of dried herb top extract, per day, standardized to 3-6% hyperforin and/or 0.12- 0.28% hypericin; Not to exceed 600 milligrams of extract per single dose
Helps (to) relieve sleep disturbances associated with mood imbalance
L-5-Hydroxytryptophan (L-5-HTP)N/A100-200 milligrams, per day(Traditionally) used in Herbal Medicine to help relieve restlessness and/or nervousness (which helps to promote sleep) (nervine/calmlative)
Matricaria chamomilla(German chamomile)Dry, Powdered, Non- Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion)1.5-24 grams dried flower, per day
Melissa officinalis(Lemon balm)Dry, Powdered, Non- Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion)0.4-13.5 grams dried herb top, per day
Scutellaria lateriflora(Skullcap)Dry, Powdered, Non- Standardized Ethanolic Extracts (Dry extract, Tincture, Fluid extract)0.25-12 grams dried herb top, per day
Non-Standardized Aqueous Extracts (Dry extract, Decoction, Infusion)3-12 grams dried herb top, per day
Stachys officinalis(Wood betony)Dry, Powdered, Non- Standardized Ethanolic Extracts (Dry extract, Tincture, Fluid extract)2-4 grams dried herb top, per day
Traditionally used in Ayurveda to balance aggravated Vata (nervine)
AND/ORTraditionally used in Ayurveda to help relieve restlessness and/or nervousness (which helps (to) promote sleep).
Withania somnifera(Ashwagandha)Dry, Powdered, Non-Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion)2-6 grams dried root, per day

RISK INFORMATION

Consult Table 5 for appropriate statements related to each medicinal ingredient. The medicinal ingredients in Table 5 are associated with the required numbered statements below. As per the respective NNHPD monograph. Duration(s) of Use Products providing *Huperzia serrata*, Huperzine A, 300 mg or more GABA per day, or over 150 mg Theobromine per day: Ask a health care practitioner/health care provider/health care professional/doctor/physician for use beyond 4 weeks. Products providing 101 to 300 mg/day Theacrine: Ask a health care practitioner/health care provider/health care professional/doctor/physician for use beyond 8 weeks. Caution(s) and warning(s) Ask a health care practitioner/health care provider/health care professional/doctor/physician if symptoms persist or worsen. Ask a health care practitioner/health care provider/health care professional/doctor/physician before use if you are pregnant or breastfeeding. Ask a health care practitioner/health care provider/health care professional/doctor/physician before use if you are pregnant. Ask a health care practitioner/health care provider/health care professional/doctor/physician before use if you are breastfeeding. Ask a health care practitioner/health care provider/health care professional/doctor/physician before use if you have a urinary tract disorder and/or kidney disease. Ask a health care practitioner/health care provider/health care professional/doctor/physician before use if you have kidney disease and/or a seizure disorder. Ask a health care practitioner/health care provider/health care professional/doctor/physician before use if you have high blood pressure or glaucoma. Products providing *Huperzia serrata*, huperzine A, or over 150 mg/day theobromine: Ask a health care practitioner/health care provider/health care professional/doctor/physician before use if you have a blood pressure or cardiovascular disorder. Ask a health care practitioner/health care provider/health care professional/doctor/physician before use if you are taking medications which affect acetylcholine levels (cholinergic or anticholinergic drugs). Ask a health care practitioner/health care provider/health care professional/doctor/physician before use if you are taking dopaminergic or cholinergic drugs. Products making a sustained attention claim: Ask a health care practitioner/health care provider/health care professional/doctor/physician before use if you have an attention deficit disorder with or without hyperactivity (ADD or ADHD). When using this product exercise caution if you drive or use machinery as you may experience drowsiness. Products providing 300 mg or more GABA per day: When using this product avoid taking with alcohol. Contraindication(s) Do not use this product if you are pregnant or breastfeeding. Do not use this product if you are pregnant. Do not use if you have gastrointestinal irritation. Known adverse reaction(s) Stop use and ask a health care practitioner/health care provider/health care professional/doctor/physician if you experience dizziness, unusual muscle cramping, agitation, gastrointestinal symptoms such as nausea, vomiting, diarrhea or excessive salivation. Stop use and ask a health care practitioner/health care provider/health care professional/doctor/physician if hypersensitivity/allergy occurs. Stop use if you experience severe stomach and/or intestinal irritation. When using this product you may experience gastrointestinal discomfort/disturbances. When using this product you may experience headaches or gastrointestinal discomfort/disturbances. When using this product (a) diuretic effect may occur. Table 5. Risk information, durations of use, and directions for use associated with medicinal ingredients

Medicinal Ingredients	Risk Information	Durations of Use	Directions for use
1,3,7-Trimethylxanthine (Caffeine)	114	Aminobutanoic acid (GABA)	5, 162
Acetyl-L-Carnitine (Acetylcarnitine)	5, 9, 23	Anemone pulsatilla (Pasqueflower)	4, 8, 17, 19, 22
Asparagus racemosus (Shatavari)	6	Astragalus membranaceus (Astragalus)	1
Avena sativa (Oat)	4	Bacopa monnieri (Bacopa)	5, 23
Citicoline	5, 13, 14, 24	Cod liver oil	1
Eleutherococcus senticosus (Eleuthero)	11	Eschscholzia californica (California-poppy)	11
Fish oil	1	Ganoderma lucidum (Reishi)	11
Ginkgo biloba (Ginkgo)	11	Glycyrrhiza glabra (Licorice)	11
Humulus lupulus (Hops)	11	Huperzia serrata; Huperzine A	11, 12, 17, 202
Hypericum perforatum (St. John's wort)	11	Ilex paraguariensis (Yerba mate)	5, 10, 21, 25
L-5-Hydroxytryptophan (L-5-HTP)	11	L-alpha-Glycerophosphorylcholine (Choline alfoscerate)	5
L-Theanine	1	L-Tyrosine	11
Matricaria chamomilla (German chamomile)	1	Melissa officinalis (Lemon balm)	1
Nepeta cataria (Catnip)	1	Ocimum tenuiflorum (Holy basil)	1
Panax ginseng (Asian ginseng)	11	Panax quinquefolius (American ginseng)	1
Passiflora incarnata (Passionflower)	11	Paullinia cupana (Guarana)	5, 10, 21, 25
Phosphatidylserine	1	Rhodiola rosea (Rhodiola)	1
Schisandra chinensis (Schisandra)	7, 18	Scutellaria lateriflora (Skullcap)	1
Stachys officinalis (Wood Betony)	4, 5, 15	Theacrine	5, 103
Theobromine	5, 11, 232	Tilia cordata (Small-leaf linden)	1
Tilia platyphyllos (Large-leaf linden)	1	Tilia x europaea (European linden)	1
Tinospora cordifolia (Guduchi)	5	Turnera diffusa (Damiana)	4, 7, 18
Valeriana officinalis (Valerian)	11	Withania somnifera (Ashwagandha)	1
Combination of ingredients resulting in a total caffeine content of 40 mg/day or more (e.g. Yerba mate and Guarana extracts)	as per the caffeine monograph	as per the caffeine monograph	as per the caffeine monograph

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 CONDITION(S)

Must be established in accordance with the requirements described in the Natural Health Products Regulations. Products containing Cod liver oil, Fish oil or Schizochytrium oil (except when encapsulated) Refrigerate after opening (Senanayake and Fichtali 2006; Wille and Gonus 1989). (information for industry; not for labelling) To be packaged in airtight container, protected from light (Ph.Eur. 2023; USP-NF 2023).

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. For the following ingredients please see the respective NNHPD monograph for additional quality requirements: Astragalus, American ginseng, Cod liver oil, Eleuthero, Fish oil, German chamomile-Oral, Ginkgo biloba, Hops, Licorice, Panax ginseng, St John's wort, L-Tyrosine, L-Theanine, Valerian.

REFERENCES

1 Do not use the fresh plant (Bone 2003; Hoffman 2003; Bradley 1992; BHP 1983). 2 Isolate 3 Synthetic Table 1.2. Proper name(s), Common name(s), Source information for ingredients with sedative action Proper name(s) Common name(s) Source information Source material(s) Part(s) Preparation(s) Eschscholzia californica California-poppy Eschscholzia californica Herb top Herb top flowering Dry Humulus lupulus Bine European hop Hop Hops Humulus lupulus Strobile Dry Passiflora incarnata Apricot-vine Maypop Maypop passionflower Passionflower Passiflora incarnata Herb top Dry Valeriana officinalis Common valerian Garden-heliotrope Garden valerian Valerian Valeriana officinalis Root Root and rhizome Dry References: Proper names: NHPID 2025; Common names: NHPID 2025; Source information: Hoffman 2003; Williamson et al. 1988. Table 1.3. Proper name(s), Common name(s), Source information for ingredients with cognitive support action Proper name(s) Common name(s) Source information Source ingredient(s) Source material(s) Organism group(s) Part(s) Preparation(s) (2R)-2-(Acetyloxy)-3-carboxy-N,N,N-trimethyl-1-propanaminium inner salt Acetyl carnitine Acetyl-L-carnitine arginate dihydrochloride 2 Acetyl L-carnitine hydrochloride 1N/AN/AN/AN/ABacopa monnieri Bacopa Moneywort Water hyssop N/ABacopa monnieri N/A Herb top Whole plant Dry 2-[[[(2R)-2,3-Dihydroxypropoxy]hydroxyphosphinyl]oxy]-N,N,N-trimethylethanaminium hydroxide • inner salt d-Choline hydroxide 2,3-dihydroxypropyl hydrogen phosphate inner salt L-alpha-Glycerolphosphorylcholine Choline alfoscerate Choline alfoscerate 1N/AN/AN/AN/ACHoline cytidine 5'-pyrophosphate (ester) Cytidine 5'-(trihydrogen diphosphate) P'-[2(trimethylammonio)ethyl] ester inner salt Cytidine 5'-diphosphocholine Citicoline Citicoline sodium 1 Citicoline 1N/AN/AN/AN/ACod liver oil Cod liver oil Lecoris Aselli Oleum N/AN/AGadidae 3 Liver N/A Eleutherococcus senticosus Ci wu jia Eleuthero Siberian ginseng N/A Eleutherococcus senticosus N/A Root Dry Fish oil Fish oil N/AN/AAmmodytidae Carangidae Clupeidae E ngraulidae Gadidae 3 Osmeridae Salmonidae Scombridae Whole N/AGinkgo biloba Ginkgo Ginkgo biloba Maidenhair tree Baiguolcho N/AGinkgo biloba N/A Leaf N/APanax ginseng Asian ginseng Chinese ginseng Hong shen Korean ginseng Korean red ginseng Oriental ginseng Panax ginseng Red ginseng Ren shen N/APanax ginseng N/A Root Rootlet Dry Phosphatidylserine Phosphatidylserine N/A Helianthus annuus 2N/A Seed N/APhosphatidylserine-enriched soy

lecithin1N/AN/AN/AN/APhosphatidylserine1N/AN/AN/AN/ARhodiola roseaHong jing
tianKing's-crownRhodiolaRoseroorootN/ARhodiola roseaN/ARootRoot and rhizomeDrySchizochytrium
spp.Schizochytrium OilN/ASchizochytrium spp.N/AWholeN/A(S)-alpha-Amino-4- hydroxybenzenepropanoic
acidL-TyrosineL-TyrosineTyrosineL-Tyrosine ethyl ester1N-Acetyl-L-tyrosine1N/AN/AN/AN/AWithania
somniaAsgandhAshwagandhaAsvagandhaWinter-cherryWithaniaN/AWithania somniferaN/ARootDry
References: Proper names: NHPID 2025; Common names: NHPID 2025; Source information: NHPID 2025;
Yurko-Mauro et al. 2010; Calabrese et al. 2008; Bone 2003; De Jesus Moreno Moreno 2003; API 2001; Parnetti
et al. 2001; Barbagallo et al. 1994; Parnetti et al. 1993; Canal et al. 1991. 1Synthetic 2Isolate 3For cod liver oil
and fish oil, the species common name can be listed as source information on the label instead of the organism
group. Fish oil corresponds to oil from the whole body of one or more of species of the families listed in the
table in its natural and/or concentrated triglyceride/triacylglycerol form and/or its concentrated esterified form.
Table 1.4. Proper name(s), Common name(s), Source information for caffeine and ingredients containing
caffeineProper name(s)Common name(s)Source informationSource ingredient(s)Source material(s)Part(s)Prep
aration(s)1,3,7-Trimethylxanthine3,7-Dihydro-1,3,7-trimethyl-1H-purine-2,6-dioneCaffeineCaffeine1Caffeine
citrate1N/AN/AN/AN/ACamellia sinensis2LeafN/AN/ACoffea arabica2Coffea canephora2SeedN/AN/ACola
acuminata2SeedN/AN/Allex paraguariensis2llex guayusa2LeafN/AN/APaullinia
cupana2SeedN/AN/ATheobroma cacao2SeedN/Allex paraguariensisBrazilian teaMateParaguayan
teaParaguay teaSt Bartholomew's teaYerba mateN/Allex paraguariensisLeafDryPaullinia
cupanaGuaranaN/APaullinia cupanaSeedDry References: Proper names: NHPID 2025; Common names:
NHPID 2025; Source information: EMA 2013; ESCOP 2009; Bradley 2006; Kennedy et al. 2004; Taylor 2003;
Barnes et al. 2002; BHP 1983. 1Synthetic 2Isolate. If caffeine is sourced fromCamellia sinensis, Coffea arabica,
Coffea canephora, Cola acuminata, Ilex paraguariensis, Ilex guayusa, Paullinia cupanaorTheobroma cacao, it
must be isolated and purified. Extracts ofIlex paraguariensisandPaullinia cupanamust be represented
separately. This monograph does not support extracts ofCamellia sinensis, Coffea arabica, Coffea canephora,
Cola acuminata, Ilex guayusaorTheobroma cacao. Table 1.5. Proper name(s), Common name(s), Source
information for ingredients with relaxation actionProper name(s)Common name(s)Source informationSource
ingredient(s)Source material(s)Part(s)4-Aminobutanoic acidGABAGamma-Aminobutyric
acidN/ALentilactobacillus hilgardii2Whole cell for biosynthesisN/ALeivactobacillus brevis2Whole cell for
biosynthesisN/ALaminaria japonica2Whole4-Aminobutanoic
acid1N/AN/AL-TheanineN-Ethyl-L-glutamineL-TheanineN/ACamellia sinensis2LeafL-Theanine1N/AN/A
References: Proper names: NHPID 2025; Common names: NHPID 2025; Source information: Kanehira et al.
2011; Abdou et al. 2006; Yamakoshi et al. 2006. 1Synthetic 2Isolate Table 1.6. Proper name(s), Common
name(s), Source information for ingredients with adaptogen actionProper name(s)Common name(s)Source
informationSource material(s)Part(s)PreparationAsparagus racemosusShatamuliShatavariAsparagus
racemosusRootDryAstragalus membranaceusAstragalusHuangqiHuang qiMembranaceus milk
vetchMembranous milk-vetchMilk vetch rootMo jia huang qiAstragalus membranaceusRootDryEleutherococcus
senticosusCi wu jiaEleutheroSiberian ginsengEleutherococcus senticosusRootRoot and
rhizomeDryGanoderma lucidumGanodermaLing zhiReishiGanoderma lucidumCultured myceliumfruiting
bodyMyceliumDryGlycyrrhiza glabraGuang guo gan caoLicoriceLiquoriceGlycyrrhiza glabraRootRoot and
stolonDryOcimum tenuiflorumHoly basilRama tulsiSacred basilTulsiOcimum tenuiflorumLeafDryPanax
ginsengAsian ginsengChinese ginsengHong shenKorean ginsengKorean red ginsengOriental ginsengPanax
ginsengRed ginsengRen shenPanax ginsengRootRootletDryPanax quinquefoliusAmerican ginsengOccidental
ginsengSangShangXi yang shenPanax quinquefoliusRootDryRhodiola roseaHong jing
tianKing's-crownRhodiolaRoseroorootRhodiola roseaRootRoot and rhizomeDrySchisandra chinensisChinese
MagnoliavineSchisandraWu wei ziSchisandra chinensisFruitDryTinospora cordifoliaGuduchiTinospora
cordifoliaStemDryWithania somniferaAsgandhAshwagandhaAsvagandhaWinter-cherryWithaniaWithania
somniaRootWhole plantDry References: Proper names: NHPID 2025; Common names: NHPID 2025;
Source information: Upton 2012; Winston and Kuhn 2008; Winston and Maimes 2007; WHO 2004; Bone 2003;
Hoffman 2003; Thomsen 2002; Williamson 2002; API 2001; Blumenthal et al. 2000; Upton 1999; WHO 1999;
Bradley 1992; BHP 1983. Table 1.7. Proper name(s), Common name(s), Source information for complementary
ingredientsProper name(s)Common name(s)Source informationSource ingredient(s)Source
material(s)Part(s)Preperation(s)[5R-(5alpha,9beta, 11E)]-5-Amino-11-ethylidene-5,6,9,
1-tetrahydro-7-methyl-5,9-methano cycloocta [b]pyridine-2(1H)-oneHuperzine AN/AHuperzia serrata2Whole
plantDryHuperzine
A1N/AN/AN/A7,9-Dihydro-1,3,7,9-tetramethyl-1H-purine-2,6,8(3H)-trioneTheacrineN/ACamellia
sinensis2LeafDryTheobroma grandiflorum2FruitDryTheacrine1N/AN/AN/A3,7-Dihydro-3,7-dimethyl-1H-purine-
2,6-dione3,7-DimethylxanthineTheobromineN/ATheobroma cacao2SeedDryTheobromine1N/AN/AN/AHuperzia
serrataToothed club-mossToge-shibaN/AHuperzia serrataWhole plantDry References: Proper names: NHPID
2025; Common names: NHPID 2025; Source information: NHPID 2025; Martinez-Pinilla et al. 2015; Ma et al.

2007; Kihlman 1977. 1Synthetic 2Isolate

	Common name(s)	Source information		
	Source material(s)	Part(s)	Preparation(s)	
	European pasqueflowerPasqueflowerPulsatilla	N/A	Anemone pulsatilla	Herb
	Common oatOatRed oatSide oatTree oat	N/A	Avena sativa	Seed
	GoatweedHypericumSt. John's wortSt. John's wort	N/A	Hypericum perforatum	Herb
5-Hydroxytryptophan	5-HTPL-5-Hydroxytryptophan	N/A	Griffonia simplicifolia2	Seed
	Saccharomyces cerevisiae2	Whole cell for biosynthesis	N/A	
	Escherichia coli2	Whole cell for biosynthesis	N/A	
	N/A	N/A	N/A	
	CatmintCatnepCatnipCatswortField balm	N/A	Nepeta cataria	Herb
	Blue chamomileChamomileCommon chamomile	N/A	German chamomileHungarian chamomile	Herb
	BalmBee balmLemon balmMelissa	N/A	Melissa officinalis	Herb
	American ginsengOccidental ginsengSangShen	N/A	Panax quinquefolius	Root
	Helmet flowerHoodwortMad-dog scullcapQuaker bonnet	N/A	ScullcapSkullcapVirginian skullcap	Herb
	Bishop's-wortPurple betonyWood betony	N/A	Stachys officinalis	Herb
	LindenLittleleaf lindenSmall-leaf European Linden	N/A	Small-leaf limeSmall-leaf lime treeSmall-leaf linden	Flow
	Big-leaf lindenBroadleaf limeLarge-leaf limeLarge-leaf linden	N/A	LindenTilia	Flow
	European Lime treeEuropean lindenLimeLime tree	N/A	LindenTilia	Flow
	Damiana	N/A	Turnera diffusa	Leaf
	AsgandhAshwagandhaAsvagandhaWinter-cherry	N/A	Withania	Root

Common name(s)	Common name(s)	Source information	
Source material(s)	Part(s)	Preparation(s)	
Eschscholzia californica	California-poppy	Eschscholzia californica	Herb topHerb top flowering
Humulus lupulus	BineEuropean hopHopHops	Humulus lupulus	Strobile
Passiflora incarnata	Apricot-vineMaypopMaypop passionflowerPassiflora	Passiflora incarnata	Herb top
Valeriana officinalis	Common valerianGarden-heliotropeGarden valerian	Valeriana officinalis	RootRoot and rhizome

Common name(s)	Source information		
Source material(s)	Organism group(s)	Part(s)	Preparation(s)
Acetyl-L-carnitine inner salt	Acetyl-L-carnitine arginate dihydrochloride2	Acetyl L-carnitine hydrochloride1	N/A
Bacopa monnieri	N/A	Bacopa monnieri	N/A
Choline bitartrate	Choline bitartrate1	Choline hydroxide 2,3-dihydroxypropylhydrogen phosphate inner salt	N/A
Cytidine 5'-diphosphate	Cytidine 5'-diphosphate	Cytidine 5'-diphosphate	N/A

oilLecoris Aselli Oleum	N/A	N/A	Gadidae3
leutheroSiberian ginseng	N/A	Eleutherococcus senticosus	N/A
	N/A	N/A	AmmodytidaeCarangidaeClu
nkgo bilobaMaidenhair treeBaiguod	N/A	Ginkgo biloba	N/A
engChinese ginsengHong shenKorea ginsengKorean red ginsengOriental ginseng	N/A	Red ginseng	N/A
dyLserine	N/A	Helianthus annuus2	N/A
	N/A	N/A	N/A
	N/A	N/A	N/A
tianKing's-crownRhodiolaRoseroo	N/A	Rhodiola rosea	N/A
trium Oil	N/A	Schizochytrium spp.	N/A
Tyrosine	L-Tyrosine ethyl ester1N-Acetyl-L-tyrosine1	N/A	N/A
shwagandhaAsvagandhaWinter-cherry	N/AWithania	Withania somnifera	N/A

ne(s)	Common name(s)	Source information	
redient(s)	Source material(s)	Part(s)	Preparation(s)
nylxanthine3,7-Dihydro-1,3,7-trimethyl-	Caffeine1Caffeine citrate1	Caffeine1Caffeine citrate1	N/A
	Camellia sinensis2	Leaf	N/A
	Coffea arabica2Coffea canephora2	Seed	N/A
	Cola acuminata2	Seed	N/A
	Ilex paraguariensis2Ilex guayusa2	Leaf	N/A
	Paullinia cupana2	Seed	N/A
	Theobroma cacao2	Seed	N/A
riensis	Brazilian teaMateParaguayan teaParaguay tea	St. Bartholomew's teaYerba mate	Ilex paraguariensis
ana	Guarana	N/A	Paullinia cupana

	Common name(s)	Source information		
	Source material(s)	Part(s)		
	GABAgamma-Aminobutyric acid	N/A	Lentilactobacillus hilgardii2	Whole c
	Levilactobacillus brevis2	Whole cell for biosynthesis		
	Laminaria japonica2	Whole		
	N/A	N/A		
	L-Theanine	N/A	Camellia sinensis2	Leaf
	N/A	N/A		

e(s)	Common name(s)	Source information	
al(s)	Part(s)	Preparation	

racemosus	ShatamuliShatavari	Asparagus racemosus	Root
membranaceus	AstragalusHuangqiHuang qiMembranaceus	Astragalus membranaceusMilk-vetchMilk vetch root	Root
us senticosus	Ci wu jiaEleutheroSiberian ginseng	Eleutherococcus senticosus	RootRoot and rhizome
lucidum	GanodermaLing zhiReishi	Ganoderma lucidum	Cultured myceliumfruiting bodyMycelium
glabra	Guang guo gan caoLicoriceLiquorice	Glycyrrhiza glabra	RootRoot and stolon
florum	Holy basilRama tulsiiSacred basilTulsi	Ocimum tenuiflorum	Leaf
	Asian ginsengChinese ginsengHong shenKorean ginsengKorean red ginsengOriental ginseng	Asian ginseng	Root
folius	American ginsengOccidental ginsengSang ShengXing ginseng	American ginseng	Root
rosea	Hong jing tianKing's-crownRhodiolaRoseroot	Rhodiola rosea	RootRoot and rhizome
chinesis	Chinese MagnoliavineSchisandraWu wei zi	Schisandra chinensis	Fruit
cordifolia	Guduchi	Tinospora cordifolia	Stem
anifera	AsgandhAshwagandhaAsvagandhaWinter-cherryWithania	Withania anifera	RootWhole plant

Chemical name(s)	Common name(s)	Source information		
Ingredient(s)	Source material(s)	Part(s)	Preperation(s)	
[9beta, 11E)]-5-Amino-11-ethylindole-5,6,9-trihydro-7-methyl-5,9-methano-1H-pyridine-2(1H)-one	Huperzine A	N/A	N/A	
1	N/A	N/A	N/A	
1,3,7,9-tetramethyl-1H-purine-2,6-dione	Camellia	N/A	Camellia sinensis2	Leaf
grandiflorum2	Fruit	Dry		
	N/A	N/A	N/A	
1,3,7-dimethyl-1H-purine-2,6-dione	Theobromine	N/A	Theobroma cacao2	Seed
e1	N/A	N/A	N/A	
serrata	Toothed club-mossToge-shiba	N/A	Huperzia serrata	Whole plant

Purposes1	Medicinal Ingredients	Methods of preparation	Doses/day2
Used in Herbal Medicine to help relieve restlessness (Sedative)	Andrographis (Sage/Leaved) (Herb)	(Dry, Powdered)Non-Standardized Ethanolic Extracts (Dry extract, Decoction, Infusion)	Extracts (Dry extract, Decoction, Infusion)
Standardized Aqueous Extracts (Dry extract, Decoction, Infusion)			
Herb (Oat)	Dry, Powdered, Non-Standardized Ethanolic Extracts (Dry extract, Decoction, Infusion)	Extracts (Dry extract, Decoction, Infusion)	Extracts (Dry extract, Decoction, Infusion)
Herb (Catnip)	Dry, Powdered, Non-Standardized Extracts (Dry extract, Decoction, Infusion)	Extracts (Dry extract, Decoction, Infusion)	Extracts (Dry extract, Decoction, Infusion)
Herb (American ginseng)	Dry, Powdered, Non-Standardized Extracts (Dry extract, Decoction, Infusion)	Extracts (Dry extract, Decoction, Infusion)	Extracts (Dry extract, Decoction, Infusion)
Herb (Small-leaf linden)	Dry, Powdered, Non-Standardized Extracts (Dry extract, Decoction, Infusion)	Extracts (Dry extract, Decoction, Infusion)	Extracts (Dry extract, Decoction, Infusion)
Herb (Large-leaf linden)	Dry, Powdered, Non-Standardized Extracts (Dry extract, Decoction, Infusion)	Extracts (Dry extract, Decoction, Infusion)	Extracts (Dry extract, Decoction, Infusion)
Herb (European Linden)	Dry, Powdered, Non-Standardized Extracts (Dry extract, Decoction, Infusion)	Extracts (Dry extract, Decoction, Infusion)	Extracts (Dry extract, Decoction, Infusion)
Herb (Damiana)	Dry, Powdered, Non-Standardized Ethanolic Extracts (Dry extract, Decoction, Infusion)	Extracts (Dry extract, Decoction, Infusion)	Extracts (Dry extract, Decoction, Infusion)
Used in Herbal Medicine to help relieve restlessness (Sedative)	Andrographis (Sage/Leaved) (Herb)	(Dry, Powdered)Non-Standardized Extracts (Dry extract, Decoction, Infusion)	Extracts (Dry extract, Decoction, Infusion)
Used in Herbal Medicine to help relieve restlessness (Sedative)	Andrographis (Sage/Leaved) (Herb)	(Dry, Powdered)Non-Standardized Extracts (Dry extract, Decoction, Infusion)	Extracts (Dry extract, Decoction, Infusion)
Used in Herbal Medicine to help relieve sleep disturbances associated with depression (L-5-HTP)		N/A	100-200 milligrams, per day

y) used in Herbal Medicine to help improve circulation (German chamomile) (Dry, Powdered, Non- Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion)	Malabar nut (Garcinia indica) (Dry, Powdered, Non- Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion)
cinalis(Lemon balm)	Dry, Powdered, Non- Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion)
ateriflora(Skullcap)	Dry, Powdered, Non- Standardized Ethanolc (25-60 grams dried whole plant/herb top extract, per day)
rdized Aqueous Extracts (Dry extract, Decoction, Infusion), per day	
cinalis(Wood betony)	Dry, Powdered, Non- Standardized Ethanolc (25-60 grams dried whole plant/herb top extract, per day)
t used in Ayurveda to balance agni (Vitellaria indica) (Dry, Powdered, Non- Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion)	Used, Powdered, Non- Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion)

Purposes1	Medicinal Ingredients	Methods of preparation	Doses/day2
ly) used in Herbal Medicine as a sedative (California poppy) AND/Or Traditionally Used in Standardized Medicines (Dry extract, Tincture, Fluid extract, Decoction, Infusion)	Eschscholzia californica(California poppy) AND/Or Traditionally Used in Standardized Medicines (Dry extract, Tincture, Fluid extract, Decoction, Infusion)		
bulus(Hops)	Dry, Powdered, Non-Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion)		
ncarnata(Passionflower)	Dry, Powdered, Non- Standardized Ethanolc (25-60 grams dried whole plant/herb top extract, per day)		
rdized Aqueous Extracts (Dry extract, Decoction, Infusion), per day			
y used in Herbal Medicine as a) sleep aid (to help promote sleep.AND/Or Traditionally Used in Standardized Medicines (Dry extract, Tincture, Fluid extract, Decoction, Infusion)	Valeriana officinalis (Valerian root) AND/Or Traditionally Used in Standardized Medicines (Dry extract, Tincture, Fluid extract, Decoction, Infusion)		
d Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion) rhizome, per day3; Not to exceed 3.6 grams per single dose and: 0.05-0.90% valerenic acidOR0.10-0.90% sesquiterpenic acids			

Purposes1	Medicinal Ingredients	Methods of preparation	Doses/day2
port cognitive/brain health/function.	Acetylcarnitine	N/A	1.5-4 grams, per day
nnieri(Bacopa)	Standardized Extracts (Dry extract)	300 milligrams dried whole plant/herb top extract, per day, standardized to 4	
	Standardized fixed oil	18 years:0.77-4 grams cod liver oil, per dayAnd150-1,360 milligrams EPA +	
d older:0.77-4 grams cod liver oil, per dayAnd150-1,360 milligrams EPA + DHA		A including at least 100 milligrams DHA, per dayAnd138-3,000 micrograms F	
cerophosphorylcholine (Choline and Acetate)	N/A	1.2 grams, per day	
	Standardized fixed oil	150-5,000 milligrams EPA and DHA including at least 100 milligrams DHA,	
lserine	N/A	300 milligrams, per day	
um oil	Standardized fixed oil	200-2,000 milligrams DHA, per day	
upport memory	Bacopa monnieri(Bacopa)	Standardized Extracts (Dry extract)	300 milligrams dried whole plant
used in Ayurveda for memory enhancement (Bacopa monnieri(Bacopa)	Bacopa monnieri(Bacopa)	Dry, Powdered, Non- Standardized Ethanolc (25-60 grams dried whole plant/herb top extract, per day)	
mnifera(Ashwagandha)	Dry, Powdered, Non- Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion)		
improve sustained attention.	Citicoline	N/A	250-1000 milligrams per day; not to exceed 500 milligrams per single dose
upport cognitive health and/or brain function in older adults.	N/A	500-1000 milligrams per day; not to exceed 500 milligrams per single dose	
bal Medicine to help improve memory (Elephantopus scaber(Elephantopus scaber) extract)	Elephantopus scaber(Elephantopus scaber) extract	Dry, Powdered, Non-Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion)	
enhance cognitive function and/or memory (Ginkgo biloba(Ginkgo)	Ginkgo biloba(Ginkgo)	Standardized Extracts (Dry extract)	80-240 milligrams of extract, per day
rbal Medicine to) help(s) support cognitive function (Panax ginseng(Panax ginseng) mental fatigue (Dry, Powdered, Non- Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion)	Panax ginseng(Panax ginseng) AND/Or Traditionally Used in Standardized Medicines (Dry extract, Tincture, Fluid extract, Decoction, Infusion)		
d Extracts (Dry extract)	200-600 milligrams of extract, per day; standardized to 4-7% total ginsenosides; Not to exceed a quantity crude equivalent to 1.2-1.8 grams dried root/root and rhizome extract, per day		
rbal Medicine) (to) help(s) support cognitive function (Rhodiola rosea(Rhodiola)	Rhodiola rosea(Rhodiola)	Tincture (stamina)	1.2-1.8 grams dried root/root and rhizome extract, per day
d Extracts (Dry extract)	144-680 milligrams of dried root/root and rhizome extract, per day; Not to exceed 200 milligrams per single dose and:0.8-1.2% rosavonic acidOR0.1-0.2% salidroside		
crease cognitive fatigue due to physical stress (Toothache) (N/A)	Toothache (N/A)	N/A	10-20 grams, per day; Not to exceed 10-20 grams, per day

Purposes1	Medicinal Ingredients	Methods of preparation	Doses/day2
temporarily) (to) promote alertness and wakefulness, and (to) (Caffeine) cognitive performance AND/OR Helps (temporarily) (to) relieve mental fatigue, tiredness, and	Yerba mate (Yerba mate)	N/A	100-400 milligrams, per day;
	Standardized Extracts (Dry extract, Tincture, Extracts, Fluid extract)	Fluid extract, Decoction, caffeine corresponding to a maximum Quantity Crude Equivalent of 2-6 grams dried leaf, per day and not exceed 200 milligrams of caffeine	
	Guarana (Guarana)	Standardized Ethanolic Extracts (Dry extract, Extracts, Fluid extract)	Extracts, Fluid extract) caffeine corresponding to a maximum Quantity Crude Equivalent of 2-6 grams dried leaf, per day and not exceed 200 milligrams of caffeine
Global Medicine to help temporarily promote alertness and wakefulness, and to enhance mental alertness	Yerba mate (Yerba mate)	Standardized Ethanolic Extracts (Dry extract, Extracts, Fluid extract)	Extracts, Fluid extract) caffeine corresponding to a maximum Quantity Crude Equivalent of 2-6 grams dried leaf, per day and not exceed 200 milligrams of caffeine
	Standardized Aqueous Extracts (Dry extract, Extracts, Fluid extract)	Extracts, Fluid extract) to caffeine corresponding to a Quantity Crude Equivalent of 2-6 grams dried leaf, per day and not exceed 200 milligrams of caffeine	
	Guarana (Guarana)	Standardized Ethanolic Extracts (Dry extract, Extracts, Fluid extract)	Extracts, Fluid extract) caffeine corresponding to a Quantity Crude Equivalent of 2-6 grams dried leaf, per day and not exceed 200 milligrams of caffeine
Purposes1	Medicinal Ingredients	Methods of preparation	Doses/day2
temporarily promote relaxation	4-Aminobutanoic acid (GABA)	N/A	50-3,000 milligrams, per day; 100-400 milligrams, per day;
	N/A	200-250 milligrams, per day	
Purposes1	Medicinal Ingredients	Methods of preparation	Doses/day2
Global Medicine as an adaptogen to help(s) (to) temporarily promote relaxation and (to) help(s) (to) temporarily promote alertness and wakefulness, and (to) help(s) (to) temporarily promote cognitive performance AND/OR Helps (temporarily) (to) relieve mental fatigue, tiredness, and	Asparagus racemosus (Shatavari)	Dry, Powdered, Non-Standardized Ethanolic Extracts (Dry extract, Tincture, Fluid extract)	2-4 grams (Dried root, per day; 100-400 milligrams, per day;
	membranaceus (Astragalus)	Dry, Powdered, Non-Standardized Ethanolic Extracts (Dry extract, Tincture, Fluid extract)	2-4 grams (Dried root, per day; 100-400 milligrams, per day;
	Schisandra chinensis (Schisandra)	Dry, Powdered, Non-Standardized Ethanolic Extracts (Dry extract, Tincture, Fluid extract)	2-4 grams (Dried root, per day; 100-400 milligrams, per day;
	Senticosus (Eleuthero)	Dry, Powdered, Non-Standardized Ethanolic Extracts (Dry extract, Tincture, Fluid extract)	2-4 grams (Dried root, per day; 100-400 milligrams, per day;
	Standardized Aqueous Extracts (Dry extract, Tincture, Fluid extract)	2-4 grams (Dried root, per day; 100-400 milligrams, per day;	
	Reishi (Reishi)	Dry, Powdered, Non-Standardized Ethanolic Extracts (Dry extract, Tincture, Fluid extract)	2-4 grams (Dried root, per day; 100-400 milligrams, per day;
	Decoction concentrate	3-15 grams dried cultured mycelium/ fruiting body/mycelium, per day	
	Standardized, Decoction concentrate	3-15 grams dried cultured mycelium/ fruiting body/mycelium, per day and not to exceed 40 % polysaccharides	
	Licorice (Licorice)	Dry, Powdered, Non-Standardized Ethanolic Extracts (Dry extract, Tincture, Fluid extract)	2-4 grams (Dried root, per day; 100-400 milligrams, per day;
	Holy basil (Holy basil)	Dry, Powdered, Non-Standardized Ethanolic Extracts (Dry extract, Tincture, Fluid extract)	2-4 grams (Dried root, per day; 100-400 milligrams, per day;
	Standardized Aqueous Extracts (Dry extract, Tincture, Fluid extract)	2-4 grams (Dried root, per day; 100-400 milligrams, per day;	
	Ginseng (Panax ginseng)	Dry, Powdered, Non-Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion)	0.5-9 grams (Dried root, per day; 100-400 milligrams, per day;
	Dried Extracts (Dry extract)	200-600 milligrams of extract, per day; standardized to 4-7% total ginsenosides; Not to exceed a quantity crude equivalent of 2-6 grams dried root, per day	
	American ginseng (American ginseng)	Dry, Powdered, Non-Standardized Ethanolic Extracts (Dry extract, Tincture, Fluid extract)	2-4 grams (Dried root, per day; 100-400 milligrams, per day;
	Standardized Aqueous Extracts (Dry extract, Tincture, Fluid extract)	2-4 grams (Dried root, per day; 100-400 milligrams, per day;	
	Rhodiola (Rhodiola)	Non-Standardized Ethanolic Extracts (Dry extract, Tincture, Fluid extract)	144-400 milligrams of dry extract and a quantity crude equivalent of 216-2,000 milligrams, per day;
		1.2-1.8 grams dried root/root and rhizome, per day	
	Dried Extracts (Dry extract)	144-680 milligrams of dried root/root and rhizome extract, per day; Not to exceed 200 milligrams per single dose and:0.8 grams per single dose	
	Schisandra (Schisandra)	Dry, Powdered, Non-Standardized Ethanolic Extracts (Dry extract, Tincture, Fluid extract)	2-4 grams (Dried root, per day; 100-400 milligrams, per day;
	Standardized Aqueous Extracts (Dry extract, Tincture, Fluid extract)	2-4 grams (Dried root, per day; 100-400 milligrams, per day;	
	Guduchi (Guduchi)	Dry, Powdered, Non-Standardized Ethanolic Extracts (Dry extract, Tincture, Fluid extract)	2-4 grams (Dried root, per day; 100-400 milligrams, per day;
	Decoction concentrate	20-30 grams dried stem, per day	
	Ashwagandha (Ashwagandha)	Dry, Powdered, Non-Standardized Ethanolic Extracts (Dry extract, Tincture, Fluid extract)	2-4 grams (Dried root, per day; 100-400 milligrams, per day;
Global adaptogen) (to) help(s) (to) temporarily promote relaxation and (to) help(s) (to) temporarily promote alertness and wakefulness, and (to) help(s) (to) temporarily promote cognitive performance AND/OR Helps (temporarily) (to) relieve mental fatigue, tiredness, and	Rhodiola rosea (Rhodiola)	Non-Standardized Ethanolic Extracts (Dry extract, Tincture, Fluid extract)	144-400 milligrams of dry extract and a quantity crude equivalent of 216-2,000 milligrams, per day;

	1.2-1.8 grams dried root/root and rhizome, per day	
Standardized Extracts (Dry extract)	144-680 milligrams of dried root/root and rhizome extract, per day; Not to exceed 200 milligrams per single dose and:0.8	
Used in Ayurveda as Rasayana (Asparagus racemosus(Shatavari)	Dry, Powdered, Non-Standardized Ethanolic Extracts (Dry extract, per day,	
Wormifera(Ashwagandha)	Dry, Powdered, Non- Standardized Extracts (Dry extract, Tincture, Fluid extract, Decoction, Infusion)	

Medicinal Ingredients	Methods of preparations	Doses/day1
Huperzia serrata(Toothed club-moss)	Standardized extracts (Dry extract)	Up to 20 milligrams extract standardized to huperzine
Huperzine A	N/A	Up to 200 micrograms, per day
Theacrine	N/A	Up to 300 milligrams, per day
Theobromine	N/A	Up to 850 milligrams, per day

Indication	e.g. Used in Herbal Medicine as a sleep aid		
Ingredients	Maximum Daily Recommended Dose on PLANA	Maximum Daily Monograph Reference Dose	Percentage of the Maximum D
Scutellaria californica(California-poppy)	0.5 g	3 g	0.5/3 = 16.67%
Humulus(Hops)	4 g	6 g	4/6 = 66.66%
Passiflora incarnata(Passionflower)	0.5 g	8 g	0.5/8 = 6.25%
Percentages			89.6%

Side Effect	Ingredients which may have an impact on heart rate and/or blood pressure		
Medicinal Ingredients	Maximum Daily/ Single Recommended Dose Maximum Daily/ Single Monograph Reference Dose	Maximum Daily/ Single Monograph Reference Dose	Percentage of the Maximum Daily
	100 mg	200 mg per single dose/400 mg per day	100/200 = 50% (single dose)100/4
Caffeine	120 mg	300 mg	120/300 = 40%
Theobromine	50 mg	850 mg	50/850 = 5.9%
Percentages			95.9% per single dose/ 70.9% per

Medicinal Ingredients	Risk Information	Durations of Use	Directions for use
1,7-Trimethylxanthine (Caffeine)	1		1
Gamma-aminobutyric acid (GABA)	5,16	2	
Acetyl-L-Carnitine (Acetylcarnitine)	5, 9, 23		
Pulsatilla nuttalliana(Pasqueflower)	4, 8, 17, 19, 22		
Asparagus racemosus(Shatavari)	6		
Astragalus membranaceus(Astragalus)	1		
Avena sativa(Oat)	4		
Bacopa monnieri(Bacopa)	5, 23		
Choline	5, 13, 14, 24		
Liver oil	1		

utherococcus senticosus(Eleuthero)	1	1	
hscholzia californica(California-poppy)	1		1
a oil	1		
oderma lucidum(Reishi)	1		1
xgo biloba(Ginkgo)	1	1	
cyrrhiza glabra(Licorice)	1	1	
nulus lupulus(Hops)	1		1
perzia serrata; Huperzine A	11, 12, 17, 20	2	
ericum perforatum(St. John's wort)	1	1	
paraguariensis(Yerba mate)	5, 10, 21, 25		
Hydroxytryptophan (L-5-HTP)	1	1	1
pha-Glycerophosphorylcholine (Choline alfoscerate)			
eanine	1		
tyrosine	1	1	1
ricaria chamomilla(German chamomile)	1		
issa officinalis(Lemon balm)	1		
eta cataria(Catnip)	1		
num tenuiflorum(Holy basil)	1		
ax ginseng(Asian ginseng)	1	1	
ax quinquefolius(American ginseng)	1		
isiflora incarnata(Passionflower)	1		1
llinia cupana(Guarana)	5, 10, 21, 25		
sphatidylserine	1		
odiola rosea(Rhodiola)	1		
isandra chinensis(Schisandra)	7, 18		
tellaria lateriflora(Skullcap)	1		
chys officinalis(Wood Betony)	4, 5, 15		
acrine	5, 10	3	
obromine	5, 11, 23	2	
cordata(Small-leaf linden)	1		
platyphyllos(Large-leaf linden)	1		
x europaea(European linden)	1		
spora cordifolia(Guduchi)	5		
hera diffusa(Damiana)	4, 7, 18		
eriana officinalis(Valerian)	1		1
hania somnifera(Ashwagandha)	1		
Combination of ingredients resulting in a total caffeine content of 40 mg/day or more (e.g. Yerba mate and Guarana extracts)	See the caffeine monograph		