

Natural product extract library

Cat code: 800ES / 800EL



List of plant species, parts and uses

Caithness Biotechnologies Ltd., 72 Boston Road, Leicester, UK, LE4 1HB.

Tel: +44 (116) 326 3802 | Company: 9395037 | VAT : 202 4512 64

contact@caithnessbiotechnologies.com | www.caithnessbiotechnologies.com

List of plant extracts included in the *Phytofitre* plant extract library

Notes:

Traditional uses are not exhaustive and many more uses than listed here are typically reported.

Likewise, notes are not exhaustive, but provide insight to rationale for inclusion in the library.

Aerial parts refers to all parts of the plant which grow above ground.

Extracts 001 to 400 are aqueous extracts, freeze-dried and resuspended in DMSO.

Extracts 401 to 800 correspond to the same plant parts as extracts 001 to 400, but are extracted in dichloromethane (CH₂Cl₂), evaporated to dryness and resuspended in DMSO.

001 Acacia Gum (*Acacia senegal*) [Part used: Resin]

Description: A small, thorny deciduous tree native to semi-desert regions of Sub-Saharan Africa, Pakistan and India. The extract is prepared from gum drained from cuts made in the bark of the tree.

Rationale for inclusion: Traditionally used to treat bleeding, bronchitis, diarrhea, gonorrhea, leprosy, typhoid fever and upper respiratory tract infections.

Notes: Contains hentriacontane, a solid, long-chain alkane.

002 Yarrow (*Achillea millefolium*) [Part used: Leaves]

Description: A small flowering plant native to temperate regions of the Northern Hemisphere.

Rationale for inclusion: Traditionally used to treat pain, fever, bleeding, gastrointestinal disorders, inflammation and stomach ache. Yarrow has also been used as a vegetable.

Notes: Reported to reduce disease severity in a mouse model of Multiple Sclerosis (Vazirinejad R, *et al.* Indian J Pharmacol 2014;46:303-8).

003 Calamus Root (*Acorus calamus*) [Part used: Root]

Description: A tall perennial wetland monocot of the Acoraceae family, introduced from Asia to Europe, North America and Australia.

Rationale for inclusion: Used in Chinese and Indian traditional medicine as a sedative, laxative, diuretic, and carminative.

Notes: Contains alpha-asarone, beta-asarone and eugenol. Beta-asarone inhibits adipogenesis in 3T3-L1 cells (Lee M-H *et al.* Food Chem 2011;126:1-7).

004 Kiwi fruit (*Actinidia deliciosa*) [Part used: Fruit]

Description: The kiwifruit or Chinese gooseberry (sometimes shortened to kiwi) is the edible berry of a woody vine in the genus *Actinidia*. Part used: flesh of fruit.

Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490). Kiwi-fruits have also been used to treat stones in the urinary tract and rheumatoid arthralgia.

Notes: Ethanol extract of peel protected neural cells from apoptosis induced by methylglyoxal through Nrf2 activation (Lee C *et al.* Pharm Biol. 2014;52:628-36).

005 Horse Chestnut (*Aesculus hippocastanum*) [Part used: Seed]

Description: A large deciduous tree, also called the conker tree, native to South East Europe now widely cultivated.

Rationale for inclusion: A Cochrane Review found evidence to suggest that Horse Chestnut Seed extract is efficacious for treatment of chronic venous insufficiency (Pittler MH, *et al.* Cochrane Database Syst Rev 2012;11:CD003230).

Notes: Horse chestnut seed is classified by the FDA as an unsafe herb - the glycoside and saponin constituents are considered toxic.

006 Button mushroom, chestnut mushroom (*Agaricus bisporus*) [Part used: Fungal fruiting body]

Description: An edible basidiomycete mushroom native to the grasslands in Europe and North America.

Rationale for inclusion: Dietary intake of white button mushrooms is inversely associated with the incidence of epithelial ovarian cancer in Chinese women (Lee *et al.* Int J Gynecol Cancer 2013;23:1400-5)

Notes: This is the most commonly consumed mushroom in the Western world.

007 Agrimony Herb (*Agrimonia eupatoria*) [Part used: Leaf]

Description: A deciduous, perennial herbaceous plant, flowering between June and September.

Rationale for inclusion: Traditionally used to treat wounds and impotence. Reported antibacterial activity against *Campylobacter jejuni* (Cwikla *et al.* *Phytother Res* 2010;24:649-56).

Notes: Contains volatile oils, flavonoids, apigenin, luteolin, quercetin, kaempferol, tiliroside, triterpene glycosides including euscaptic acid and tormentic acid.

008 Couch Grass, dog Grass (*Agropyron repens*) [Part used: Rhizome]

Description: A common perennial species of grass native to most of Europe and Asia.

Rationale for inclusion: Traditionally used to treat gout, rheumatic disorders, chronic skin conditions, and urinary tract, bladder, and kidney disorders.

Notes: A major chemical constituent is triticin (3% to 8%), a polysaccharide related to inulin.

009 Lady's Mantle Herb (*Alchemilla vulgaris*) [Part used: Leaf]

Description: A herbaceous perennial plant native to Europe.

Rationale for inclusion: Traditionally used to prevent bleeding, heal bruising and treat convulsive disorders.

Notes: Vasorelaxant properties of extracts of *Alchemilla vulgaris* have been reported *in vitro* (Takir *et al.* *Pharmacogn Mag* 2015;11:163-9)

010 Alkanet Root (*Alkanna tinctoria*) [Part used: Root]

Description: A plant of the borage family native to the Mediterranean region.

Rationale for inclusion: Traditionally used to treat ulcers, inflammation, jaundice and kidney stones.

Notes: Alkanet is also used in Indian food to colour some versions of the curry dish Rogan Josh.

011 Onion (*Allium cepa*) [Part used: Bulb]

Description: A cultivated and commonly consumed vegetable.

Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* *BMJ* 2014;349:g4490).

Notes: Rich in phenolic compounds.

012 Nigella seeds / Black onion seeds (*Nigella sativa*) [Part used: Seed]

Description: An annual flowering plant in the family Ranunculaceae, native to south and southwest Asia.

Rationale for inclusion: Traditionally used to treat a very wide range of conditions, including fever, cough, bronchitis, asthma, headache, dysmenorrhea, obesity, diabetes, paralysis, back pain, infection, rheumatism, hypertension, and gastrointestinal problems.

Notes: Despite the common name "Black onion", these seeds are not from *Allium cepa*. Contains thymoquinone, nigellone (dithymoquinone), melanthin, nigilline, damascenine, and trans-anethole.

013 Leek (*Allium porrum*) [Part used: Stem]

Description: A cultivated vegetable in the same family as onion and garlic.

Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* *BMJ* 2014;349:g4490).

Notes: *A. porrum* was reported to exhibit a hypolipidemic effect in cholesterol-fed rabbits (Movahedian *et al.* *J Med Food* 2006;9:98-101).

014 Garlic (*Allium sativum*) [Part used: Bulb]

Description: A cultivated vegetable in the same family as onion.

Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* *BMJ* 2014;349:g4490).

Notes: Antibacterial and cholesterol lowering effects of garlic have been reported (e.g. Ried *et al.* *Nutrition Reviews* 2013;71:282-99). Contains alliin, ajoene, vinylthiins and S-allylcysteine.

015 Chives (*Allium schoenoprasum*) [Part used: Leaf]

Description: A cultivated vegetable in the same family as onion.
Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).
Notes: Traditionally used to relieve sunburn. Insect-repelling properties have also been reported.

016 Lemon Verbena (*Aloysia citrodora*) [Part used: Leaf]

Description: A flowering plant of the family Verbenaceae, native to western South America.
Rationale for inclusion: Traditionally used to treat fevers and stomach spasms.
Notes: Contains verbascoside, citral, nerol and geraniol.

017 Galangal Root (*Alpinia officinarum*) [Part used: Rhizome]

Description: A plant in the ginger family, cultivated in Southeast Asia.
Rationale for inclusion: Traditionally used to treat bacterial infections, dyspepsia and loss of appetite.
Notes: Contains the flavonol galangin.

018 Marshmallow Herb (*Althaea officinalis*) [Part used: Aerial parts]

Description: A perennial species indigenous to Africa, used as a medicinal and ornamental plant.
Rationale for inclusion: Traditionally used to treat throat and gastric ulcers.
Notes: Extracts were reported to protect against indomethacin-induced peptic ulcer in rats (Zaghlool *et al.* J Nat Sci Biol Med 2015;6:421-8).

019 Marshmallow Root (*Althaea officinalis*) [Part used: Root]

Description: A perennial species indigenous to Africa, used as a medicinal and ornamental plant.
Rationale for inclusion: Traditionally used to treat throat and gastric ulcers.
Notes: Extract of marshmallow root was reported to improve symptoms of dry mouth in patients with hyposalivation (Skrinjar *et al.* Clin Oral Investig 2015;19:753-7).

020 Cashew nuts (*Anacardium occidentale*) [Part used: Seed]

Description: A tropical evergreen tree that produces the commonly consumed cashew nut.
Rationale for inclusion: Dietary intake of nuts is associated with lower all cause mortality and risk of a variety of diseases (e.g. van den Brandt *et al.* Int J Epidemiol 2015;44:1038-49).
Notes: Also used as a poultice traditionally to treat snake bites.

021 Pineapple (*Ananas comosus*) [Part used: Flesh of fruit]

Description: A tropical plant with an edible multiple fruit.
Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).
Notes: Bromelain, a mixture of proteolytic enzymes derived from pineapple, has been investigated for a variety of clinical used. Considered to have anti-inflammatory and antihelminthic properties.

022 Lemongrass (*Andropogon citratus*) [Part used: Leaf]

Description: A culinary herb in the grass family.
Rationale for inclusion: Traditionally used to treat anxiety, and as an antibacterial, and antifungal agent.
Notes: Contains citronellol, a vasodilating compound that reduces blood pressure in rats.

023 Pulsatilla (*Anemone pulsatilla*) [Part used: Leaf]

Description: A species of flowering plant belonging to the buttercup family native to Europe.
Rationale for inclusion: Traditionally used to relieve irregular menstruation.
Notes: Extract was reported to relax rabbit jejunum (Saify *et al.* Pak J Pharm Sci

1998;11:47-53).

024 Pasque Flower (*Anemone pulsatilla*) [Part used: Flower]

Description: A species of flowering plant belonging to the buttercup family native to Europe.
Rationale for inclusion: Traditionally used to relieve irregular menstruation.
Notes: Little studied.

025 Dill Seed (*Anethum graveolens*) [Part used: Seed]

Description: An annual herb in the celery family Apiaceae.
Rationale for inclusion: Traditionally used to treat jaundice, headache, boils, lack of appetite, stomach problems, nausea and liver problems.
Notes: Dill seed extract delayed and reduced seizures in a mouse model of epilepsy (Rostampour *et al.* Basic Clin Neurosci 2014;5:199-204).

026 Dill Weed (*Anethum graveolens*) [Part used: Leaf]

Description: An annual herb in the celery family Apiaceae.
Rationale for inclusion: Traditionally used to treat jaundice, headache, boils, lack of appetite, stomach problems, nausea and liver problems.
Notes: Dill supplements taken for 2 months were reported to reduce total cholesterol and triglycerides in man (Mirhosseini *et al.* J Res Med Sci 2014;19:758-61).

027 Angelica Herb (*Angelica archangelica*) [Part used: Leaf]

Description: A biennial plant from the Apiaceae family cultivated for its edible stems and roots.
Rationale for inclusion: Traditionally used to treat nervous disorders and cerebral diseases.
Notes: Extracts of the leaf are used to produce SagaPro, a supplement investigated for reduction of nocturia in man (Sigurdsson *et al.* Scand J Urol. 2013;47:26-32).

028 Angelica Root (*Angelica archangelica*) [Part used: Root]

Description: A biennial plant from the Apiaceae family cultivated for its edible stems and roots.
Rationale for inclusion: Angelica root has been used traditionally to treat disorders of the gastrointestinal and respiratory tracts, and also against fever and infections.
Notes: Extracts of Angelica root were reported to have antibacterial properties (Fraternale *et al.* J Med Food 2014;17:1043-7). Contains a-pinene, d-3-carene, limonene and a-phellandrene.

029 Angelica Seed (*Angelica archangelica*) [Part used: Seed]

Description: A biennial plant from the Apiaceae family cultivated for its edible stems and roots.
Rationale for inclusion: Traditionally used to treat nervous disorders and cerebral diseases.
Notes: Extracts of Angelica seed were reported to inhibit acetylcholinesterase (Sigurdsson *et al.* Z Naturforsch C. 2007;62:689-93).

030 Chinese Angelica [Dang Gui] (*Angelica sinensis*) [Part used: Root]

Description: A herb from the family Apiaceae, indigenous to China.
Rationale for inclusion: Used in traditional Chinese medicine to treat cardiovascular conditions, osteoarthritis, inflammation, headache, infections, anemia, fatigue and high blood pressure.
Notes: Polysaccharide from Chinese Angelica was reported to induces erythroid differentiation of human chronic myelogenous leukemia k562 cells (Wang *et al.* Asian Pac J Cancer Prev 2015;16:3715-21).

031 Chamomile Herb, Roman (*Anthemis nobilis*) [Part used: Flower]

Description: A low perennial plant found in dry fields and around gardens and cultivated grounds in Europe, North America, and Argentina.
Rationale for inclusion: Traditionally used to calm anxiety and settle stomachs.
Notes: Extracts were reported to inhibit quorum sensing of patient-derived *Pseudomonas* biofilms (Kazemian H *et al.* Rev Soc Bras Med Trop 2015;48:432-6).

032 Okra (*Abelmoschus esculentus*) [Part used: Seed pod]

Description: A flowering plant in the mallow family cultivated in tropical, subtropical and warm temperate regions for its edible seed pod.

Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).

Notes: Reported to have antidiabetic and antihyperlipidemic potential in streptozotocin-induced diabetic rats (Sabitha *et al.* J Pharm Bioallied Sci 2011;3:397-402).

033 Celery Seed (*Apium graveolens*) [Part used: Seed]

Description: A cultivated variety in the family Apiaceae, commonly used as a vegetable.

Rationale for inclusion: Traditionally used to treat colds, flu, arthritis, nervousness and hysteria.

Notes:

Extract of celery seed was reported to inhibit peroxide-induced macrophage injury via the Notch1/NF-kB pathway (Si *et al.* Am J Chin Med. 2015;43:443-55).

034 Peanuts (*Arachis hypogaea*) [Part used: Seed]

Description: Also called the groundnut, a legume widely grown in the tropics and subtropics.

Rationale for inclusion: Dietary intake of nuts is associated with lower all cause mortality and risk of a variety of diseases [e.g. van den Brandt *et al.* Int J Epidemiol 44:1038-49 (2015)].

Notes: Peanut skins contain resveratrol.

035 Burdock Herb (*Arctium lappa*) [Part used: Leaf]

Description: A Eurasian plant in the sunflower family, cultivated for its edible root which is used medicinally and as a vegetable.

Rationale for inclusion: Traditionally used to treat colds, catarrh, acne and eczema.

Notes:

Extracts of leaves of *Arctium lappa* were found to inhibit gastric ulcer formation (Carlotto *et al.* Talanta 2015;135:50-7), and contain several mono- and dicaffeoylquinic acids.

036 Burdock Root (*Arctium lappa*) [Part used: Root]

Description: A Eurasian plant in the sunflower family, cultivated for its edible root which is used medicinally and as a vegetable.

Rationale for inclusion: Burdock roots are used traditionally as a diuretic, diaphoretic, and a blood purifying agent.

Notes: Contains polyacetylenes, sulfurous acetylene compounds and guaianolide-type compounds.

037 Uva Ursi Herb (*Arctostaphylos uva ursi*) [Part used: Leaves]

Description: Also referred to as bearberry, a small procumbent woody groundcover shrub.

Rationale for inclusion: Traditionally used to treat bacterial infections, particularly of the urinary tract, also contact dermatitis, allergic reaction-type hypersensitivity, and arthritis.

Notes: Contains the glycoside arbutin, which has antimicrobial properties and acts as a mild diuretic.

038 Horseradish (*Armoracia rusticana*) [Part used: Root]

Description: A perennial plant of the Brassicaceae family native to southeastern Europe and western Asia.

Rationale for inclusion: The root is used traditionally to treat stomach ulcers, bacterial infections and fever.

Notes: Contains sinigrin (a glucosinolate) which is converted to allyl isothiocyanate on cell lysis.

039 Southernwood Herb (*Artemisia abrotanum*) [Part used: Leaves]

Description: A flowering plant in the sunflower family which is native to Eurasia and Africa.

Rationale for inclusion: Traditionally used as an emmenagogue, anthelmintic and antiseptic agent.

Notes:

The volatile oil of the leaves is an insect repellent.

040 Wormwood (*Artemisia absinthium*) [Part used: Aerial parts]

Description: An ornamental plant native to temperate regions of Eurasia and Northern Africa.
Rationale for inclusion: Traditionally used to stimulate appetite and relieve indigestion.
Notes: It is an ingredient in the spirit absinthe. Contains thujone, a GABAA receptor antagonist that can cause epileptic-like convulsions and kidney failure when ingested in large amounts (Olsen *et al.* PNAS 2000;97:44178).

041 Tarragon Herb (*Artemisia dracunculus*) [Part used: Leaves]

Description: A perennial herb in the sunflower family, widespread across Eurasia and North America
Rationale for inclusion: Traditionally used to treat anorexia and dyspepsia.
Notes: Contains estragole, which is reported to be a carcinogen and teratogen in mice. Also contains methyl chavicol and methyl eugenol.

042 Mugwort Herb (*Artemisia vulgaris*) [Part used: Aerial parts]

Description: A tall herbaceous perennial plant native to temperate Europe and Asia.
Rationale for inclusion: Used in traditional Chinese medicine for moxibustion.
Notes: Extracts of the leaf were reported to have anti-malarial properties (Bamunuarachchi *et al.* J Vector Borne Dis 2014;51:286-93).

043 Kelp (*Ascophyllum nodosum*) [Part used: Whole marine macroalga]

Description: A common, large brown alga (seaweed) of the northern Atlantic Ocean.
Rationale for inclusion: Traditionally used as an expectorant and anti-rheumatic agent.
Notes: Extracts of kelp significantly reduced the secretion of inflammatory cytokines (TNF-alpha and IL-6) by LPS-stimulated macrophages (Tamanai-Shacoori *et al.* PLoS One 2014;9:e105475).

044 Pleurisy Root (*Asclepias tuberosa*) [Part used: Root]

Description: A perennial species of milkweed native to eastern North America.
Rationale for inclusion: Traditionally used to treat lung conditions, diarrhoea, dysentery, rheumatism, and eczema.
Notes: Extracts of pleurisy root stimulated proliferation of human skin fibroblasts (Warashina *et al.* Phytochemistry 2011;72:1865-75).

045 Asparagus (*Asparagus officinalis*) [Part used: Stem]

Description: A flowering perennial plant species cultivated for the edible stem.
Rationale for inclusion: Traditionally used to treat infertility and lack of libido.
Notes: Extracts of asparagus were reported to inhibit activation of hepatic stellate cells (Zhong *et al.* J Agric Food Chem 2015;63:6027-34).

046 Shatavari Root (*Asparagus racemosus*) [Part used: Root]

Description: A flowering perennial plant common throughout Nepal and India.
Rationale for inclusion: Traditionally used to treat gastric ulcers, dyspepsia and as a galactagogue.
Notes: Contains steroidal saponins called shatavarins. Extracts of root were reported to act as mosquito repellents (Govindarajan *et al.* Parasitol Res 2015;114:601-12).

047 Woodruff (*Asperula odorata*) [Part used: Leaves]

Description: A flowering perennial plant in the family Rubiaceae, native to much of Europe.
Rationale for inclusion: Traditionally used as a moth repellent, and also to treat digestive and liver disorders.
Notes: Sometimes used as a flavoring agent.

048 Astragalus [Huang Qi] (*Astragalus propinquus*) [Part used: Root]

Description: A flowering perennial plant in the family Fabaceae.

Rationale for inclusion: One of the 50 fundamental herbs used in traditional Chinese medicine, used traditionally to treat diabetes.
Notes: Extract reported to activate the telomerase enzyme [r9].

049 Atractylodes [Bai-Zhu] (*Atractylodes macrocephala*) [Part used: Rhizome]

Description: A member of the sunflower family.
Rationale for inclusion: Traditionally used to treat lack of appetite, diarrhea, dizziness, palpitation, edema and sweating.
Notes: Polysaccharides extracted from *A. macrocephala* were reported to reduce incidence of bovine mastitis (Xu *et al.* BMC Vet Res 2015;11:165).

050 Oats seed (*Avena sativa*) [Part used: Seed]

Description: A cereal grain grown for human and animal consumption.
Rationale for inclusion: Consumption of oats is reported to reduce serum LDL-cholesterol in human dietary studies (Zhu *et al.* Nutr Metab Cardiovasc Dis 2015;25:714-23).
Notes: Contains large quantities of beta glucan.

051 Oatstraw (*Avena sativa*) [Part used: Leaf]

Description: A cereal grain grown for human and animal consumption.
Rationale for inclusion: Infusions of oat straw has been used traditionally to treat multiple sclerosis, and externally as a treatment for rheumatism.
Notes:

052 Neem Leaf (*Azadirachta indica*) [Part used: Leaf]

Description: A tree in the mahogany family Meliaceae, native to the Indian subcontinent.
Rationale for inclusion: Traditionally used for anthelmintic, antifungal, antidiabetic, antibacterial, antiviral, contraceptive and sedative properties.
Notes: Extracts of neem were reported to be toxic to *E. coli* O157 (Ravva *et al.* Int J Environ Res Public Health 2015;12:7794-803).

053 Horehound Black (*Ballota nigra*) [Part used: Aerial parts]

Description: A perennial herb of the family Lamiaceae, native to the Mediterranean region and central Asia.
Rationale for inclusion: Traditionally used to relieve nausea and vomiting (anti-emetic).
Notes: Contains diterpenoids including marrubiin, ballonigrin, ballotinone, ballotenol and 7-acetoxymarrubiin.

054 Feijoa (*Acca sellowiana*) [Part used: Fruit]

Description: A flowering plant in the myrtle family, native to the highlands of South America.
Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).
Notes: Traditionally used to treat goiter.

055 Wild Indigo (*Baptisia tinctoria*) [Part used: Root]

Description: An herbaceous perennial plant in the family Fabaceae, native to North America.
Rationale for inclusion: Traditionally used to dress ulcers and wounds.
Notes: Contains the glucosids baptisin and baptin.

056 Buchu (*Barosma betulina* / *Agathosma betulina*) [Part used: Aerial parts]

Description: A flowering plant native to South Africa.
Rationale for inclusion: Traditionally used to treat stomach pain, cystitis urethritis and nephritis.
Notes: Contains isomenthone and diosphenol.

057 Oregon Mountain Grape (*Berberis aquifolium* / *Mahonia aquifolium*) [Part used: Leaves]

Description: An evergreen shrub in the family Berberidaceae, native to North America.
Rationale for inclusion: Traditionally used to treat eczema and psoriasis.

Notes: Contains 5'-methoxyhydnocarpin, a specific multidrug resistance pump inhibitor (Stermitz et al. PNAS 2000;97:1433-7).

058 Barberry Bark (*Berberis vulgaris*) [Part used: Bark]

Description: A shrub native to Europe, northwest Africa and western Asia.

Rationale for inclusion: Traditionally used to treat liver and gallbladder problems.

Notes:

A rich source of berberine, a compound with anti-inflammatory and anti-microbial properties.

059 Brazil nuts (*Bertholletia excelsa*) [Part used: Seed]

Description: A South American tree in the family Lecythidaceae.

Rationale for inclusion: Dietary intake of nuts is associated with lower all cause mortality and risk of a variety of diseases [e.g. van den Brandt et al. Int J Epidemiol 44:1038-49 (2015)].

Notes: Brazil nut oil was reported to improve control of dental biofilms in man (Filogônio et al. Braz Oral Res 2011;25:556-61).

060 Beetroot (*Beta vulgaris subsp. vulgaris*) [Part used: Tuber]

Description: A commonly consumed root vegetable.

Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, et al. BMJ 2014;349:g4490).

Notes: Also traditionally used to treat fevers and constipation.

061 Birch Leaves (*Betula alba*) [Part used: Leaf]

Description: A tree in the family Betulaceae, native to Europe and parts of Asia.

Rationale for inclusion: Traditionally used to treat high blood pressure, high cholesterol, obesity, gout, kidney stones, nephritis, cystitis and respiratory diseases.

Notes: Also used externally to treat eczema and psoriasis.

062 Annatto Seed (*Bixa orellana*) [Part used: Seed]

Description: A shrub native to the tropical regions of the Americas.

Rationale for inclusion: Traditionally used as a laxative, diuretic, antibilious, and antiemetic agent.

Notes:

Contains the fat-soluble carotenoid bixin.

063 Porcini/Cep mushroom (*Boletus edulis*) [Part used: Fruiting body]

Description: A commonly consumed basidiomycete fungus.

Rationale for inclusion: *B. edulis* has reported antiviral activity against Vaccinia virus *in vitro* (Kandefer-Szersen et al. 1980;16:215-20).

Notes: Contains ergosterol peroxide, a steroid derivative with antimicrobial and anti-inflammatory activity, and cytotoxicity to various tumor cell lines *in vitro* (Krzyczkowska et al. Food Chem 2008;113:351-55).

064 Borage (*Borago officinalis*) [Part used: Leaves]

Description: Also called starflower, an annual herb native to the Mediterranean region.

Rationale for inclusion: Traditionally used to treat colic, cramps, diarrhea, asthma, bronchitis and high blood pressure.

Notes: A methanol extract of borage has shown amoebicidal activity *in vitro*, particularly against *Entamoeba histolytica* (Leos-Rivas et al. J Med Food 2011;14:866-869).

065 Mustard Seed Black (*Brassica nigra*) [Part used: Seed]

Description: An annual cultivated for its seeds, which are commonly used as a spice.

Rationale for inclusion: Traditionally used as a cough suppressant, or to treat respiratory infections.

Notes:

Anti-fungal activity of mustard seed oil has been reported (Mejía-Garibay et al. J Food Prot 2015;78:843-8).

066 Broccoli (*Brassica oleracea*) [Part used: Flower head]

Description: An edible green plant in the cabbage family eaten as a vegetable.

Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause

inclusion: mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).
Notes: Contains indole-3-carbinol, a compound which promotes cellular DNA repair and inhibits growth of transformed cells *in vitro*. (Dashwood *et al.* Carcinogenesis 1989;10:175-81).

067 Cauliflower (*Brassica oleracea*) [Part used: Flower head]

Description: An edible annual plant in the family Brassicaceae.
Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).
Notes: Contains kaempferol, ferulic acid, cinnamic acid, caffeic acid and isothiocyanate sulforaphane.

068 Kale (*Brassica oleracea acephala*) [Part used: Leaves]

Description: A green vegetable in the family Brassicaceae cultivated for its edible leaves.
Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).
Notes: Contains sulforaphane and also bile acid sequestrant resins, which decrease absorption of dietary fat and lower cholesterol (Kim *et al.* Biomed Envir Sci 2008;2:91-97).

069 Cabbage (*Brassica oleracea capitata*) [Part used: Leaves]

Description: A green vegetable in the family Brassicaceae cultivated for its edible leaves.
Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).
Notes: Contains sulforaphane and indole-3-carbinol. Epidemiological studies suggest that dietary intake of cruciferous vegetables, including cabbage, may protect against colon cancer (Tse *et al.* Nutr Cancer 2014;66:128-139).

070 Brussels sprout (*Brassica oleracea gemmifera*) [Part used: Leaves]

Description: A green vegetable in the family Brassicaceae cultivated for its edible leaves.
Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).
Notes: Epidemiological studies suggest that dietary intake of cruciferous vegetables, including brussels sprouts, may protect against colon cancer (Tse *et al.* Nutr Cancer 2014;66:128-139).

071 Andrographis herb (*Andrographis paniculata*) [Part used: Aerial parts]

Description: An annual herbaceous plant in the family Acanthaceae, native to India and Sri Lanka.
Rationale for inclusion: Traditionally used to treat respiratory infections, ulcerative colitis and rheumatic symptoms.
Notes: Extracts of Andrographis exhibited anti-inflammatory effects and antioxidant actions in mice (Xia *et al.* J Immunol 2004;173:4207-17).

072 Pak choi (*Brassica rapa chinensis*) [Part used: Leaves]

Description: A vegetable cultivated mainly in China for the edible leaves.
Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).
Notes: Contains glucosinolates.

073 Marigold flowers (*Calendula officinalis*) [Part used: Flower]

Description: A flowering plant in the family Asteraceae, native to southern Europe.
Rationale for inclusion: Extracts of *C. officinalis* are reported to exhibit antibacterial and antifungal activities (Efstratiou *et al.* Complement Ther Clin Pract 2012;18:173-176).
Notes: Extracts of Marigold are widely used in cosmetics.

074 Marigold Petals (*Calendula officinalis*) [Part used: Petal]

Description: A flowering plant in the family Asteraceae, native to southern Europe.
Rationale for inclusion: Extracts of *C. officinalis* are reported to exhibit antibacterial and antifungal activities (Efstratiou *et al.* Complement Ther Clin Pract 2012;18:173-176).

Notes: The petals are particularly rich in triterpenoid esters and the carotenoids flavoxanthin and auroxanthin.

075 Heather Flowers (*Calluna vulgaris*) [Part used: Flower]

Description: A low-growing perennial shrub native to Europe and Asia Minor.

Rationale for inclusion: Traditionally used to treat disorders of the kidneys and urinary tract.

Notes:

Anti-viral activity of heather extracts has been reported (García-Risco *et al.* Virus Res 2015;198:9-14).

076 Tea (*Camellia sinensis*) [Part used: Leaves]

Description: An evergreen shrub grown for the leaves which are used to make tea.

Rationale for inclusion: Traditionally used to treat asthma (functioning as a bronchodilator), angina pectoris, peripheral vascular disease, and coronary artery disease.

Notes:

Intake of green tea is associated with reduced incidence of cardiovascular diseases (e.g. Pang *et al.* Int J Cardiol 2015).

077 Chanterelle / girolle mushroom (*Cantharellus cibarius*) [Part used: Fruiting body]

Description: A commonly consumed edible fungus.

Rationale for inclusion: Extracts of Chanterelle were reported to have activity against Gram-positive bacteria (Kozarski *et al.* Food Funct. 2015;6:1875-86).

Notes:

Insecticidal properties have been reported (Cieniecka-Rosłonkiewicz *et al.* Chemistry & Biodiversity 2007;4:2218-24).

078 Capers (*Capparis spinosa*) [Part used: Flower bud]

Description: A perennial plant that bears large edible flower buds.

Rationale for inclusion: Extracts of capers have been reported to induce apoptosis in tumour cell lines via mitochondrial pathways (Ji *et al.* Asian Pac J Cancer Prev 2014;15:9153-7).

Notes:

Contains relatively high concentrations of quercetin.

079 Shepherd's Purse (*Capsella bursa-pastoris*) [Part used: Aerial parts]

Description: An annual and ruderal species of the Brassicaceae family.

Rationale for inclusion: Traditionally used to treat disorders of the skin, locomotor system, cardiovascular system, hemostasis, and gynaecologic problems.

Notes:

Extracts of shepherd's purse have been reported to show anti-inflammatory and anti-bacterial properties (Choi *et al.* Korean J Physiol Pharmacol 2014;18:33-9).

080 Bell Pepper (*Capsicum annuum*) [Part used: Fruit]

Description: A large perennial shrub native to the Americas.

Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).

Notes:

Also traditionally used in Chinese medicine to treat indigestion, decreased appetite, swelling and frostbite. Does not contain appreciable capsaicin.

081 Paprika (*Capsicum annuum*) [Part used: Fruit]

Description: A large perennial shrub native to the Americas.

Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).

Notes:

Paprika is the powdered air dried fruit. Contains zeaxanthin and capsaicin.

082 Cayenne (*Capsicum frutescens*) [Part used: Fruit]

Description: Annual or short-lived perennial plants native to the Americas.

Rationale for inclusion: Traditionally used as a lotion to treat for ringworm of the scalp.

Notes:

Also used internally to treat high blood pressure and as an aphrodisiac.

083 Papaya (*Carica papaya*) [Part used: Fruit]

Description: A fruit-bearing plant in the family Caricaceae, native to the American tropics.

Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).

Notes: Antiplasmodial activity has been reported for some preparations of the plant (Titanji *et al.* Afr J Trad Comp Alt Med 5:302-321).

084 Caraway Seed (*Carum carvi*) [Part used: Seed]

Description: A biennial plant in the family Apiaceae, native to western Asia, Europe and Northern Africa.

Rationale for inclusion: The seeds have been used traditionally as diuretics.

Notes: Caraway seed oil has also been reported to have anti-bacterial and anti-fungal properties (De Martino *et al.* Nat Prod Commun 2009;4:1741-50).

085 Pecan (*Carya illinoensis*) [Part used: Seed]

Description: A species of hickory native to Mexico and the southern United States.

Rationale for inclusion: Dietary intake of nuts is associated with lower all cause mortality and risk of a variety of diseases [e.g. van den Brandt *et al.* Int J Epidemiol 44:1038-49 (2015)].

Notes: Also rich in plant sterols, which may reduce LDL-cholesterol levels in man (Griel *et al.* Br J Nutr 2006;96:S68-78).

086 Henna White (*Cassia auriculata* / *Senna auriculata*) [Part used: Leaf]

Description: A legume tree in the subfamily Caesalpinioideae native to India.

Rationale for inclusion: Traditionally used to treat infections and inflammation.

Notes: This plant is unrelated to the plant that gives rise to henna dye.

087 Senna Leaf (*Cassia senna* / *Senna alexandrina*) [Part used: Leaf]

Description: A shrubby legume native to Egypt.

Rationale for inclusion: Traditionally used as a laxative.

Notes: The active ingredients are several senna glycosides which interact with immune cells in the colon.

088 Senna Pods (*Cassia senna* / *Senna alexandrina*) [Part used: Seed pod]

Description: A shrubby legume native to Egypt.

Rationale for inclusion: Traditionally used as a laxative.

Notes: The active ingredients are several senna glycosides which interact with immune cells in the colon.

089 Sweet chestnut (*Castanea sativa*) [Part used: Seed]

Description: A substantial, long-lived deciduous tree native to Europe and Asia Minor.

Rationale for inclusion: Dietary intake of nuts is associated with lower all cause mortality and risk of a variety of diseases [e.g. van den Brandt *et al.* Int J Epidemiol 44:1038-49 (2015)].

Notes: Extracts reported to help prevent skeletal muscle atrophy (Frati *et al.* Food Funct 2014;5:2870-82).

090 Cohosh, blue (*Caulophyllum thalictroides*) [Part used: Aerial parts]

Description: A flowering plant in the Berberidaceae (barberry) family.

Rationale for inclusion: Traditionally used to promote abortion or contraception.

Notes: Triterpene saponins extracted from Blue cohosh were reported to have anti-inflammatory properties (Lee *et al.* Evid Based Complement Alternat Med 2012:798192)

091 Red Root (*Ceanothus americanus*) [Part used: Root]

Description: A shrub native to North America, also commonly called New Jersey Tea.

Rationale for inclusion: Traditionally used to treat infections of the upper respiratory tract.

Notes: Root extracts contain peptide alkaloids, including ceanothine A-E, pandamine, zizyphine, scutianine, and the adouetines, which have a mild hypotensive effect.

092 Cornflower flowers (*Centaurea cyanus*) [Part used: Flower]

Description: An annual flowering plant in the family Asteraceae, native to Europe.

Rationale for inclusion: Traditionally used to treat conjunctivitis.

Notes:

Reported to induce apoptosis in a leukaemia cell line (Wegiera *et al.* Acta Pol Pharm 2012;69:263-8).

093 Centaury (*Centaureum erythraea*) [Part used: Aerial parts]

Description: A species of flowering plant in the gentian family native to Europe.

Rationale for inclusion: Traditionally used to treat gastric and liver diseases.

Notes:

Contains ferulic acid, sinapic acid, brassicasterol and stigmasterol.

094 Hydrocotyle [Gotu Kola] (*Centella asiatica*) [Part used: Aerial parts]

Description: A small, herbaceous, annual plant native to wetlands in Asia.

Rationale for inclusion: Traditionally used to treat minor wounds and improve immune function.

Notes:

Contains large amounts of pentacyclic triterpenoids including asiaticoside, brahmoside, asiatic acid, and brahmic (madecassic) acid.

095 Iceland Moss (*Cetraria islandica*) [Part used: Lichen]

Description: A lichen native to Iceland with the appearance of a moss.

Rationale for inclusion: Traditionally used to treat chest conditions and as a laxative.

Notes:

Contains lichenostearic acid, protolichesterinic acid and cetraric acid.

096 Chicory Root (*Cichorium intybus*) [Part used: Root]

Description: A woody, perennial herbaceous plant native to Europe now cultivated widely for salad leaves and the edible root.

Rationale for inclusion: Traditionally used to treat intestinal parasites. Ingestion of chicory was also reported to reduce serum hemoglobin A1c levels in human volunteers (Nishimura *et al.* J Tradit Complement Med. 2015;5:161-7).

Notes:

Contains lactucin, lactucopicrin, aesculetin, aesculin, cichoriin, umbelliferone, scopoletin and 6,7-dihydrocoumarin. Rich in the prebiotic carbohydrate inulin.

097 Princes Pine, pipsissiwa (*Chimaphila umbellata*) [Part used: Leaf]

Description: A small perennial flowering plant found in the temperate Northern Hemisphere.

Rationale for inclusion: Traditionally used to treat rheumatism, kidney and bladder ailments.

Notes:

It is used as a flavoring in candy and soft drinks, particularly root beer.

098 Sweet wormwood (*Artemisia annua*) [Part used: Stem]

Description: A common type of wormwood native to temperate Asia.

Rationale for inclusion: Traditionally used to treat fever.

Notes:

The plant extracts were discovered to have antimalarial activity in primate models in the early 1970s. The active component, artemisinin, has become one of the front-line anti-malarial drugs used today.

099 Chickpea (*Cicer arietinum*) [Part used: Seed]

Description: A legume of the family Fabaceae native to the Middle East.

Rationale for inclusion: Traditionally used to provoke menstruation and to treat kidney stones.

Notes:

Chickpea consumption may lower blood cholesterol (Pittaway *et al.* J Am Diet Assoc 2008;108:1009-13).

100 Cohosh, black (*Cimicifuga racemosa*) [Part used: Root]

Description: A flowering plant of the family Ranunculaceae, native to eastern North America.

Rationale for inclusion: Traditionally used for analgesic, sedative, and anti-inflammatory properties.

Notes:

Notes: Black cohosh is marketed as a dietary supplement to remedy the symptoms of premenstrual tension.

101 Cassia Bark (*Cinnamomum aromaticum* / *Cinnamomum cassia*) [Part used: Bark]

Description: An evergreen tree native to China, widely cultivated for the aromatic bark, which is used as a spice.

Rationale for inclusion: One of the 50 fundamental herbs in traditional Chinese medicine, used to treat hypertension and indigestion.

Notes: Contains cinnamic aldehyde, which alleviated chronic unexpected stress-induced depressive-like behaviors in rats (Yao *et al.* BIOSIS 2015;162:97-103)

102 Cinnamon Powder (*Cinnamomum verum*) [Part used: Inner bark]

Description: The Ceylon cinnamon tree is a small evergreen tree native to Sri Lanka. The inner bark is used to make the spice cinnamon.

Rationale for inclusion: Traditionally used to treat gastrointestinal problems, urinary infections, colds and flu.

Notes: Anti-bacterial properties of cinnamon extracts are frequently reported (Revati *et al.* Arch Med Sci 2015;11:863-8).

103 Water melon (*Citrullus lanatus*) [Part used: Flesh of fruit]

Description: A vine-like flowering plant native to West Africa in the family Cucurbitaceae.

Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).

Notes: Also traditionally used as a purgative and emetic.

104 Lime fruit (*Citrus limetta*) [Part used: Flesh of fruit]

Description: A citrus fruit grown in tropical climates.

Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).

Notes: Contains furanocoumarins, such as limettin.

105 Lime peel (*Citrus limetta*) [Part used: Rind of fruit]

Description: A citrus fruit grown in tropical climates.

Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).

Notes: Contains furanocoumarins, such as limettin.

106 Lemon fruit (*Citrus limon*) [Part used: Flesh of fruit]

Description: A citrus fruit thought to have originated in northern Burma or China.

Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).

Notes: Also traditionally used in Ayurvedic medicine to treat digestive disorders.

107 Lemon peel (*Citrus limon*) [Part used: Rind of fruit]

Description: A citrus fruit thought to have originated in northern Burma or China.

Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).

Notes: Also traditionally used in Ayurvedic medicine to treat digestive disorders.

108 Rooibosh tea (*Aspalathus linearis*) [Part used: Leaf]

Description: A broom-like member of the legume family native to South Africa.

Rationale for inclusion: Traditionally used to treat nervous tension, allergies, dermatitis, and various digestive problems.

Notes: Contains benzoic and cinnamic acids, also chrysoeriol.

109 Orange Flowers (*Citrus sinensis*) [Part used: Flower]

Description: From the citrus species *Citrus x sinensis* in the family Rutaceae.

Rationale for inclusion: Traditionally used to treat stomach ache.

Notes: Also commonly used in Middle Eastern cooking.

110 Orange fruit (*Citrus sinensis*) [Part used: Flesh of fruit]

Description: From the citrus species *Citrus x sinensis* in the family Rutaceae.
Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).
Notes: Consumption of orange juice is associated with decreased risk for obesity and improved biomarkers of health. (O'Neil *et al.* Nutr J 2012;11:107).

111 Orange peel (*Citrus sinensis*) [Part used: Rind of fruit]

Description: From the citrus species *Citrus x sinensis* in the family Rutaceae.
Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).
Notes: Extract of rind was reported to inhibit metalloproteinase and proteasome activities of colon cancer cells (Ademosun *et al.* J Basic Clin Physiol Pharmacol 26:471-7).

112 Holythistle (*Cnicus benedictus*) [Part used: Aerial parts]

Description: A thistle-like plant in the family Asteraceae, native to the Mediterranean region.
Rationale for inclusion: Traditionally used as a galactagogue to promote lactation.
Notes: Contains the compound cnicin.

113 Locust beans carob (*Ceratonia siliqua*) [Part used: Seed]

Description: A species of flowering evergreen shrub in the pea family, widely cultivated for its edible pods.
Rationale for inclusion: Traditionally used to treat diarrhea, heartburn, celiac disease and sprue.
Notes: Carob is also used as a flavoring agent and as a chocolate substitute.

114 Pomelo (*Citrus maxima*) [Part used: Fruit]

Description: A large citrus fruit, native to South and Southeast Asia.
Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).
Notes: Also traditionally used to treat coughs, fevers and gastrointestinal disorders.

115 Codonopsis (*Codonopsis pilosula*) [Part used: Root]

Description: A perennial species of flowering plant in the bellflower family native to Asia.
Rationale for inclusion: Traditionally used in Chinese medicine to improve appetite and energy.
Notes: Contains codonolactone, which was reported to exhibit antimetastatic properties in breast cancer cells (Wang *et al.* Int J Oncol. 2014;45:1891-900).

116 Coffee bean (*Coffea arabica*) [Part used: Seed]

Description: A shrub originally indigenous to the southwestern highlands of Ethiopia.
Rationale for inclusion: A 2014 meta-analysis found that coffee consumption (4 cups/day) was inversely associated with all-cause and cardiovascular mortality, but not with cancer mortality (Crippa *et al.* Am J Epidemiol 2014;180:763-75.).
Notes: The primary psychoactive chemical in coffee is considered to be caffeine, although coffee also contains the monoamine oxidase inhibitors β -carboline and harmaline, which may contribute to its psychoactivity.

117 Kola (*Cola nitida*, also *Cola vera*) [Part used: Seed]

Description: A tree native to the rainforests of tropical West Africa belonging to the family Malvaceae.
Rationale for inclusion: Traditionally used to lessen fatigue, prevent hunger pangs, increase mental activity and reduce the need for sleep.
Notes: The nuts contain caffeine, theobromine and tannin.

118 Stone Root (*Collinsonia canadensis*) [Part used: Root]

Description: A perennial herb in the mint family native to North America.
Rationale for inclusion: Traditionally used to treat sore throat, laryngitis, pharyngitis, and poor circulation.

inclusion:

Notes: Extract of stone root was reported to inhibit mitosis in MDA-MB-231 human breast carcinoma cells (Mazzio *et al.* *Phytother Res* 2014;28:856-67).

119 Coriander leaf (*Coriandrum sativum*) [Part used: Leaf]

Description: An annual herb in the family Apiaceae.

Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* *BMJ* 2014;349:g4490).

Notes: Extracts reported to inhibit growth of multi-drug resistant *Escherichia coli* (Shaheen *et al.* *Pak J Pharm Sci* 2015;28:1295-300).

120 Coriander Seed (*Coriandrum sativum*) [Part used: Seed]

Description: An annual herb in the family Apiaceae.

Rationale for inclusion: Coriander seed is traditionally used to treat digestion problems, loss of appetite, nausea, diarrhea, measles, hemorrhoids, worms, joint pain and infections.

Notes: Oil from the seed has well established anti-microbial activity (Silva *et al.* *Crit Rev Food Sci Nutr* 2015).

121 Hazelnut (*Corylus avellana*) [Part used: Seed]

Description: A tree native to Europe and western Asia cultivated widely for the edible nut.

Rationale for inclusion: Dietary intake of nuts is associated with lower all cause mortality and risk of a variety of diseases (e.g. van den Brandt *et al.* *Int J Epidemiol* 2015;44:1038-49).

Notes: Extract of hazelnut skin was reported to improve lipid profile in hamsters fed a high fat diet (Caimari *et al.* *Food Chem* 2015;167:138-44).

122 Hawthorn Berry (*Crataegus oxyacanthoides* / *Crataegus laevigata*) [Part used: Berry]

Description: A flowering shrub native to Europe.

Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* *BMJ* 2014;349:g4490).

Notes: Dietary supplementation with hawthorn fruit was shown to reduce atherosclerotic plaque formation in apolipoprotein E-deficient mice (Zhang *et al.* *J Atheroscler Thromb.* 2014;21:119-28).

123 Hawthorn Tops (*Crataegus oxyacanthoides*) [Part used: Flower]

Description: A flowering shrub native to Europe.

Rationale for inclusion: Traditionally used to treat heart failure.

Notes: A 2008 Cochrane Collaboration meta-analysis concluded that there is evidence of "a significant benefit in symptom control and physiologic outcomes" for an extract of hawthorn in treating chronic heart failure (Pittler *et al.* *Cochrane Database Syst Rev* 2008;23:CD005312).

124 Horn of plenty mushroom (*Craterellus cornucopioides*) [Part used: Fungal fruiting body]

Description: An edible mushroom also called black chanterelle or black trumpet.

Rationale for inclusion: Extracts of *Craterellus cornucopioides* were reported to inhibit pro-inflammatory cytokine production by RAW264.7 mouse macrophage cells (O'Callaghan *et al.* *J Med Food* 2015;18:202-7).

Notes: A heat-resistant factor in ethanol extracts of *Craterellus cornucopioides* inhibited mutagenicity induced by aflatoxin B1A (Grüter *et al.* *Mutat Res* 1990;231:243-9).

125 Canteloupe (*Cucumis melo*) [Part used: Flesh of fruit]

Description: A tropical vine fruit in the melon family.

Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* *BMJ* 2014;349:g4490).

Notes: Extracts of peel were reported to reduce serum lipid levels in rats fed a high cholesterol diet (Bidkar *et al.* *J Complement Integr Med* 2012;9:22).

126 Cucumber (*Cucumis sativus*) [Part used: Fruit]

Description: A creeping vine in the gourd family widely cultivated for the fruits.

Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause

inclusion: mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).
Notes: The seed is used traditionally to treat diabetes mellitus, and extracts of seed have been reported to regulate glucose metabolism in diabetic rats (Minaiyan *et al.* Iran J Basic Med Sci 2011;14:436-42).

127 Marrow (*Cucurbita pepo*) [Part used: Fruit]

Description: A herbaceous vine in the gourd family cultivated for the fruits.
Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).
Notes: Extracts of *C. pepo* were reported to be protective against gastric ulceration in rats (Sarkar *et al.* Indian J Exp Biol 2008;46:639-45).

128 Pumpkin seed (*Cucurbita pepo*) [Part used: Seed]

Description: A herbaceous vine in the gourd family cultivated for the fruits.
Rationale for inclusion: Traditionally used to treat bladder infections, parasites and worms.
Notes: The unusual amino acid cucurbitin is thought to be the active principle responsible for the anthelmintic (worm-expelling) effects of pumpkin seed extracts. Pumpkin seed oil was reported to stimulate hair growth in men with androgenetic alopecia (Young *et al.* Evid Based Complement Alternat Med 2014;549721).

129 Cumin Seed (*Cuminum cyminum*) [Part used: Seed]

Description: A flowering plant in the family Apiaceae, native from the Mediterranean to India.
Rationale for inclusion: Traditionally used as a diuretic and to treat stomach upset and flatulence.
Notes: Contains cymene and cuminaldehyde, which has antimicrobial and antifungal properties (Shetty *et al.* World J Microbiol Biotechnol 1994;10:232–233).

130 Turmeric (*Curcuma longa*) [Part used: Rhizome]

Description: A rhizomatous herbaceous perennial plant, native in southwest India.
Rationale for inclusion: Traditionally used to treat stomach and liver ailments, as well as topically to heal sores, eczema, chicken pox, shingles, allergy and scabies..
Notes: Contains curcuminoids, including curcumin, demethoxycurcumin, and bisdemethoxycurcumin. Turmeric is being evaluated for its potential efficacy against several human diseases in clinical trials, including kidney and cardiovascular diseases, arthritis, several types of cancer, irritable bowel disease, Alzheimer's disease and diabetes ("Clinical trials on turmeric". National Institutes of Health, Clinical Trials Registry).

131 Eddoe (*Colocasia antiquorum*) [Part used: Root]

Description: A tropical root vegetable native to China.
Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).
Notes: Traditionally used in South Africa for pain relief, and extracts were shown to contain potent inhibitors of cyclo-oxygenase-1 (Fawole *et al.* J Ethnopharmacol 2010;127:235-41).

132 Artichoke (*Cynara cardunculus*) [Part used: Leaf and stem]

Description: A thistle-like plant in the sunflower family native to the Mediterranean region.
Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).
Notes: Traditionally used to treat liver and gall bladder diseases. Cynarin, isolated from the leaves, was used from the 1950s to the 1980s as a drug to stimulate the gall bladder and to treat elevated cholesterol.

133 Broom (*Cytisus scoparius*) [Part used: Leaf]

Description: A perennial leguminous shrub native to western and central Europe.
Rationale for inclusion: Traditionally used as a diuretic and cathartic.
Notes: Rich in are biogenic amines, flavonoids (e.g. spiraeoside and scoparoside),

isoflavones and their glycosides (e.g. genistin), and allelopathic quinolizidine alkaloids (e.g. sparteine, lupanine, scoparin and hydroxy-derivatives).

134 Carrot (*Daucus carota*) [Part used: Root]

Description: A widely cultivated root vegetable.
Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490). Also traditionally used as an anthelmintic agent.
Notes: Contains falcariindiol, which is reported to have antifungal activity (Garrod *et al.* Physiol Plant Pathol 1978;13:241-246).

135 Spiral wrack (*Fucus spiralis*) [Part used: Marine macroalgae]

Description: A brown alga common to the Atlantic coasts of Europe and North America.
Rationale for inclusion: Traditionally used to treat wounds.
Notes: Compounds isolated from *F. spiralis* were shown to inhibit pro-inflammatory production of nitric oxide by stimulated macrophages (Lopes *et al.* Mar Drugs 2014;12:1406-1418).

136 Dioscorea [shan-yao] (*Dioscorea opposita*) [Part used: Root]

Description: A type of yam, eaten as a vegetable.
Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).
Notes: Also traditionally used to treat or prevent cancer, Crohn's disease and whooping cough.

137 Persimmon (*Diospyros virginiana*) [Part used: Fruit]

Description: A fruiting tree native to North America.
Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).
Notes: Extracts of persimmon were reported to inhibit growth of *Mycobacterium tuberculosis* (Esfahani *et al.* Res Pharm Sci 2014;9:193-8).

138 Echinacea Angustifolia Root (*Echinacea angustifolia*) [Part used: Root]

Description: A herbaceous flowering plant in the daisy family native to North America.
Rationale for inclusion: Traditionally used to treat colds, other infections, snakebite, and for relief of pain.
Notes: Extracts were reported to inhibit growth of several species of trypanosomatids (Canlas *et al.* Pharm Biol 2010;48:1047-52).

139 Echinacea Purpurea Root (*Echinacea purpurea*) [Part used: Root]

Description: A herbaceous flowering plant in the daisy family native to North America.
Rationale for inclusion: Traditionally used to treat wounds, burns, insect bites, toothache and throat infections.
Notes: Anti-depressant activity in rats via stimulation of L-DOPA has been reported (Kurkin *et al.* Pharm Chem J 2006;40:614-619).

140 California Poppy (*Eschscholzia californica*) [Part used: Aerial parts]

Description: A flowering plant in the family Papaveraceae, native to the US and Mexico.
Rationale for inclusion: Traditionally used to relieve stress and insomnia.
Notes: Contains isoquinoline alkaloids (e.g. californidine, sanguinarine, escholzine, protopine, crytpopine, chelidonine) and flavone glycosides (e.g. rutin, quercetin and isorhamnetin).

141 Bhringaraj Root (*Eclipta alba*) [Part used: Root]

Description: A widespread flowering plant in the sunflower family.
Rationale for inclusion: Extracts were reported to accelerate hair regrowth in shaved rats more than the control (2% minoxidil) (Roy *et al.* Arch Dermatol Res 2008;300:357-364).
Notes: Contains coumestans such as wedelolactone and demethylwedelolactone,

polypeptides, polyacetylenes and thiophene derivatives.

142 Cardamom Seed (*Elettaria cardamomum*) [Part used: Seed]

Description: A herbaceous perennial plant in the ginger family, native to southern India

Rationale for inclusion: Traditionally used to treat stomach cramps.

Notes:

Contains cineole. Cardamom was reported to prevent dexamethasone-induced hepatomegaly, dyslipidemia, and fasting hyperglycemia with comparable efficacy to pioglitazone in rats (Nitasha *et al.* J Adv Pharm Technol Res 2015;6:136-40).

143 Ginseng Siberian Root (*Eleutherococcus senticosus*) [Part used: Root]

Description: A small, woody shrub in the family Araliaceae native to Asia.

Rationale for inclusion: Traditionally used to treat headache, insomnia, and poor appetite.

Notes:

Contains ciwujianoside A-E, eleutherosides A-M, friedelin, isofraxidin and acanthoside-D. Extracts reported to improve memory / learning in a mouse model of Alzheimer's disease (Xu *et al.* Neural Regen Res 2008;3:192-195).

144 Amla Fruit (*Embllica officinalis* / *Phyllanthus emblica*) [Part used: Fruit]

Description: A deciduous tree of the family Phyllanthaceae native to India.

Rationale for inclusion: Traditionally used to treat throat inflammation, enhance digestion and reduce fever and cough.

Notes:

Reported to reduce serum cholesterol levels in men (Jacob *et al.* Eur J Clin Nutr 1988;42:939-44).

145 Small Flower Willow (*Epilobium parviflorum*) [Part used: Aerial parts]

Description: A herbaceous perennial plant belonging to the Onagraceae family.

Rationale for inclusion: Traditionally used to treat disorders of the prostate gland, bladder and kidney.

Notes:

Extracts were reported to inhibit proliferation of human prostate cells (Vitalone *et al.* J Pharm Pharmacol 2003;55:683-90).

146 Horsetail (*Equisetum arvense*) [Part used: Aerial parts]

Description: A herbaceous perennial plant, native throughout the arctic and temperate regions of the northern hemisphere.

Rationale for inclusion: Traditionally used to treat disorders of the skin, locomotor system, kidneys and urinary tract, rheumatism and gout.

Notes:

Extracts were reported to inhibit proliferation of T-lymphocytes (Gründemann *et al.* BMC Complement Altern Med 2014;14:283).

147 Yerbasanta (*Eriodictyo californicum*) [Part used: Leaves]

Description: A flowering plant in the Boraginaceae family native to the Western US.

Rationale for inclusion: Traditionally used to treat asthma, upper respiratory infections and allergic rhinitis.

Notes:

An extract of yerba santa is used as a flavoring in some foods and beverages. Contains eriodictyol, a flavanones with taste-modifying properties.

148 Rocket (*Eruca sativa*) [Part used: Aerial parts]

Description: An edible annual plant, commonly called salad rocket or arugula.

Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).

Notes:

Rocket extract were reported to possess anti-secretory, cytoprotective, and anti-ulcer activities against experimentally-induced gastric lesions in rats (Alqasoumi *et al.* World J Gastroenterol 2009;15:1958-1965).

149 Eucalyptus Leaves (*Eucalyptus globulus*) [Part used: Leaves]

Description: An evergreen tree widely cultivated in and native to Australia.

Rationale for inclusion: Traditionally used in Aboriginal medicine to treat wounds and fungal infections.

Notes:

Reported to reduce Candidiasis in normal and diabetic rats (Bokaeian *et al.* Iran

Biomed J 2010;14:121-126).

150 Boneset (*Eupatorium perfoliatum*) [Part used: Leaves]

Description: A perennial plant in the sunflower family native to the US and Canada.

Rationale for inclusion: Traditionally used to treat fever and colds.

Notes:

Reported to contain compounds active against *Plasmodium falciparum* (Maas *et al.* Phytochemistry 2011;72:635-44).

151 Gravel root (*Eupatorium purpureum*) [Part used: Root]

Description: A herbaceous perennial plant native to North America.

Rationale for inclusion: Traditionally used to treat urinary infections, to wash wounds and to relieve constipation.

Notes:

Contains cistifolin, which was reported to inhibit Mac-1 (CD11b/CD18)-dependent monocyte adhesion to fibrinogen (Habtemariam *et al.* Phytother Res 2001;15:687-90).

152 Eyebright (*Euphrasia officinalis*) [Part used: Aerial parts]

Description: A herbaceous flowering plant in the family Orobanchaceae.

Rationale for inclusion: Traditionally used to treat gastrointestinal complaints, or externally as a compress to treat disorders of the eyes.

Notes:

Extracts were reported to decrease pro-inflammatory cytokine expression (IL-1 β , IL-6 and TNF- α) by human corneal cells *in vitro* (Paduch *et al.* Balkan Med J 2014;31:29-36).

153 Fleeceflower [He Shou Wu] (*Fallopia multiflora* / *Polygonum multiflorum*) [Part used: Root]

Description: A herbaceous perennial vine native to central and Southern China.

Rationale for inclusion: Traditionally used in Chinese medicine to treat greying hair, and other age-related conditions.

Notes:

Extracts were reported to reduce serum lipid levels in rats (Chen *et al.* J Ethnopharmacol 2011;134:919-30).

154 Fig (*Ficus carica*) [Part used: Fruit]

Description: A flowering plant in the mulberry family, native to the Middle East and West Asia.

Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).

Notes:

Tirucallane-type triterpenoids isolated from fig fruits were reported to inhibit proliferation of three human cancer cell lines, MCF-7, HepG-2, and U2OS (Jing *et al.* Chem Pharm Bull (Tokyo) 2015;63:237-43).

155 Meadowsweet (*Filipendula ulmaria*) [Part used: Aerial parts]

Description: A perennial herb in the family Rosaceae native to Europe and Western Asia.

Rationale for inclusion: Traditionally used to treat rheumatism, gout, infections, and fever.

Notes:

Extracts were reported to have anti-microbial properties against 11 human pathogens (Denev *et al.* Acta Biochim Pol 2014;61:359-67).

156 Chrysanthemum flowers [Ju Hua] (*Chrysanthemum morifolium*) [Part used: Flower]

Description: A flowering plant in the family Asteraceae native to Asia.

Rationale for inclusion: Traditionally used to treat liver conditions, circulatory disorders, tiredness and blurred vision.

Notes:

Compounds extracted from Chrysanthemum were reported to inhibit aggregation of beta amyloid *in vitro* (Wu *et al.* J Nat Prod 2015;78:1593-9).

157 Fennel Seed (*Foeniculum vulgare*) [Part used: Seed]

Description: A flowering plant in the carrot family native to the Mediterranean region.

Rationale for inclusion: Traditionally used to treat inflammatory diseases.

Notes:

Coumarins isolated from fennel were reported to inhibit inflammation in cultured macrophages and mice *in vivo* (Yang *et al.* Immunopharmacol Immunotoxicol

2015;37:308-17).

158 Fennel (*Foeniculum vulgare dulce*) [Part used: Leaves]

Description: A flowering plant in the carrot family native to the Mediterranean region.

Rationale for inclusion: Traditionally used to treat inflammatory diseases.

Notes:

Coumarins isolated from fennel were reported to inhibit inflammation in cultured macrophages and mice *in vivo* (Yang *et al.* Immunopharmacol Immunotoxicol 2015;37:308-17).

159 Strawberry (*Fragaria x ananassa*) [Part used: Fruit]

Description: A widely grown hybrid species of the genus *Fragaria* cultivated for the fruit.

Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).

Notes: Epidemiological studies have associated strawberry consumption with lower rates of hypertension, inflammation, cancer, and cardiovascular diseases (Basu *et al.* Crit Rev Food Sci Nutr 2014;54:790-806).

160 Strawberry Leaves (*Fragaria vesca*) [Part used: Leaves]

Description: A widely grown hybrid species of the genus *Fragaria* cultivated for the fruit.

Rationale for inclusion: Traditionally used to treat gastrointestinal, cardiovascular and urinary disorders.

Notes:

Extracts were reported to inhibit nitric oxide production by LPS-stimulated macrophages (Liberal *et al.* J Ethnopharmacol 2014;158A:113-22).

161 Ash Leaves (*Fraxinus excelsior*) [Part used: Leaves]

Description: A large deciduous tree native to Europe.

Rationale for inclusion: Traditionally used to treat gout and rheumatic complaints, and as a laxative.

Notes:

Contains coumarins, including fraxin and esculin, that inhibit the growth of bacteria and fungi.

162 Bladderwrack (*Fucus vesiculosus*) [Part used: Macroalga]

Description: A widely distributed macroalga.

Rationale for inclusion: Traditionally used to treat goitre, a swelling of the thyroid gland related to iodine deficiency.

Notes: Extracts were reported to inhibit growth of several pancreatic cancer cell lines *in vitro* (Geisen *et al.* Mar Drugs 2015;13:4470-91).

163 Fumitory (*Fumaria officinalis*) [Part used: Aerial parts]

Description: An herbaceous annual plant widely distributed in the northern hemisphere.

Rationale for inclusion: Traditionally used to treat eye conditions and skin blemishes.

Notes:

Antiplasmodial and antitypanosomal effects were reported for extracts of *Fumaria* species (Orhan *et al.* Asian Pac J Trop Med 2015;8:283-6).

164 Goats Rue (*Galega officinalis*) [Part used: Leaves]

Description: An herbaceous plant in the Faboideae subfamily, native to the Middle East.

Rationale for inclusion: Traditionally used to treat diabetes mellitus.

Notes:

Studies of glucose regulating properties of this plant led to the development of metformin (Glucophage), currently used to treat diabetes mellitus.

165 Cleavers (*Galium aparine*) [Part used: Aerial parts]

Description: An herbaceous annual plant of the family Rubiaceae.

Rationale for inclusion: Traditionally used in a poultice to treat skin ailments, light wounds, burns and insect stings.

Notes: Extracts were reported to have activity against elastase and collagenase (Thring *et al.* BMC Complement Altern Med 2009;9:27).

166 Lady's Bedstraw (*Galium verum*) [Part used: Aerial parts]

Description: An herbaceous perennial plant widespread across Europe, North Africa and Asia.
Rationale for inclusion: Traditionally used to treat epilepsy, nervous complaints, hysteria and as a flea repellent.
Notes: Reported to inhibit haemolysis of mouse red blood cells (Khalili *et al.* Arh Hig Rada Toksikol 2014;65:399-406).

167 Gentian Root (*Gentiana lutea*) [Part used: Root]

Description: A flowering plant native to central and southern Europe.
Rationale for inclusion: Traditionally used to improve digestion, and to treat a variety of gastro-intestinal complaints (including heartburn, vomiting, stomach ache, diarrhea and appetite).
Notes: Contains amarogentin, which was reported to prevent platelet activation through inhibition of the PLC-PKC cascade and MAPK pathways (Yen *et al.* Biomed Res Int 2014;2014:728019).

168 Cranesbill (*Geranium maculatum*) [Part used: Root]

Description: A woodland perennial plant native to eastern North America.
Rationale for inclusion: Traditionally used to treat toothache, hemorrhoids and to stop bleeding.
Notes: Extracts were reported to have insecticidal properties (Gallardo *et al.* Parasitol Res 2015;114:1229-32).

169 Avens (*Geum urbanum*) [Part used: Leaves]

Description: A perennial plant in the rose family, native to Europe and the Middle East.
Rationale for inclusion: Traditionally used to treat poison, dog bites, rheumatism, gout, infections, and fever.
Notes: Extracts were reported to inhibit acetylcholinesterase (AChE) activity (Paun *et al.* Pharmacogn Mag 2015;11(S1):S110-6).

170 Ginkgo (*Ginkgo biloba*) [Part used: Leaves]

Description: A tree in the division Ginkgophyta, native to China.
Rationale for inclusion: Traditionally used to improve circulatory and cognitive function.
Notes: Extracts were reported to reduce inflammatory signalling in macrophages cultured *in vitro* (Zhang *et al.* Biomed Mater Eng 2015;26S1:S2069-75).

171 Ground Ivy (*Glechoma hederacea*) [Part used: Leaves]

Description: An aromatic, perennial, evergreen creeper of the mint family Lamiaceae.
Rationale for inclusion: Traditionally used to treat inflammation of the eyes, bronchitis and tinnitus.
Notes: Extracts were reported to inhibit xanthine oxidase activity (Masuda *et al.* J Nutr Sci Vitaminol (Tokyo) 2013;59:570-5).

172 Guava (*Psidium guajava*) [Part used: Fruit]

Description: A tree in the Myrtle family (Myrtaceae), native to Central and South America.
Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).
Notes: Extracts of guava fruit were reported to exhibit renal protective effects in diabetic mice (Lin *et al.* Plant Foods Hum Nutr 2012;67:303-8).

173 Licorice (*Glycyrrhiza glabra*) [Part used: Root]

Description: A legume native to southern Europe, India, and parts of Asia.
Rationale for inclusion: Traditionally used to treat stomach complaints, the common cold and liver disease.
Notes: Contains glycyrrhizin and enoxolone, which inhibit cortisol degradation. Glycyrrhizin also reduced oxidative stress, hepatic inflammation, and apoptotic cell death in fructose-fed rats (Sil *et al.* Mol Cell Biochem 2015;409:177-89).

174 Guinea Pepper, Grains of paradise (*Aframomum melegueta*) [Part used: Seed]

Description: A species in the ginger family native to West Africa.

Rationale for inclusion: Traditionally used to improve digestion, as a purgative, galactagogue and anthelmintic agent.
Notes: Reported to contain antibacterial compounds (Ngwoke *et al.* J Ethnopharmacol 2014;151):1147-54)

175 Grindelia Herb (*Grindelia camporum*) [Part used: Aerial parts]

Description: A flowering plant in the daisy family native to North America.
Rationale for inclusion: Traditionally used as an expectorant and sedative, also to treat cystitis and bronchitis.
Notes: Contains compounds which inhibit acetylcholinesterase (Alza *et al.* Bioorg Med Chem 22:3838-49).

176 Guaiacum Bark (*Guaiacum officinale*) [Part used: Bark]

Description: A tree in the caltrop family native to the Caribbean and South America.
Rationale for inclusion: Traditionally used to treat rheumatoid arthritis, gout and tonsillitis.
Notes: Extracts reported to have inhibitory activity against 3 breast cancer cell lines *in vitro* (Claudio-Campos *et al.* P R Health Sci J 2015;34:25-30).

177 Gurmar (*Gymnema sylvestre*) [Part used: Leaf]

Description: An herb native to the tropical forests of southern and central India
Rationale for inclusion: Traditionally used to treat diabetes.
Notes: Contains oleanane-type triterpenoid saponins including gymnemic acids. Extracts were reported to stimulate insulin secretion from mouse and human islets *in vitro* (Al-Romaiyan *et al.* Diabetes Obes Metab 2012;14:1104-13).

178 Witch-hazel Bark (*Hamamelis virginiana*) [Part used: Bark]

Description: A small, deciduous tree native to North America.
Rationale for inclusion: Traditionally used to treat swellings, inflammations, and tumors.
Notes: Hamamelitannin from witch-hazel bark was reported to display specific cytotoxic activity against colon cancer cells (Sánchez-Tena *et al.* J Nat Prod. 2012;75:26-33).

179 Witch-hazel Leaves (*Hamamelis virginiana*) [Part used: Leaves]

Description: A small, deciduous tree native to North America.
Rationale for inclusion: Traditionally used to treat haemorrhoids, burns, scalds, and inflammatory conditions of the skin.
Notes: Leaves reported to be rich in phenolic constituents, including gallotannins, procyanidins and catechin (Duckstein *et al.* Anal Bioanal Chem 2011;401:677-88).

180 Devils Claw Root (*Harpagophytum procumbens*) [Part used: Root]

Description: A plant in the sesame family, native to southern Africa.
Rationale for inclusion: Traditionally used to reduce pain and fever, and to stimulate digestion.
Notes: Extracts reported to possess antiallodynic and antihyperalgesic effects in carrageenan-induced inflammatory pain (Parenti *et al.* Molecules 2015;20:16758-69).

181 Sunflower seed (*Helianthus annuus*) [Part used: Seed]

Description: A flowering plant cultivated widely for the edible seed.
Rationale for inclusion: Traditionally used to treat bronchial and pulmonary conditions, coughs, colds and whooping cough.
Notes: Contains β -sitosterol and campesterol (Ramadan *et al.* J Food Sci Technol 2015;52:6301-11).

182 Hibiscus, Jamaican Sorrel, Roselle, flowers (*Hibiscus sabdariffa*) [Part used: Flower]

Description: An annual or perennial herb native to West Africa.
Rationale for inclusion: Traditionally used to treat coughs, and as a diuretic and mild laxative.

inclusion:

Notes: Reported to show antimicrobial activity against *E. coli in vitro* (Fullerton *et al.* J Med Food 2011).

183 Hop Flowers (*Humulus lupulus*) [Part used: Flower]

Description: A flowering, herbaceous, climbing plant native to Europe, Asia and N America.

Rationale for inclusion: Traditionally used to treat anxiety, restlessness and insomnia.

inclusion:

Notes: A major ingredient of most beers. A placebo controlled trial showed that hop extracts significantly reduced early menopausal symptoms in women (Aghamiri *et al.* Complement Ther Clin Pract 2015).

184 Hydrangea Root (*Hydrangea arborescens*) [Part used: Root]

Description: A species of flowering plant in the family Hydrangeaceae, native to the US.

Rationale for inclusion: Traditionally used to treat kidney and bladder stones.

inclusion:

Notes: Little studied.

185 St Johns Wort (*Hypericum perforatum*) [Part used: Aerial parts]

Description: A flowering herbaceous perennial plant native to Europe and Asia.

Rationale for inclusion: Traditionally used to treat depression.

inclusion:

Notes: A 2008 Cochrane review of 29 clinical trials concluded that it was superior to placebo in patients with major depression, as effective as standard antidepressants (Linde *et al.* Cochrane Database Syst Rev 2008;4:CD000448).

186 Hyssop (*Hyssopus officinalis*) [Part used: Aerial parts]

Description: An herbaceous plant native to Southern Europe and the Middle East.

Rationale for inclusion: Traditionally used as an antiseptic, cough reliever and expectorant.

inclusion:

Notes: Reported to reduce airway inflammation in a mouse model of chronic asthma (Ma *et al.* Exp Ther Med 2014;8:1371-1374).

187 Anise, Star-anise (*Illicium verum*) [Part used: Pericarp]

Description: An evergreen tree native to northeast Vietnam and southwest China.

Rationale for inclusion: Traditionally used to treat rheumatism.

inclusion:

Notes: A major source of shikimic acid, a primary precursor in the pharmaceutical synthesis of the anti-influenza drug oseltamivir, or Tamiflu (Wang *et al.* J Ethnopharmacol 2011;136:10-20).

188 Mate, Yerba mate (*Ilex paraguariensis*) [Part used: Leaves]

Description: An evergreen tree native to South America.

Rationale for inclusion: Traditionally used to treat depression and as an analgesic.

inclusion:

Notes: Mate was shown to promote weight loss in a placebo-controlled clinical trial (Kim *et al.* BMC Complement Altern Med 2015;15:338).

189 Henna Black (*Indigofera tinctoria*) [Part used: Leaves]

Description: A flowering shrub of the legume family cultivated widely in the tropics.

Rationale for inclusion: Traditionally used chiefly to prepare the dye indigo, but also medicinally as a nematicide and to treat scorpion bites.

Notes:

Extracts were reported to have anti-plasmodial properties (Kaushik *et al.* Malar J 2015;14:65).

190 Elecampane Root (*Inula helenium*) [Part used: Root]

Description: A perennial composite plant widespread across Europe and Asia.

Rationale for inclusion: Traditionally used to treat colds, bronchitis and emphysema.

inclusion:

Notes: Reported to inhibit proliferation of MDA-MB-231 human breast carcinoma cells

(Mazzio *et al.* *Phytother Res* 2014;28:856-67).

191 Oris Root (*Iris florentina*) [Part used: Root]

Description: A rhizomatous flowering perennial native to Europe.

Rationale for inclusion: Traditionally used to treat bronchitis and chronic diarrhoea.

Notes:

Reported to contain compounds that promote apoptosis in HL-60 cells (Yokosuka *et al.* *Nat Prod Commun* 2015;10:955-8).

192 Blue Flag (*Iris versicolor*) [Part used: Root]

Description: A rhizomatous species of Iris native to North America.

Rationale for inclusion: Traditionally used to treat syphilis and as a purgative.

Notes:

Reported to promote mobilisation of fat from adipose tissues in rats (Bambhole *et al.* *Anc Sci Life* 1988;8:117-24).

193 Jasmine Flowers (*Jasminum officinale*) [Part used: Flower]

Description: A flowering plant in the olive family Oleaceae, native to the Middle East and Asia.

Rationale for inclusion: Traditionally cultivated for the scent, but also used to treat depression and stress.

Notes:

Jasmine flower extract suppressed puerperal lactation by lowering prolactin in women (Finny *et al.* *Trop Doct* 2015;45:118-22).

194 Calumba Root (*Jateorhiza palmata*) [Root]

Description: A perennial climbing plant native to East Africa.

Rationale for inclusion: Traditionally used to treat poor digestion, diarrhea, flatulence and loss of appetite.

Notes:

Little studied.

195 Walnut Leaves (*Juglans regia*) [Leaf]

Description: A tree cultivated widely for the edible seed, native to Europe and Asia.

Rationale for inclusion: Extracts of leaf were traditionally used to treat symptoms of diabetes mellitus.

Notes:

Extracts of leaf were reported to inhibit alpha-amylase activity (Rahimzadeh *et al.* *Iran J Basic Med Sci* 2014;17:465-9).

196 Walnuts (*Juglans regia*) [Part used: Seed]

Description: A tree cultivated widely for the edible seed, native to Europe and Asia.

Rationale for inclusion: Dietary intake of nuts is associated with lower all cause mortality and risk of a variety of diseases (e.g. van den Brandt *et al.* *Int J Epidemiol* 2015;44:1038-49).

Notes:

Dietary supplementation with walnuts improved microvascular function, as assessed by reactive hyperemia index (Holt *et al.* *J Nutr Biochem* 2015)

197 Juniper Berries (*Juniperus communis*) [Part used: Fruit]

Description: A coniferous plants in the cypress family Cupressaceae.

Rationale for inclusion: Traditionally used to treat bronchitis and as a female contraceptive.

Notes:

Reported to improve digestibility of feed in cattle (Yang *et al.* *J Dairy Sci* 2007;90:5671-81).

198 Lettuce (*Lactuca sativa*) [Part used: Leaves]

Description: An annual plant of the daisy family Asteraceae, grown as a leaf vegetable.

Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* *BMJ* 2014;349:g4490).

Notes:

Also traditionally used to treat pain, rheumatism, tension, nervousness and coughs.

199 Wild Lettuce (*Lactuca virosa*) [Part used: Leaves]

Description: An annual plant of the daisy family Asteraceae.

Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause

inclusion: mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).
Notes: Also traditionally used for its mild psychotropic effects, reported to be similar to opium. The active components are considered to be lactucin, an adenosine receptor agonist, and lactucopicrin, an acetylcholinesterase inhibitor.

200 Calabash, dudhi, bottle gourd (*Lagenaria siceraria*) [Part used: Fruit]

Description: An annual herbaceous gourd bearing vine widely cultivated for the edible fruit.
Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).
Notes: Also traditionally used to treat jaundice, diabetes, ulcers, colitis and skin diseases.

201 White Dead Nettle (*Lamium album*) [Part used: Aerial parts]

Description: An herbaceous perennial flowering plant native throughout Europe and Asia.
Rationale for inclusion: Traditionally used to treat depression and melancholy.
Notes: Extracts were reported to have antimicrobial properties (Chipeva *et al.* Afr J Tradit Complement Altern Med 2013;10:559-62).

202 Yellow Dead Nettle (*Lamium galeobdolon*) [Part used: Aerial parts]

Description: A perennial flowering plant native to Europe.
Rationale for inclusion: Traditionally used to treat gout and sciatica.
Notes: Little studied.

203 Bay Leaves (*Laurus nobilis*) [Part used: Leaves]

Description: An aromatic evergreen tree native to the Mediterranean region.
Rationale for inclusion: Traditionally used to treat wounds.
Notes: Lauroside B isolated from *L. nobilis* is an inhibitor of human melanoma cell proliferation *in vitro* (Panza *et al.* J Nat Prod 2011;74:228-33).

204 Lavender Flowers (*Lavandula angustifolia*) [Part used: Flower]

Description: A flowering plant in the family Lamiaceae, native to the western Mediterranean.
Rationale for inclusion: Traditionally used to treat depression.
Notes: Extract of lavender was reported to decrease mean depression score in patients with depression (Nikfarjam *et al.* Iran Red Crescent Med J 2013;15:734-9).

205 Henna Red (*Lawsonia inermis*) [Part used: Leaves]

Description: A small tree native to northern Africa, Asia, and northern Australasia.
Rationale for inclusion: Principally used to prepare skin dyes but also traditionally used to treat urinary stones.
Notes: Extracts were reported to be cytotoxic for multidrug-resistant cancer cells *in vitro* (Saeed *et al.* J Ethnopharmacol 2015)

206 Lentil (*Lens culinaris*) [Part used: Seed]

Description: A bushy annual plant of the legume family, cultivated for the edible seeds.
Rationale for inclusion: Traditionally used to treat diabetes mellitus (Giday *et al.* J Ethnopharmacol 2007;110:516525).
Notes: Extract of *L. culinaris* caused relaxation of rabbit jejunum preparations (Khan *et al.* Phytother Res 2014;28:1349-58).

207 Shiitake mushroom (*Lentinula edodes*) [Part used: Fungal fruiting body]

Description: An edible mushroom native to East Asia.
Rationale for inclusion: Traditionally used to as an aphrodisiac.
Notes: Extracts reduced cholesterol levels in mice fed a high fat diet (Yang *et al.* Exp Ther Med 2013;6:1409-1413).

208 Motherwort (*Leonurus cardiaca*) [Part used: Aerial parts]

Description: An herbaceous perennial plant in the mint family.
Rationale for inclusion: Traditionally used to prevent uterine infection.
Notes: Reported to contain agents that bind to the gamma-aminobutyric acid type A receptor (Rauwald *et al.* *Planta Med* 2015;81:1103-10).

209 Cress (*Lepidium sativum*) [Part used: Aerial parts]

Description: An annual, widely cultivated edible herb.
Rationale for inclusion: Traditionally used to treat hyperactive airways disorders, such as asthma, bronchitis and cough.
Notes: The bronchodilatory effect of *L. sativum* was reported to be mediated through a combination of anticholinergic, Ca⁺⁺ antagonist and PDE inhibitory pathways (Rehman *et al.* *Evid Comp Alt Med* 2012;596524).

210 Mangosteen (*Garcinia mangostana*) [Part used: Fruit]

Description: A tropical evergreen tree believed to have originated in the Sunda Islands and the Moluccas of Indonesia.
Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* *BMJ* 2014;349:g4490).
Notes: Daily consumption of a mangosteen-based drink improves in vivo antioxidant and anti-inflammatory biomarkers in healthy adults (Xie *et al.* *Food Sci Nutr* 2015;3:342-8).

211 Muira Puama Bark (*Liriosma ovata*) [Part used: Bark]

Description: A small tree native to the Amazon rainforest.
Rationale for inclusion: Traditionally used to increase energy levels and to improve sexual performance.
Notes: In combination with Ginko biloba, reported to increase libido in women (Waynberg *et al.* *Adv Ther* 2000;17:255-62).

212 Lychee (*Litchi chinensis*) [Part used: Fruit]

Description: A tropical and subtropical fruit tree native to the Guangdong and Fujian provinces of China.
Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* *BMJ* 2014;349:g4490).
Notes: Also traditionally used to relieve coughing, stomach ulcers, diabetes and obesity.

213 Lycium Fruit, Goji berry [Gou Qi Zi] (*Lycium barbarum*) [Part used: Fruit]

Description: A boxthorn in the family Solanaceae native to southeastern Europe and Asia.
Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* *BMJ* 2014;349:g4490).
Notes: Extracts of *L. barbarum* were reported to protect neurons against beta-amyloid peptide toxicity in neuronal cell cultures (Chang *et al.* *Cell Mol Neurobiol* 2008;28:643-52).

214 Sweet potato (*Ipomoea batatas*) [Part used: Root]

Description: An herbaceous perennial vine in the family Convolvulaceae.
Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* *BMJ* 2014;349:g4490).
Notes: Extracts were reported to reduce the serum uric acid level in hyperuricemic mice (Zhang *et al.* *Food Funct* 2015;6:3045-55).

215 Gypsywort (*Lycopus europaeus*) [Part used: Leaves]

Description: A perennial plant in the *Lycopus* genus, native to Europe and Asia.
Rationale for inclusion: Traditionally used as a sedative and narcotic.
Notes: Extracts were reported to have antibacterial activity against clinical strains of *S. aureus* (Fialová *et al.* *Nat Prod Res* 2015;29:2271-4).

216 Bugleweed (*Lycopus virginicus*) [Part used: Aerial parts]

Description: A perennial herb native to North America.
Rationale for inclusion: Traditionally used to treat conditions related to hyperthyroidism.
Notes: Reported to inhibit binding and adenylate cyclase stimulatory effect of bovine thyrotropin in human thyroid membranes (Auf'mkolk *et al.* *Endocrinology* 1984;115:527-34).

217 Macademia (*Macadamia integrifolia*) [Part used: Seed]

Description: A tree in the Proteaceae family, native to Australia.
Rationale for inclusion: Dietary intake of nuts is associated with lower all cause mortality and risk of a variety of diseases (e.g. van den Brandt *et al.* *Int J Epidemiol* 2015;44:1038-49).
Notes: Dietary consumption was reported to reduce circulating cholesterol levels in men (Garg *et al.* *J Nutr* 2003;133:1060-3).

218 Apple (*Malus domestica*) [Part used: Fruit]

Description: A deciduous tree in the rose family cultivated worldwide for the edible fruit.
Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* *BMJ* 2014;349:g4490).
Notes: Reported to show anti-hyperglycaemic effects in healthy human volunteers (Makarova *et al.* *J Sci Food Agric* 2015;95:560-8).

219 Blue Mallow flowers (*Malva sylvestris*) [Part used: Flower]

Description: An herbaceous annual, biennial or perennial plant, depending on location.
Rationale for inclusion: Traditionally used to treat asthma, bronchitis, coughing, throat infections, emphysema and wounds.
Notes: Extract of the flower was reported to inhibit activity of alpha-amylase and alpha-glucosidase (Loizzo *et al.* *J Agric Food Chem* 2015).

220 Mallow (*Malva vulgaris*) [Part used: Aerial parts]

Description: An herbaceous annual, biennial or perennial plant, depending on location.
Rationale for inclusion: Traditionally used to treat gallstones, kidney stones, kidney inflammation, headache, constipation, gastritis, toothaches and insomnia.
Notes: Little studied.

221 Mango (*Mangifera indica*) [Part used: Fruit]

Description: A large tree in the Anacardiaceae family, native to India, cultivated for the fruit.
Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* *BMJ* 2014;349:g4490).
Notes: Also traditionally used as an anti-diuretic, anti-diarrheal and anti-emetic.

222 Lablab (*Lablab purpureus*) [Part used: Seed]

Description: A species of bean in the family Fabaceae, native to Africa.
Rationale for inclusion: Dietary intake of pulses (beans, chickpeas, lentils and peas) is associated with reduced LDL cholesterol levels in man (Ha *et al.* *CMAJ* 2014;186:E252-62).
Notes: Extracts were reported to show antimicrobial properties against the causal agents of malaria, dracunculiasis, and amoebiasis (Kamal *et al.* *Parasitol Res* 2010;107:1481-8).

223 White mulberry (*Morus alba*) [Part used: Twigs]

Description: A small tree native to northern China, cultivated to provide feed for silkworms.
Rationale for inclusion: Traditionally used to treat swelling and numbness.
Notes: Mulberroside A, found in extracts of Mulberry twig, was reported to protect against ischemic impairment in primary rat cortical neurons after oxygen-glucose deprivation followed by reperfusion (Wang *et al.* *J Neurosci Res* 2014;92:944-54).

224 Horehound White (*Marrubium vulgare*) [Part used: Aerial parts]

Description: A widespread, herbaceous perennial flowering plant in the family Lamiaceae.
Rationale for inclusion: Traditionally used to expel worms in farm animals.

Notes: Reported to show antibacterial, antifungal and cytotoxic properties *in vitro* (Zarai *et al.* Lipid Health Dis 2011;10:161).

225 Chamomile, German (*Matricaria recutita*) [Part used: Flower]

Description: An annual plant of the composite family Asteraceae.

Rationale for inclusion: Traditionally used to treat stomach pains, irritable bowel syndrome and insomnia.

Notes: Reported to alleviate symptoms of generalized anxiety disorder in a clinical trial (Amsterdam *et al.* J Clin Pharmacol 2009;29:378-82).

226 Alfalfa (*Medicago sativa*) [Part used: Aerial parts]

Description: A perennial flowering plant in the family Fabaceae cultivated as a forage crop.

Rationale for inclusion: Traditionally used to treat diabetes, kidney stones and asthma.

Notes: Extract reported to protect against iron overload in a rat model (Mirzaei *et al.* Glob J Health Sci 2015;7:47892).

227 Melilot (*Melilotus officinalis*) [Part used: Aerial parts]

Description: An annual or biennial legume native to Eurasia.

Rationale for inclusion: Traditionally used as an emollient or to treat inflammation of the eye.

Notes:

Notes: Extracts reported to show anthelmintic activity against *Haemonchus contortus* (Acharya *et al.* Vet Parasitol 2014;201:75-81).

228 Balm (*Melissa officinalis*) [Part used: Aerial parts]

Description: A perennial herbaceous plant in the mint family Lamiaceae, native to south-central Europe, North Africa, the Mediterranean region, and Central Asia.

Rationale for inclusion: Traditionally used to treat disorders of the gastrointestinal tract, nervous system, liver and bile.

Notes: Extract reported to modify heart electrocardiogram measurements in rats (Joukar *et al.* Res Cardiovasc Med 2015;4:e27013).

229 Peppermint (*Mentha x piperita*) [Part used: Leaves]

Description: A hybrid mint (a cross between watermint and spearmint) native to Europe and the Middle East.

Rationale for inclusion: Traditionally used to treat irritable bowel syndrome and nausea.

Notes:

Notes: A meta-analysis concluded that peppermint oil is a safe and effective treatment for irritable bowel syndrome (Khanna *et al.* J Clin Gastroenterol 2014;48:505-12).

230 Pennyroyal (*Mentha pulegium*) [Part used: Aerial parts]

Description: A flowering plant in the family Lamiaceae native to Europe, North Africa, and the Middle East.

Rationale for inclusion: Traditionally used as an emmenagogue (menstrual flow stimulant), and also as an insect repellent.

Notes: Aqueous extracts were reported to show nematocidal activity (Caboni *et al.* J Agric Food Chem 2013;61:9784-8).

231 Spearmint (*Mentha spicata*) [Part used: Aerial parts]

Description: A herbaceous, rhizomatous, perennial plant native to Eurasia.

Rationale for inclusion: Traditionally used to treat irritable bowel syndrome, motion sickness, hiccups, and nausea.

Notes: Reported to show antifungal activity (Konstantia *et al.* J Agric Food Chem 1998;46:1739).

232 Bogbean (*Menyanthes trifoliata*) [Part used: Leaves]

Description: A flowering plant in the family Menyanthaceae.

Rationale for inclusion: Traditionally used to treat osteo-arthritis and rheumatoid arthritis.

Notes:

Notes: Extracts of leaf were reported to demonstrate anti-inflammatory properties (Kuduk-

Jaworska *et al.* Z Naturforsch C 2004;59:485-93).

233 Squaw vine, partridge berry (*Mitchella repens*) [Part used: Aerial parts]

Description: A creeping herbaceous woody shrub, occurring in North America and Japan.

Rationale for inclusion: Traditionally used to ease childbirth.

Notes:

Little studied.

234 Morel mushroom (*Morchella esculenta*) [Part used: Fungal fruiting body]

Description: An edible species of fungus in the Morchellaceae family of the Ascomycota.

Rationale for inclusion: Traditionally used to treat indigestion, excessive phlegm, and shortness of breath.

Notes:

Extract was reported to protect kidneys against damage by cisplatin and gentamicin (Nitha *et al.* Food Chem Toxicol 2008;46:3193-9).

235 Curry leaf (*Murraya koenigii*) [Part used: Leaf]

Description: A tropical to sub-tropical tree in the family Rutaceae, native to India and Sri Lanka.

Rationale for inclusion: Traditionally used to treat diabetes.

Notes:

Girinimbine, a carbazole alkaloid isolated from *M. koenigii*, was reported to inhibit the growth and induced apoptosis in human hepatocellular carcinoma, HepG2 cells *in vitro* (Suvitha *et al.* Molecules 2011;16:7155-70).

236 Banana (*Musa acuminata*) [Part used: Fruit]

Description: Most of the modern edible dessert bananas belong to this species.

Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).

Notes:

Extracts were reported to increase resistance to infection in prawns (Rattanavichai *et al.* Fish Shellfish Immunol 2015;46:378-86).

237 Bayberry Bark (*Myrica cerifera*) [Part used: Bark]

Description: A small tree or large shrub native to North America.

Rationale for inclusion: Traditionally used to treat fever and diarrhea.

Notes:

Myricitrin from the plant was reported to protect endothelial cells from ox-LDL-induced endothelial cell apoptosis (Qin *et al.* Vascul Pharmacol 2015;70:23-34).

238 Mace (*Myristica fragrans*) [Part used: Outer cover or aril of nutmeg seed]

Description: An evergreen tree indigenous to the Moluccas (Spice Islands) of Indonesia.

Rationale for inclusion: Traditionally used to treat nausea and flatulence.

Notes:

Meso-dihydroguaiaretic acid (DHGA) isolated from the seeds of *Myristica fragrans* exhibited cytotoxicity against H358 cells, and antitumor activity in allogeneic tumor-bearing mice model (Thuong *et al.* Arch Pharm Res 2014;37:399-403).

239 Nutmeg (*Myristica fragrans*) [Part used: Seed]

Description: An evergreen tree indigenous to the Moluccas (Spice Islands) of Indonesia.

Rationale for inclusion: Traditionally used to treat nausea and flatulence.

Notes:

Extract was reported to inhibit nitric oxide production by LPS-stimulated macrophages (Cao *et al.* Food Chem 2015;173:231-7).

240 Catnip (*Nepeta cataria*) [Part used: Aerial parts]

Description: A species of the genus *Nepeta* in the family Lamiaceae, native to southern and eastern Europe, the Middle East, central Asia, and parts of China.

Rationale for inclusion: Traditionally used as an anti-inflammatory, antispasmodic, antimicrobial and antiviral agent.

Notes:

Extract reported to repel and inhibit feeding of biting horn flies (Zhu *et al.* Pest Manag Sci 2015;71:1553-60).

241 Rambutan (*Nephelium lappaceum*) [Part used: Fruit]

Description: A tropical tree in the family Sapindaceae, native to Malay-Indonesian region
Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).
Notes: Extract reported to have antiviral activity against herpes simplex virus type 1 (Nawawi *et al.* Phytother Res 1999;13:37-41).

242 Black Eye Pea / Black Eye Bean (*Vigna unguiculata*) [Part used: Seed]

Description: A subspecies of the cowpea, widely cultivated for its edible bean.
Rationale for inclusion: Dietary intake of pulses (beans, chickpeas, lentils and peas) is associated with reduced LDL cholesterol levels in man (Ha *et al.* CMAJ 2014;186:E252-62).
Notes: A protease inhibitor extracted from black eye beans was reported to enhance the action of bradykinin-related peptides (da Cunha *et al.* Molecules 2014;19:17536-58).

243 Basil (*Ocimum basilicum*) [Part used: Leaves]

Description: A culinary herb native to India.
Rationale for inclusion: Antiviral properties of basil extracts have been reported (Chiang *et al.* Clin Exp Pharmacol Physiol 2005;32:811-6).
Notes: Antigiardial properties of basil extracts have been reported (de Almeida *et al.* Parasitol Res 2007;101:443-52).

244 Olive (*Olea europaea*) [Part used: Fruit]

Description: A tree native to the Mediterranean region, cultivated for the edible fruit.
Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).
Notes: Olive fruit pulp extract was reported to protect against carbon tetrachloride-induced hepatic damage in mice (Kang *et al.* Indian J Pharm Sci 2014;76:274-80).

245 Olive Leaves (*Olea europea*) [Part used: Leaves]

Description: A tree native to the Mediterranean region, cultivated for the edible fruit.
Rationale for inclusion: Traditionally used to treat diabetes.
Notes: Olive leaf extract improves the atherogenic lipid profile in rats fed a high cholesterol diet (Olmez *et al.* Phytother Res 2015;29:1652-7).

246 Dittany Of Crete (*Origanum dictamnus*) [Part used: Aerial parts]

Description: A perennial shrub native to the Greek island of Crete.
Rationale for inclusion: Traditionally used to treat coughs and colds.
Notes: Oil extracted from the plant was reported to have antimicrobial, antioxidant, and antiproliferative activity (Mitropoulou *et al.* Microb Ecol Health Dis 2015;26:26543).

247 Marjoram (*Origanum majorana*) [Part used: Aerial parts]

Description: A culinary, perennial herb, native to the Mediterranean region.
Rationale for inclusion: Traditionally used to treat swellings, rheumatism and colic.
Notes: Hesperetin and hydroquinone, isolated from marjoram, were reported to inhibit proliferation of cancer cell lines *in vitro* (Erenler *et al.* J Sci Food Agric 2015).

248 Oregano (*Origanum vulgare*) [Part used: Leaves]

Description: A common perennial herb in the mint family Lamiaceae, native to warm-temperate western and southwestern Eurasia and the Mediterranean region.
Rationale for inclusion: Traditionally used as an antiseptic and to treat stomach and respiratory ailments.
Notes: Extracts reported to show antifungal activity against *Candida albicans* (Varadarajan *et al.* J Clin Diagn Res 2015;9:ZC07-10).

249 Lotus root (*Nelumbo nucifera*) [Part used: Root]

Description: An aquatic perennial plant in the family Nelumbonaceae native to tropical Asia.

Rationale for inclusion: Traditionally used to treat respiratory problems.
Notes: Ethanol extract of lotus root exhibits an anti-adipogenic effect in human pre-adipocytes and anti-obesity and anti-oxidant effects in rats fed a high-fat diet (You *et al.* Nutr Res 2014;34:258-67).

250 Peony Flowers (*Paeonia lactiflora*) [Part used: Flowers]

Description: A herbaceous perennial flowering plant in the family Paeoniaceae, native to central and eastern Asia.

Rationale for inclusion: Traditionally used to treat cough.

Notes: Extracts were reported to be rich in free radical scavenging activity (Zeng *et al.* Springerplus 2014;3:315).

251 Dulse (*Palmaria palmata*) [Part used: Marine macroalga]

Description: A red alga native to the northern coasts of the Atlantic and Pacific Oceans.

Rationale for inclusion: Traditionally used to eliminate parasites.

Notes:

Polar lipids from *P. palmata* inhibit LPS-induced nitric oxide production in RAW264.7 macrophage cells (Banskota *et al.* Phytochemistry 2014;101:101-108).

252 Ginseng Korean Root (*Panax ginseng*) [Part used: Root]

Description: A widely distributed perennial plant belonging to the family Araliaceae.

Rationale for inclusion: Traditionally used as an aphrodisiac and stimulant and to improve sexual function in men.

Notes: Extract was reported to rejuvenate age-related testicular dysfunction and sperm maturation in aged rats (Kopalli *et al.* Exp Gerontol 2015;69:94-102).

253 Poppy Seeds (*Papaver somniferum*) [Part used: Seed]

Description: A widely cultivated flowering herbaceous plant.

Rationale for inclusion: A major source of opiate based drugs, such as morphine or codeine.

Notes:

The seeds contain only very small amounts of opiates.

254 Pellitory-of-the-wall (*Parietaria officinalis*) [Part used: Aerial parts]

Description: A bushy herbaceous perennial plant native to Europe and North Africa.

Rationale for inclusion: Traditionally used to treat bladder stones.

Notes:

Little studied.

255 Passion fruit (*Passiflora edulis*) [Part used: Fruit]

Description: A flowering perennial vine native to South America.

Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).

Notes: Extract of fruit was reported to inhibit oxidative stress and the inflammatory response in mice (Silva *et al.* J Pharm Pharmacol 2015;67:1017-27).

256 Passion flower (*Passiflora incarnata*) [Part used: Flower]

Description: A flowering perennial vine native to South America.

Rationale for inclusion: Traditionally used to treat nervous anxiety and gastrointestinal complaints.

Notes:

Reported to reduce symptoms of anxiety in dental patients (Kaviani *et al.* J Dent Shiraz 2013;14:68-72).

257 Parsnips (*Pastinaca sativa*) [Part used: Root]

Description: A biennial plant native to Eurasia widely cultivated for the edible root.

Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).

Notes: Also traditionally used to treat stomach cramps.

258 Guarana (*Paullinia cupana*) [Part used: Seed]

Description: A climbing plant in the maple family, Sapindaceae, native to the Amazon basin.
Rationale for inclusion: Traditionally used as a stimulant and to treat headaches and migraines.
Notes: Extract reported to inhibit platelet thromboxane synthesis and aggregation (Bydlowski *et al.* Braz J Med Biol Res 1991;24:421-4).

259 Avocado (*Persea americana*) [Part used: Fruit]

Description: A tree native to Mexico and Central America in the family Lauraceae.
Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).
Notes: Dietary trial showed that ingestion of the fruits for 7 days reduced serum LDL-cholesterol significantly (Lopez Ledesma *et al.* Arch-Med-Res 1996;27:519-23).

260 Parsley (*Petroselinum crispum*) [Part used: Aerial parts]

Description: A biennial herb in the family Apiaceae native to the central Mediterranean region.
Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).
Notes: Extract was reported to attenuate hepatic steatosis in rats fed a fructose enriched diet (Nair *et al.* Bratisl Lek Listy 2015;116:554-9).

261 Boldo (*Peumus boldus*) [Part used: Leaves]

Description: A tree of the family Monimiaceae native to South America.
Rationale for inclusion: Traditionally used to treat dyspepsia.
Notes: Boldine, the major alkaloid from the leaves, was reported to enhance bile production in rats via osmotic and farnesoid X receptor dependent mechanisms (Cermanova *et al.* Toxicol Appl Pharmacol 2015;285:12-22).

262 Runner bean (*Phaseolus coccineus*) [Part used: Seed]

Description: A plant in the legume (Fabaceae) family, widely cultivated for the edible seed.
Rationale for inclusion: Dietary intake of pulses (beans, chickpeas, lentils and peas) is associated with reduced LDL cholesterol levels in man (Ha *et al.* CMAJ 2014;186:E252-62).
Notes: A lectin isolated from *P. coccineus* was reported to show anti-fungal activity (Chen *et al.* Phytomedicine 2009;16:352-60).

263 Butter bean, lima bean (*Phaseolus lunatus*) [Part used: Seed]

Description: A legume grown for its edible seeds.
Rationale for inclusion: Dietary intake of pulses (beans, chickpeas, lentils and peas) is associated with reduced LDL cholesterol levels in man (Ha *et al.* CMAJ 2014;186:E252-62).
Notes: Extracts were reported to be rich in phenolics and anti-oxidant activity (Zhao *et al.* Food Chem 2014;152:462-6).

264 Kidney bean (*Phaseolus vulgaris*) [Part used: Seed]

Description: A herbaceous annual plant grown worldwide for its edible seed.
Rationale for inclusion: Dietary intake of pulses (beans, chickpeas, lentils and peas) is associated with reduced LDL cholesterol levels in man (Ha *et al.* CMAJ 2014;186:E252-62).
Notes: Risk of developing conditions that are promoted by increased glycaemic stress (hyperglycaemia and hyperinsulinaemia) is reported to be reduced by dietary intake of kidney beans (Hutchins *et al.* Br J Nutr 2012;108:S52-65).

265 Date (*Phoenix dactylifera*) [Part used: Fruit]

Description: A flowering species in the palm family Arecaceae, cultivated for its edible fruit.
Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).
Notes: Extract of date fruit was reported to inhibit proliferation of a colon cancer cell line *in vitro* (Eid *et al.* J Nutr Sci 2014;3:e46).

266 Quassia Bark (*Quassia amara*) [Part used: Bark]

Description: A flowering shrub native to South America.

Rationale for inclusion: Traditionally used as an insecticide.
Notes: Extract was reported to reduce diabetes in nicotinamide-streptozotocin-induced diabetic rats (Husain *et al.* *Phytother Res* 2011;25:1806-12).

267 Mousear, hawkweed (*Hieracium pilosella*) [Part used: Aerial parts]

Description: A flowered species in the family Asteraceae, native to Europe and northern Asia.
Rationale for inclusion: Traditionally used to treat jaundice.
Notes: Contains umbelliferone, a compound similar to coumarin with antibiotic activity against brucellosis (Bishop *et al.* *J Ecol* 1994;82:195-210).

268 Pimento Berries, allspice (*Pimenta officinalis*) [Part used: Fruit]

Description: The dried unripe fruit of a midcanopy tree native to Central America.
Rationale for inclusion: Traditionally used to treat toothache, stomach-ache, flatulence, fever, flu and colds.
Notes: Extracts of the berry were reported to inhibit proliferation of breast cancer cell lines in athymic mice (Zhang *et al.* *Oncotarget* 2015;6:16379-95).

269 Aniseed (*Pimpinella anisum*) [Part used: Seed]

Description: A herbaceous annual flowering plant in the family Apiaceae native to the eastern Mediterranean region and Southwest Asia.
Rationale for inclusion: Traditionally used to treat flatulence.
Notes: Extracts of the seed were reported to show antimicrobial activity against cariogenic bacteria (Kermansha *et al.* *Oral Health Dent Manag* 2014;13:395-401).

270 Pine nuts (*Pinus spp*) [Part used: Seed]

Description: Seed of an evergreen conifer tree in the family Pinaceae.
Rationale for inclusion: Dietary intake of nuts is associated with lower all cause mortality and risk of a variety of diseases (e.g. van den Brandt *et al.* *Int J Epidemiol* 2015;44:1038-49).
Notes: Also traditionally used to treat constipation.

271 Pepper Powder Black (*Piper nigrum*) [Part used: Fruit]

Description: A flowering vine in the family Piperaceae, cultivated for its fruit, which is usually dried whole and used as a spice and seasoning.
Rationale for inclusion: Traditionally used as an eye salve, and to treat sore throat, congestion and cough.
Notes: Contains piperine, which has been reported to ameliorate LPS-induced acute lung injury in mice (Lu *et al.* *Inflammation* 2015).

272 Pepper Powder White (*Piper nigrum*) [Part used: Fruit]

Description: White pepper consists of the seed of the pepper plant alone (see above), with the darker-coloured skin of the pepper fruit removed.
Rationale for inclusion: Traditionally used as an eye salve, and to treat sore throat, congestion and cough.
Notes: Contains piperine, which has been reported to ameliorate LPS-induced acute lung injury in mice (Lu *et al.* *Inflammation* 2015).

273 Jamaican Dogwood (*Piscidia piscipula*) [Part used: Bark]

Description: A tropical, deciduous tree native to southern Florida, Texas, the Caribbean, and Latin America.
Rationale for inclusion: Traditionally used to treat nervous conditions and pain, and also to sedate fish, allowing them to be caught by hand.
Notes: Anti-fungal activity of extracts has been reported (Caceres *et al.* *J Ethnopharmacol* 1991;31:263-76).

274 Pistachio (*Pistacia vera*) [Part used: Seed]

Description: A small tree in the cashew family, originating from Central Asia.
Rationale for inclusion: Dietary intake of nuts is associated with lower all cause mortality and risk of a

inclusion: variety of diseases (e.g. van den Brandt *et al.* Int J Epidemiol 2015;44:1038-49).
Notes: Extracts were reported to show cytoprotective effects against oxidative stress in rat hepatocytes (Shahrak *et al.* Iran J Pharm Res 2014;13:1263-77).

275 Pea (*Pisum sativum*) [Part used: Seed]

Description: An annual leguminous plant cultivated widely for the edible seed and fruit.
Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).
Notes: Extracts of pea were reported to inhibit inflammation in the dextran sodium sulfate model of mouse colitis (Utrilla *et al.* Mol Nutr Food Res 2015;59:807-19).

276 Plantain (*Plantago major*) [Part used: Aerial parts]

Description: A widely distributed herbaceous perennial plant native to Europe and Asia.
Rationale for inclusion: Traditionally used as a poultice applied to wounds, stings and sores.
Notes: Extract was reported to inhibit cell death induced by tertiary butyl hydrogen peroxide (Mello *et al.* Molecules 2015;20:17747-59).

277 Granadilla (*Passiflora ligularis*) [Part used: Fruit]

Description: A small fruit bearing tree native to the South American Andes.
Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).
Notes: Extract was reported to inhibit proliferation of human hepatocellular carcinoma Hep3B cells *in vitro* (Carraz *et al.* J Ethnopharmacol 2015;166:185-99).

278 Channeled wrack (*Pelvetia canaliculata*) [Part used: Marine macroalga]

Description: A common brown alga (Phaeophyceae) found on the upper shores of Europe.
Rationale for inclusion: Traditionally used to combat hairloss.
Notes: Extract of *P. canaliculata* was reported to inhibit oxidative stress in cultured Caco-2 cells (O'Sullivan *et al.* Food Chem 2012;134:1137-40).

279 Physalis (*Physalis peruviana*) [Part used: Fruit]

Description: An annual or perennial herbaceous plant in the nightshade family (Solanaceae).
Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).
Notes: Physapubescin B, isolated from *P. peruviana*, was reported to exhibit antitumor activity against prostate cancer *in vitro* and *in vivo* (Ding *et al.* J Agric Food Chem 2015).

280 Oyster mushroom (*Pleurotus ostreatus*) [Part used: Fungal fruiting body]

Description: A common edible mushroom, native to Europe, now cultivated globally.
Rationale for inclusion: Traditionally used to treat infections, diabetes and cancer.
Notes: Rich in the HMG-CoA reductase inhibitor lovastatin, which inhibits cholesterol synthesis. Ingestion results in reduced cholesterol levels in rats *in vivo* (Bobek *et al.* Nutrition 1998;14:282-6).

281 Mandrake (*Mandragora officinarum*) [Part used: Root]

Description: A perennial herbaceous plant native to Mediterranean region.
Rationale for inclusion: Traditionally used as a hallucinogen, narcotic and anaesthetic. Also used externally to relieve rheumatic pains.
Notes: Reported to contain the withanolides mandragorolide A and mandragorolide B (Suleiman *et al.* Fitoterapia 2010;81:864-8).

282 Patchouli (*Pogostemon cablin*) [Part used: Leaves]

Description: A bushy herb of the mint family, native to the tropical regions of Asia.
Rationale for inclusion: Traditionally used as an antidepressant, antiseptic and aphrodisiac.
Notes: Extract of *P. cablin* was reported to exhibit insect repellent properties (Liu *et al.* J

283 Knot Grass (*Polygonum aviculare*) [Part used: Aerial parts]

Description: An annual herb native to Eurasia and North America.

Rationale for inclusion: Traditionally used to treat dysentery, hemorrhoids, diarrhea and both internal and external bleeding.

Notes: (-)-loliolide, isolated from extract of *P. aviculare*, was reported to inhibit cellular senescence in human dermal fibroblasts (Yang *et al.* Arch Pharm Res 2015;38:876-84).

284 Bistort Root (*Polygonum bistorta*) [Part used: Root]

Description: A flowering plant native to Europe and north and west Asia.

Rationale for inclusion: Traditionally used to treat diarrhea, dysentery, cholera, gastritis, cystitis and heavy menstrual bleeding. Also externally for skin disorders and inflammation.

Notes: Extract was reported to inhibit xanthine oxidase activity *in vitro* (Orbán-Gyapai *et al.* Phytother Res 2015;29:459-65).

285 Polypody Root (*Polypodium vulgare*) [Part used: Root]

Description: A fern of the Polypodiaceae family, native to Europe and North Africa.

Rationale for inclusion: Traditionally used as a purgative and vermifuge (to expel parasitic worms).

Notes: Little studied.

286 Poplar White Bark (*Populus alba*) [Part used: Bark]

Description: A medium-sized deciduous tree native to Europe and North Africa.

Rationale for inclusion: Traditionally used to treat rheumatism, arthritis, gout, lower back pains, urinary complaints, digestive and liver disorders, anorexia, fevers and menstrual cramps.

Notes: Extract was reported to inhibit pro-inflammatory cytokine production by LPS-stimulated RAW 264.7 macrophages *in vitro* (Kwon *et al.* BMB Rep 2014;47:318-23).

287 Pine needles (*Pinus spp.*) [Part used: Leaves]

Description: An evergreen conifer tree in the family Pinaceae.

Rationale for inclusion: Traditionally used to treat bronchial asthma, wounds, allergic rashes and dermatitis.

Notes: Extract was reported to relieve reserpine-induced symptoms of depression in Wistar rats (Bolandghamat *et al.* Pharmacogn Mag 2011;7:248-253).

288 Tormentil Root (*Potentilla erecta*) [Part used: Root]

Description: A herbaceous perennial plant belonging to the rose family (Rosaceae).

Rationale for inclusion: Traditionally used to treat diarrhoea, dysentery, irritable bowel syndrome, colitis, and ulcerative colitis.

Notes: Extracts were reported to reduce C-reactive protein in a trial of active ulcerative colitis (Huber *et al.* J Clin Gastroenterol 2007;41:834-8).

289 Cowslip Flowers (*Primula veris*) [Part used: Flower]

Description: A flowering plant in the family Primulaceae, native to Europe and Asia.

Rationale for inclusion: Traditionally used as a sedative and muscle relaxant, and to treat kidney problems, inflammation and bruising.

Notes: Extracts were reported to inhibit tumor necrosis factor-alpha secretion from mouse macrophages *in vitro* (Nadi *et al.* Iran J Pharm Res 2010;9:83-7).

290 Self Heal (*Prunella vulgaris*) [Part used: Aerial parts]

Description: A herbaceous edible plant, native to North America.

Rationale for inclusion: Traditionally used to treat sore throat, fever, diarrhoea, internal bleeding, and disorders of the liver and heart.

Notes: Extract was reported to enhance cognitive performance in mice (Park *et al.* Phytother Res 2015).

291 Apricot (*Prunus armeniaca*) [Part used: Fruit]

Description: A small tree cultivated widely for the edible fruit.
Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).
Notes: Extract was reported to inhibit intestinal diacylglyceride acyltransferase 1 activity *in vitro* (Velliquette *et al.* Nutr Metab (Lond) 2015;12:27).

292 Cherry (*Prunus avium*) [Part used: Fruit]

Description: A small tree cultivated widely for the edible fruit.
Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).
Notes: Dietary intake of cherry was reported to alter abdominal adiposity, adipose gene transcription and inflammation in obesity-prone rats fed a high fat diet (Seymour *et al.* J Med Food 2009;12:935-42).

293 Wild Cherry Bark (*Prunus avium*) [Part used: Bark]

Description: A small tree cultivated widely for the edible fruit.
Rationale for inclusion: Traditionally used to treat cough, whooping cough and bronchitis.
Notes: Cherry bark extract was reported to reduce inflammatory markers in adipose tissue of diet-induced obese mice (Kang *et al.* Evid Based Complement Alternat Med 2015).

294 Plum (*Prunus domestica*) [Part used: Fruit]

Description: A deciduous flowering tree in the family Rosaceae cultivated for the edible fruit.
Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).
Notes: Extract of *P. domestica* was reported to testosterone-induced benign prostatic hyperplasia (BPH) in male Wistar rats (Swaroop *et al.* Toxicol Mech Methods 2015).

295 Almonds (*Prunus dulcis*) [Part used: Seed]

Description: A tree native to the Middle East and South Asia.
Rationale for inclusion: Dietary intake of nuts is associated with lower all cause mortality and risk of a variety of diseases (e.g. van den Brandt *et al.* Int J Epidemiol 2015;44:1038-49).
Notes: Dietary consumption of almonds has been reported to be associated with reduced circulating LDL-cholesterol levels (Berryman *et al.* Nutr Rev 2011;69:171-85).

296 Nectarine (*Prunus persica*) [Part used: Fruit]

Description: A small tree cultivated widely for the edible fruit.
Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).
Notes: Nectarine extract was reported to promote longevity in the fruit fly *Drosophila melanogaster* (Boyd *et al.* Free Radic Biol Med 2011;50:1669-78).

297 Sloe (*Prunus spinosa*) [Part used: Fruit]

Description: A small tree native to Europe, western Asia, and northwest Africa.
Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).
Notes: Also traditionally used to treat fever, and constipation.

298 Chayote (*Sechium edule*) [Part used: Fruit]

Description: An edible plant belonging to the gourd family, native to Mesoamerica.
Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).
Notes: Extract of the fruit was reported to induce apoptosis in leukaemic cell lines but not in normal cells (Aguñiga-Sánchez *et al.* Nutr Cancer 2015;67:250-7).

299 Lungwort (*Pulmonaria officinalis*) [Part used: Leaves]

Description: A herbaceous evergreen perennial rhizomatous plant native to Europe and Asia.
Rationale for inclusion: Traditionally used to treat chest diseases and asthma.

inclusion:

Notes: Extract was reported to contain an anticoagulant (Byshevskii *et al.* Gematol Transfuziol 1990;35:6-9).

300 Pomegranate (*Punica granatum*) [Part used: Fruit]

Description: A small, fruit bearing deciduous tree, native to India and the Middle East.

Rationale for Dietary intake of fruits and vegetables is inversely correlated with all cause

inclusion: mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).

Notes: Punicalagin, a compound isolated from pomegranate, was reported to ameliorate cardiac mitochondrial impairment in obese rats via AMPK activation (Cao *et al.* Sci Rep 2015).

301 Pygeum / Red Stinkwood Bark (*Pygeum africanum*) [Part used: Bark]

Description: An evergreen tree native to sub-Saharan Africa and Madagascar.

Rationale for Traditionally used to treat benign prostatic hyperplasia (BPH).

inclusion:

Notes: A Cochrane Review concluded that a standardized preparation of *P. africanum* may be a useful for lower urinary symptoms consistent with BPH (Wilt *et al.* Cochrane Database Syst Rev 2002;1,CD001044).

302 Mountain Ash / Rowan Berries (*Sorbus aucuparia, Pyrus aucuparia*) [Part used: Berry]

Description: A deciduous tree in the rose family, native to Europe, Asia and North Africa.

Rationale for Traditionally used to treat fever, infections, colds, flu, rheumatism and gout.

inclusion:

Notes: Extract was reported to inhibit thermooxidative degradation of vegetable oils (Aladedunye *et al.* Food Chem 2014;159:273-81).

303 Pear (*Pyrus communis*) [Part used: Fruit]

Description: A widely cultivated fruit bearing tree, native to Europe and southwest Asia.

Rationale for Dietary intake of fruits and vegetables is inversely correlated with all cause

inclusion: mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).

Notes: Dietary intake was reported to be inversely correlated with risk of developing stroke (Larsson *et al.* Atherosclerosis 2013;227:147-52).

304 Oak Bark (*Quercus robur*) [Part used: Bark]

Description: A large tree in the beech family, Fagaceae, native to Europe.

Rationale for Traditionally used to treat diarrhoea, dysentery, tonsillitis, pharyngitis, laryngitis, and as an enema to treat haemorrhoids.

inclusion:

Notes: Extract of oak wood was reported to reduce feelings of tiredness and tension in healthy human volunteers (Országhová *et al.* Phytother Res 2015;29:1219-24).

305 Pilewort, Lesser celandine (*Ranunculus ficaria*) [Part used: Aerial parts]

Description: A low-growing, perennial flowering plant in the buttercup family Ranunculaceae.

Rationale for Traditionally used to treat hemorrhoids.

inclusion:

Notes: Little studied.

306 Radish (*Raphanus sativus*) [Part used: Root]

Description: A widely cultivated edible root vegetable of the Brassicaceae family.

Rationale for Dietary intake of fruits and vegetables is inversely correlated with all cause

inclusion: mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).

Notes: Extract was reported to increase expression of the endogenous secretory receptor for advanced glycation end products induced by the high glucose in human endothelial cells (Okada *et al.* J Pharm Bioallied Sci 2015;7:145-50).

307 Mooli, daikon (*Raphanus sativus longipinnatus*) [Part used: Root]

Description: A widely cultivated edible root vegetable of the Brassicaceae family.

Rationale for Dietary intake of fruits and vegetables is inversely correlated with all cause

inclusion: mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).

Notes: Also traditionally used to aid digestion, and to treat both constipation and diarrhea.

308 Rehmannia [Shu Di Huang] (*Rehmannia glutinosa*) [Part used: Root]

Description: A perennial herbaceous flowering plant, and one of the 50 fundamental herbs used in traditional Chinese medicine.

Rationale for inclusion: Traditionally used to treat fever, diabetes, anemia, tinnitus and hearing loss.

Notes: Supplementation with *R. glutinosa* for 8 weeks was reported to reduce waist circumference in obese women (Han *et al.* Food Funct 2015;6:2684-92).

309 Buckthorn (*Rhamnus cathartica*) [Part used: Bark]

Description: A deciduous shrub in the family Rhamnaceae, native to Europe, northwest Africa and western Asia.

Rationale for inclusion: Traditionally used as a purgative.

Notes: Extract of *R. catharticus* was reported to exhibit antioxidant and antimicrobial properties (Locatelli *et al.* Nat Prod Commun 2011;6:1275-80).

310 Cascara Bark (*Rhamnus purshiana*) [Part used: Bark]

Description: A large, deciduous shrub native to North America.

Rationale for inclusion: Traditionally used as a laxative.

Notes:

Extract was reported to increase the SPF value of sun cream (Ramos *et al.* Int J Cosmet Sci 1996;18:87-101).

311 Rhubarb Root Turkish (*Rheum palmatum*) [Part used: Root]

Description: A herbaceous perennial native to China.

Rationale for inclusion: Traditionally used to treat stomach ailments, fevers, edema and inflammatory disorders.

Notes: Extract was reported to inhibit migration, motility and invasion of MDA-MB-231 breast cancer cells (Nho *et al.* Environ Toxicol Pharmacol 2015;40:30-8).

312 Rhubarb (*Rheum rhabarbarum*) [Part used: Stem]

Description: A herbaceous perennial plant, cultivated for the edible petiole (leaf stem).

Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).

Notes: Also traditionally used as a laxative.

313 Rhodiola root (*Rhodiola rosea*) [Part used: Root]

Description: A widely distributed perennial flowering plant in the family Crassulaceae.

Rationale for inclusion: Traditionally used to increase physical endurance, work productivity and longevity, and to treat fatigue, depression, anemia, impotence, gastrointestinal ailments, infections, and nervous system disorders.

Notes: Extracts were reported to exhibit anti-tyrosinase and antioxidant activities (Ya *et al.* Pak J Pharm Sci 2015;28:1737-44).

314 Blackcurrant (*Ribes nigrum*) [Part used: Fruit]

Description: A woody shrub in the family Grossulariaceae, native to temperate parts of central and northern Europe and northern Asia.

Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).

Notes: Anthocyanins extracted from *R. nigrum* were reported to act as phytoestrogens *in vitro* and *in vivo* (Nanashima *et al.* Mol Nutr Food Res 2015).

315 Blackcurrant (*Ribes nigrum*) [Part used: Leaves]

Description: A woody shrub in the family Grossulariaceae, native to temperate parts of central and northern Europe and northern Asia.

Rationale for inclusion: Traditionally used to treat arthritis, spasmodic cough, diarrhea and sore throat.

Notes: Extract of *R. nigrum* leaves was reported to enhance endothelial cell viability and nitric oxide synthase (eNOS) activation (Luzak *et al.* J Physiol Biochem

2014;70:1007-19).

316 Redcurrant (*Ribes rubrum*) [Part used: Fruit]

Description: A deciduous shrub in the in the gooseberry family Grossulariaceae, native to western Europe.

Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).

Notes: Extracts were reported to inhibit xanthine oxidase activity (Costantino *et al.* Planta Med 1992;58:342-4).

317 Gooseberry (*Ribes uva-crispa*) [Part used: Fruti]

Description: A deciduous shrub native to Europe and parts of Asia.

Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).

Notes: Extracts were reported to inhibit bacterial biofilm formation (Strugala *et al.* Nat Prod Commun 2015;10:467-74).

318 Rosehip (*Rosa canina*) [Part used: Fruit]

Description: A climbing wild rose species native to Europe, northwest Africa and western Asia.

Rationale for inclusion: Traditionally used to treat viral infections and disorders of the kidneys and urinary tract.

Notes: Positive findings have been reported in exploratory trials of rosehip supplementation for osteoarthritis, rheumatoid arthritis and lower back pain (Chrubasik *et al.* Phytother Res 2008;22:725-33).

319 Rose Buds, Red (*Rosa spp*) [Part used: Flower bud]

Description: A woody perennial within the family Rosaceae.

Rationale for inclusion: Traditionally used to treat dysentery, diarrhea, bruises, irregular menstruation and carbuncles.

Notes: Geraniol, present in rose bud, has been reported to produce antidepressant-like effects in a chronic unpredictable mild stress mice model (Deng *et al.* Physiol Behav 2015).

320 Rose Petals, Red (*Rosa spp*) [Part used: Petals]

Description: A woody perennial within the family Rosaceae.

Rationale for inclusion: Traditionally used to treat coughs.

Notes: Extracts of rose petal were reported to inhibit activity of elastase and tyrosinase (Choi *et al.* Lab Anim Res 2015;31:148-52).

321 Rosemary (*Rosmarinus officinalis*) [Part used: Aerial parts]

Description: A woody, perennial herb with evergreen, needle-like leaves, native to the Mediterranean region.

Rationale for inclusion: Traditionally used to improve memory, relieve muscle pain and spasm and to stimulate hair growth.

Notes: Numerous studies have reported anti-cancer activity of rosemary extracts (González-Vallinas *et al.* Nutr Cancer 2015;9:1-9).

322 Blackberry (*Rubus fruticosus*) [Part used: Fruit]

Description: A perennial plant typically bearing biennial stems with edible fruit.

Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).

Notes: Extracts of blackberry increased significantly the nuclear expression of HNF-1a in colon cells (Real *et al.* PLoS One 2015;10:e0138768).

323 Raspberry (*Rubus idaeus*) [Part used: Fruit]

Description: A woody perennial cultivated widely for the edible fruit.

Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).

Notes: Extract of the berry was reported to exhibit antimicrobial effects and inhibit the

expression of virulence factors by *V. cholerae* (Khalifa *et al.* Phytother Res 2015).

324 Raspberry (*Rubus idaeus*) [Part used: Leaves]

Description: A woody perennial cultivated widely for the edible fruit.

Rationale for inclusion: Traditionally used to treat diarrhea, flu, fever, diabetes and menstrual problems.

Notes:

Extract of raspberry cell was reported to increase the synthesis of extracellular matrix components by cultured fibroblasts (Tito *et al.* Int J Cosmet Sci 2015).

325 Blackberry (*Rubus fruticosus*) [Part used: Leaves]

Description: A perennial plant typically bearing biennial stems with edible fruit.

Rationale for inclusion: Traditionally used to treat toothache, abscesses and skin ulcers.

Notes:

Reported to be rich in ellagic acid derivatives, including sanguin H-6, ellagitannins, lambertianin C and casuarinin (Oszmiański *et al.* Molecules 2015;20:4951-66).

326 Sheeps Sorrel (*Rumex acetosella*) [Part used: Leaves]

Description: A common flowering perennial weed.

Rationale for inclusion: Traditionally used to treat pain and swelling of the nasal passages and respiratory tract and for treating bacterial infections.

Notes:

Little studied.

327 Yellow Dock Root (*Rumex crispus*) [Part used: Root]

Description: A perennial flowering plant in the family Polygonaceae, native to Europe and Western Asia.

Rationale for inclusion: Traditionally used to treat anemia, also used topically to treat sores, rashes, skin infections and athlete's foot.

Notes:

Nepodin isolated from *R. crispus*, was reported to exhibit antimalarial activity in vitro and in vivo (Lee *et al.* Arch Pharm Res 2013;36:430-5).

328 Butchers Broom (*Ruscus aculeatus*) [Part used: Aerial parts]

Description: A low growing evergreen, flowering shrub native to Eurasia.

Rationale for inclusion: Traditionally used to treat chronic venous insufficiency.

Notes:

Ruscogenin, isolated *R. aculeatus*, was reported to exhibit anti-inflammatory activity via nuclear factor-kappaB inhibition (Huang *et al.* J Pharmacol Sci 2008;108:198-205).

329 Rue Herb (*Ruta graveolens*) [Part used: Aerial parts]

Description: A herbaceous perennial flowering small shrub, native to the Mediterranean.

Rationale for inclusion: Traditionally used to induce menstruation and abortion.

Notes:

Extract is mutagenic and hepatotoxic. Also capable of inducing severe phytophotodermatitis (Eickhorst *et al.* Dermatitis 2007;18:52-55).

330 Saw Palmetto Berries (*Sabal serrulata* / *Serenoa repens*) [Part used: Berry]

Description: A small flowering fan palm native to Florida and the South East US.

Rationale for inclusion: Traditionally used to treat benign prostatic hyperplasia (BPH).

Notes:

Meta-analyses have reported that *S. serrulata* is safe and effective for mild-to-moderate BPH compared to placebo, finasteride, and tamsulosin (Wilt *et al.* Cochrane Database Syst Rev 2002;3:CD001423).

331 Willow, white (*Salix alba*) [Part used: Bark]

Description: A medium-sized deciduous tree native to Europe and Western Asia.

Rationale for inclusion: Traditionally used to treat aches, pains and fevers.

Notes:

Salicylic acid, like aspirin, is a chemical derivative of salicin, isolated from willow bark. Salicin was also reported to inhibit angiogenesis by blocking the ROS-ERK pathways (Kong *et al.* Phytother Res 2014;28:1246-51).

332 Sage (*Salvia officinalis*) [Part used: Aerial parts]

Description: A perennial, evergreen flowering subshrub, native to the Mediterranean region.

Rationale for inclusion: Traditionally used to treat disorders of the respiratory tract, mouth, gastrointestinal tract, and skin.

Notes: A number of placebo-controlled randomized trials in healthy humans have reported that extract of sage improves memory, attention/executive function, alertness and mood (Kennedy *et al.* Adv Nutr 2011;2:32-50).

333 Elderberries (*Sambucus nigra*) [Part used: Berry]

Description: A flowering plant in the family Adoxaceae native to most of Europe.

Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).

Notes: Also traditionally used to treat viral infections, fever and colds.

334 Elderflower (*Sambucus nigra*) [Part used: Flower]

Description: A flowering plant in the family Adoxaceae native to most of Europe.

Rationale for inclusion: Traditionally used to treat upper respiratory infections, bronchitis, cough and fever.

Notes: Extract of elderflower was reported to increase glucose uptake in primary porcine myotube cultures and reduce fat accumulation in *Caenorhabditis elegans* (Bhattacharya *et al.* J Agric Food Chem 2013;61:11033-40).

335 Blood Root (*Sanguinaria canadensis*) [Part used: Root]

Description: A perennial, herbaceous flowering plant native to eastern North America.

Rationale for inclusion: Traditionally used as an emetic.

Notes:

Sanguinarine, isolated from blood root, has been reported to induce apoptosis in cancer cell lines (Çeçen *et al.* J Int Adv Otol 2015;11:19-22).

Warning: The unfractionated extract can cause severe skin lesions.

336 Schizandra [Wu Wei Zi] (*Schisandra chinensis*) [Part used: Fruit]

Description: A deciduous woody vine native to Northern China and the Russian Far East.

Rationale for inclusion: Traditionally used to treat colds and sea-sickness and as an adaptogen.

Notes: Considered one of the 50 fundamental herbs in Chinese traditional medicine.

Dibenzocyclooctadiene lignans isolated from the fruit were reported to inhibit hepatitis B virus activity (Xue *et al.* Phytochemistry 2015;116:253-61).

337 Figwort (*Scrophularia nodosa*) [Part used: Leaves]

Description: A perennial herbaceous plant native to temperate regions of the Northern hemisphere.

Rationale for inclusion: Traditionally used to treat swelling, psoriasis and eczema.

Notes:

Extracts were reported to exhibit antibacterial and antifungal activities (Ahmad *et al.* Pak J Pharm Sci 2012;25:307-13).

338 Skullcap (*Scutellaria lateriflora*) [Part used: Aerial parts]

Description: A perennial herb of the mint family, Lamiaceae, native to North America.

Rationale for inclusion: Traditionally used as a mild sedative and sleep promoter.

Notes:

Skullcap was reported to reduce symptoms of anxiety in a small In a small placebo-controlled study (Wolfson *et al.* Alt Ther Health Med 2002;9:74-78).

339 Sesame (*Sesamum indicum*) [Part used: Seed]

Description: A flowering plant native to Africa and India, cultivated for its edible seeds.

Rationale for inclusion: Traditionally used to induce menstruation.

Notes:

Extract of sesame seed was reported to elicit anti-amnesic effect via the cholinergic pathway in scopolamine intoxicated mice (Chidambaram *et al.* Environ Toxicol 2015).

340 Milkthistle Seed (*Silybum marianum*) [Part used: Seed]

Description: An annual or biennial plant of the Asteraceae family, native to Southern Europe and Asia.

Rationale for inclusion: Traditionally used to treat liver disease and cancer.

Notes: *Silybum marianum* extract supplementation was reported to reduce C-reactive protein in patients with type 2 diabetes mellitus (Ebrahimpour *et al.* Phytomedicine 2015;22:290-6).

341 Mustard Seed, White (*Sinapis alba*) [Part used: Seed]

Description: An annual plant of the family Brassicaceae widely cultivated for its edible seeds.

Rationale for inclusion: Traditionally used to treat coughs, tuberculosis and pleurisy.

Notes: Dietary supplementation of BALB/c mice with mustard seed was reported to attenuate imiquimod-induced psoriasiform inflammation of the skin (Yang *et al.* J Dermatol 2013;40:543-52).

342 Sarsaparilla Root (*Smilax ornata*) [Part used: Root]

Description: A perennial, trailing vine native to Mexico and Central America.

Rationale for inclusion: Traditionally used to treat syphilis.

Notes: Extract of *S. ornata* root was reported to inhibit migration and invasion of cancer cells by suppressing TGF- β 1 pathway (She *et al.* PLoS One 2015;10:e0118287).

343 Tomato (*Solanum lycopersicum*) [Part used: Fruit]

Description: A widely cultivated fruit of the nightshade family, Solanaceae, native to South America.

Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).

Notes: Lycopene enriched tomato extract was reported to inhibit hypoxia, angiogenesis and metastatic markers in early stage N-Nitrosodiethylamine induced hepatocellular carcinoma (Bhatia *et al.* Nutr Cancer 2015).

344 Aubergine / Eggplant (*Solanum melongena*) [Part used: Fruit]

Description: A species of the nightshade family, cultivated widely for its edible fruit.

Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).

Notes: Dioscin isolated from *S. melongena* was reported to attenuate alpha-MSH-induced melanogenesis in B16 murine melanoma cells via downregulation of phospho-CREB and MITF (Nishina *et al.* J Food Sci 2015;80:H2354-9).

345 Potato (*Solanum tuberosum*) [Part used: Root]

Description: A widely cultivated perennial tuberous crop from the nightshade family.

Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).

Notes: Glycoalkaloids isolated from potatoes were reported to inhibit proliferation of various human cancer cell lines *in vitro* (Friedman *et al.* J Agric Food Chem 2005;53:6162-6169).

346 Golden Rod (*Solidago virgaurea*) [Part used: Aerial parts]

Description: A herbaceous perennial plant of the family Asteraceae native to Europe, North Africa and northern, central, and southwestern Asia.

Rationale for inclusion: Traditionally used to treat wounds and as an antiseptic.

Notes: Extract of *S. virgaurea* was reported to protect against experimental cardiotoxicity in rats (El-Tantawy *et al.* J Physiol Biochem 2014;70:33-42).

347 Spirulina (*Arthrospira platensis*) [Part used: Whole cell extract]

Description: A free-floating filamentous cyanobacteria growing in lakes with high pH.

- Rationale for inclusion:* Traditionally used as a food and also as an immune stimulant.
- Notes:* Calcium spirulan isolated from *Spirulina* was reported to inhibit herpes simplex virus 1 attachment to human keratinocytes and to protect against herpes labialis (Mader *et al.* J Allergy Clin Immunol 2015).
- 348** Wood Betony (*Stachys betonica* / *Stachys officinalis*) [Part used: Aerial parts]
- Description:* A perennial grassland herb native to Europe, western Asia and North Africa.
- Rationale for inclusion:* Traditionally used to treat arthritis and gout.
- Notes:* Extract was reported to exhibit anti-fungal activity (Lazarevi *et al.* Chem Biodivers 2013;10:1335-49).
- 349** Chickweed (*Stellaria media*) [Part used: Aerial parts]
- Description:* An flowering herbaceous annual plant native to Europe.
- Rationale for inclusion:* Traditionally used to treat skin diseases, bronchitis, rheumatic pains, arthritis and period pain.
- Notes:* A peptide isolated from *S. media* leaves was reported to be a potent antifungal agent (Rogozhin *et al.* Biochimie 2015;116:125-32).
- 350** Queen's Delight (*Stillingia sylvatica*) [Part used: Root]
- Description:* family Euphorbiaceae, native to Latin America and the southern US.
- Rationale for inclusion:* Traditionally used as a cathartic, diuretic, laxative and emetic and also to treat syphilis.
- Notes:* Little studied.
- 351** Comfrey (*Symphytum officinale*) [Part used: Leaves]
- Description:* A perennial flowering plant in the family Boraginaceae, native to Europe.
- Rationale for inclusion:* Traditionally used to treat rheumatism and gout.
- Notes:* Extract of comfrey leaf was reported to protect zebrafish embryos from UV-induced damage (Cheng *et al.* J Toxicol Pathol 2014;27:115-21).
- 352** Comfrey Root (*Symphytum officinale*) [Part used: Root]
- Description:* A perennial flowering plant in the family Boraginaceae, native to Europe.
- Rationale for inclusion:* Traditionally used to treat disorders of the gastrointestinal tract, burns and wounds.
- Notes:* Aqueous extract of comfrey root was reported to alleviate artificially irritated skin in human volunteers (Savic *et al.* Phytother Res 2015;29:1117-22).
- 353** Cloves (*Syzygium aromaticum*) [Part used: Flower bud]
- Description:* Cloves are the aromatic flower buds of an evergreen tree in the family Myrtaceae, native to the Maluku Islands in Indonesia.
- Rationale for inclusion:* Traditionally used to treat toothache and digestive problems.
- Notes:* Clove oil was reported to protect against carbon tetrachloride (CCl₄)-induced hepatotoxicity in rats (El-Hadary *et al.* Pharm Biol 2015;6:1-9).
- 354** Pau D'arco (*Tabebuia impetiginosa* / *Handroanthus impetiginosus*) [Part used: Bark]
- Description:* Also called pink lapacho, a large deciduous tree native to South America.
- Rationale for inclusion:* Traditionally used to treat smoker's cough and candidiasis and as an adaptogen.
- Notes:* Aqueous extract of pau d'arco was reported to stimulate Nrf2-dependent gene expression and nuclear localization of Nrf2 *in vitro* (Richter *et al.* J Toxicol Sci 2014;39:353-61).
- 355** Feverfew Herb (*Tanacetum parthenium*) [Part used: Aerial parts]
- Description:* A perennial herbaceous flowering plant native to Eurasia.
- Rationale for inclusion:* Traditionally used to treat headaches, arthritis and digestive problems.

Notes: Extract was reported to alleviate acute, inflammatory, articular and neuropathic pain in rats (Di Cesare Mannelli *et al.* Phytomedicine 2015;22:752-8).

356 Tansy Herb (*Tanacetum vulgare*) [Part used: Aerial parts]

Description: A perennial, herbaceous flowering plant of the aster family, native to temperate Europe and Asia.

Rationale for inclusion: Traditionally used to treat intestinal worms, rheumatism, digestive problems, fevers and sores.

Notes: Extract was reported to exhibit antifungal properties (Piras *et al.* Nat Prod Res 2014;28:1906-9).

357 Dandelion Herb (*Taraxacum officinale*) [Part used: Leaves]

Description: A flowering plant in the family Asteraceae native to Eurasia and North America.

Rationale for inclusion: Traditionally used to treat infections, bile and liver problems, and as a diuretic.

Notes: Extract of leaf was reported to reduce CCl₄ induced hepatotoxicity in rats (Gulfraz *et al.* Pak J Pharm Sci 2014;27:825-9).

358 Dandelion Root (*Taraxacum officinale*) [Part used: Root]

Description: A flowering plant in the family Asteraceae native to Eurasia and North America.

Rationale for inclusion: Traditionally used as a laxative and diuretic, and also to treat hepatic and spleen ailments.

Notes: Extract of root was reported to exhibit antibacterial properties (Kenny *et al.* Phytother Res 2015;29:526-32).

359 Woodsage (*Teucrium scorodonia*) [Part used: Aerial parts]

Description: A perennial herb in the Lamiaceae family, native to Western Europe and Tunisia.

Rationale for inclusion: Traditionally used to treat wounds, also as a diuretic and emmenagogue.

Notes: Little studied.

360 Cocoa (*Theobroma cacao*) [Part used: Seed]

Description: An evergreen tree in the family Malvaceae, native to the tropical regions of Central and South America.

Rationale for inclusion: Traditionally used as a stimulant and to treat bronchitis.

Notes: Epidemiological studies suggest that higher dietary chocolate intake is associated with a lower risk of cardiovascular events (Kwok *et al.* Heart 2015;101:1279-87).

361 Thuja Herb (*Thuja occidentalis*) [Part used: Leaves]

Description: An evergreen coniferous tree in the cypress family, native to the Northeastern United States.

Rationale for inclusion: Traditionally used to treat infections, coughs, warts, ringworm and thrush.

Notes: Contains the neurotoxic compound thujone. Extract was reported to reduce airway inflammation in ovalbumin-induced allergic asthma (Shin *et al.* Mol Med Rep 2015;12:4640-6).

362 Lemon Thyme (*Thymus citriodorus*) [Part used: Aerial parts]

Description: An evergreen flowering, mat-forming perennial shrub, native to Eurasia.

Rationale for inclusion: Traditionally used to treat asthma, and also as an antiseptic.

Notes: Little studied.

363 Thyme (*Thymus vulgaris*) [Part used: Aerial parts]

Description: A flowering shrub in the mint family Lamiaceae, native to southern Europe.

Rationale for inclusion: Traditionally used to treat coughs and bronchitis, also as an antiseptic in bandages.

Notes: Antimicrobial activity of thyme extract has been reported (Mohsenipour *et al.* Avicenna J Phytomed 2015;5:309-18).

364 Lime Flowers (*Tilia platyphyllos*) [Part used: Flower]

Description: Unrelated to the lime fruit tree, a deciduous flowering tree in the family Malvaceae, native to much of Europe.

Rationale for inclusion: Traditionally used to treat colds, cough, fever, infections, inflammation, high blood pressure, headache and as an antispasmodic and sedative.

Notes: Carbamate pesticides were identified in lime flower extracts (Rubio *et al.* Anal Chim Acta 2014;820:9-22).

365 Red Clover (*Trifolium pratense*) [Part used: Flower]

Description: A herbaceous flowering plant in the bean family Fabaceae, native to Europe, Western Asia and northwest Africa.

Rationale for inclusion: Traditionally used as an antispasmodic, expectorant, sedative, anti-inflammatory and antidermatosis agent.

Notes: Formononetin, a major compound in red clover extract, was reported to induce apoptosis of human osteosarcoma cell line U2OS by regulating expression of Bcl-2, Bax and MiR-375 *in vitro* and *in vivo* (He *et al.* Cell Physiol Biochem 2015;37:933-9).

366 Fenugreek leaves, Methi (*Trigonella foenum-graecum*) [Part used: Leaves]

Description: A widely cultivated annual plant in the family Fabaceae.

Rationale for inclusion: Traditionally used to stimulate lactation.

Notes: Antinociceptive effects of *Trigonella foenum-graecum* leaf extracts were reported (Javan *et al.* J Ethnopharmacol 1997;58:125-9).

367 Fenugreek Seed (*Trigonella foenum-graecum*) [Part used: Seed]

Description: A widely cultivated annual plant in the family Fabaceae.

Rationale for inclusion: Traditionally used to treat diabetes.

Notes: Fenugreek seed powder incorporated into buns and flatbreads was reported to reduce postprandial blood glucose in healthy subjects (Robert *et al.* Eur J Nutr 2015).

368 Wheatgrass (*Triticum aestivum*.) [Part used: Aerial parts]

Description: A cereal grain crop a cereal grain, originally from the Middle East, now cultivated worldwide.

Rationale for inclusion: Traditionally used to treat diverse diseases, including cancers, diabetes, gastritis and ulcers.

Notes: Wheat grass extract was reported to inhibit benzene-induced leukemia in a murine model (Khan *et al.* Indian J Pharmacol 2015;47:394-7).

369 Coltsfoot (*Tussilago farfara*) [Part used: Aerial parts]

Description: A perennial herbaceous flowering plant native to Eurasia.

Rationale for inclusion: Traditionally used to treat disorders of the respiratory tract, skin conditions, viral infections, influenza, colds, fever, rheumatism and gout.

Notes: Sesquiterpenoids isolated from *T. farfara* inhibited LPS-induced nitric oxide production in macrophages (Qin *et al.* Planta Med 2014;80:703-9).

370 Spinach (*Spinacia oleracea*) [Part used: Leaves]

Description: An edible flowering plant in the family Amaranthaceae native to central and western Asia.

Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).

Notes: Aqueous extract of *S. oleracea* was reported to aid healing of diabetic ulcers in a streptozotocin sensitised rat model (Rahati *et al.* J Sci Food Agric 2015).

371 Enteromorpha (*Ulva prolifera*) [Part used: Marine macroalga]

Description: A green alga in the division Chlorophyta, widely distributed on oceanic shores.

Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause

inclusion: mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).
Notes: Polysaccharides extracted from *U. prolifera* were reported to exhibit lipid lowering properties in rats (Teng Z, *et al.* Int J Biol Macromol 2013;62:254-6).

372 Cat's Claw (*Uncaria tomentosa*) [Part used: Bark]

Description: A woody vine found in the tropical jungles of South and Central America.
Rationale for inclusion: Traditionally used to treat osteoarthritis and rheumatoid arthritis.
Notes: Extract of cat's claw, applied topically, was reported to abate actinic keratoses and early squamous cell cancers in hairless mice exposed to ultraviolet A (UVA) radiation (Mentor *et al.* Dermatol Online J 2015).

373 Stinging nettle (*Urtica dioica*) [Part used: Aerial parts]

Description: A herbaceous perennial flowering plant, native to Europe, Asia, northern Africa, and western North America.
Rationale for inclusion: Traditionally used to treat disorders of the kidneys and urinary tract, gastrointestinal tract, hemorrhage, influenza, rheumatism, and gout.
Notes: Extract of nettle leaf was reported to reverse diabetes mediated alteration in muscarinic cholinergic system in hippocampus and improve memory functions in streptozotocin-induced diabetic mice (Patel *et al.* Metab Brain Dis 2015;30:803-11).

374 Blueberry (*Vaccinium cyanococcus*) [Part used: Fruit]

Description: A perennial flowering shrub native to North America, cultivated for the edible fruit.
Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).
Notes: Dietary supplementation with blueberry was reported to improve cognitive function in 7- to 10-year-old children (Whyte *et al.* Eur J Nutr 2015).

375 Stevia leaf (*Stevia rebaudiana*) [Part used: Leaf]

Description: A perennial plant in the sunflower family, native to Brazil and Paraguay, cultivated for the leaf which is used as a sweetener.
Rationale for inclusion: Traditionally used to treat burns, colic and stomach problems.
Notes: Extract of stevia leaf was reported to inhibit growth of *Streptococcus mutans* and *Lactobacillus acidophilus* (Ajagannanava *et al.* J Int Soc Prev Community Dent 2014;4:S116-21).

376 Bilberry Herb (*Vaccinium myrtillus*) [Part used: Leaves]

Description: A low-growing fruit-bearing shrub native to temperate and subarctic regions.
Rationale for inclusion: Traditionally used to treat diabetes.
Notes: Extracts of leaf were reported to exhibit antistaphylococcal activity (Sadowska *et al.* Acta Biochim Pol 2014;61:163-9).

377 Adzuki bean (*Vigna angularis*) [Part used: Seed]

Description: An annual vine widely grown throughout East Asia for the edible bean.
Rationale for inclusion: Dietary intake of pulses (beans, chickpeas, lentils and peas) is associated with reduced LDL cholesterol levels in man (Ha *et al.* CMAJ 2014;186:E252-62).
Notes: Extracts of *V. angularis* were reported to inhibit mast cell-mediated allergic inflammation (Kim *et al.* Int J Mol Med 2013;32:736-42).

378 Valerian Root (*Valeriana officinalis*) [Part used: Root]

Description: A perennial flowering plant native to Europe and parts of Asia.
Rationale for inclusion: Traditionally used for its sedative and anxiolytic effects.
Notes: Valerenic acid, isolated from *V. officinalis*, was reported to protect against physical and psychological stress by reducing the turnover of serotonin and norepinephrine in hippocampus-amygdala region in mice (Jung *et al.* J Med Food 2015).

379 Vanilla (*Vanilla planifolia*) [Part used: Seed pod]

Description: A species of orchid, native to Mexico.

Rationale for inclusion: Traditionally used as an aphrodisiac, and also to treat intestinal gas and fever.

Notes:

Extract of seed pod was reported to inhibitory acetylcholinesterase activity *in vitro* (Kundu *et al.* Plant Foods Hum Nutr 2013;68:247-53).

380 Cramp, Guelder rose, Bark (*Viburnum opulus*) [Part used: Bark]

Description: A flowering plant in the family Adoxaceae, native to Europe, northern Africa and central Asia.

Rationale for inclusion: Traditionally used to treat muscle cramps, particularly to relieve menstrual pain.

Notes:

Extract of cramp bark was reported to inhibit lipid accumulation in 3T3-L1 cells (Shon *et al.* Prev Nutr Food Sci 2014;19:178-86).

381 Mullein (*Verbascum thapsus*) [Part used: Aerial parts]

Description: A biennial flowering plant native to Europe, northern Africa, and Asia.

Rationale for inclusion: Traditionally used to treat coughs and skin disorders.

Notes:

Extract was reported to exhibit antibacterial properties (Sepahi *et al.* West Indian Med J 2014;63:289-93).

382 Vervain (*Verbena officinalis*) [Part used: Aerial parts]

Description: A perennial herb native to Europe.

Rationale for inclusion: Traditionally used to treat diverse conditions, including headaches, fevers, nervous exhaustion, depression and gall bladder problems.

Notes:

Extract was reported to inhibit tumour formation in mice (Kou *et al.* Afr J Tradit Complement Altern Med 2013;10:512-7).

383 Speedwell (*Veronica officinalis*) [Part used: Aerial parts]

Description: A herbaceous flowering perennial, native to Europe, Eastern North America and western Asia.

Rationale for inclusion: Traditionally used to treat coughs, otitis media, and gastrointestinal disorders.

Notes:

Extract was reported to inhibit proinflammatory mediators via NF- κ B signalling in a human lung cell line (Gründemann *et al.* J Ethnopharmacol 2013;145:118-26).

384 Black Root / Culver's Root (*Veronicastrum virginicum*) [Part used: Root]

Description: A perennial flowering herb native to the United States.

Rationale for inclusion: Traditionally used to treat constipation, colitis, gallstones and hepatitis.

Notes:

Little studied.

385 Black Haw (*Viburnum prunifolium*) [Part used: Bark]

Description: A deciduous flowering shrub native to northeastern North America.

Rationale for inclusion: Traditionally used to treat gynecological conditions, including menstrual cramps, aiding recovery after childbirth and the effects of menopause.

Notes:

Extracts of *V. prunifolium* were reported to relax spontaneous contractions in rabbit jejunum and guinea-pig carbachol-precontracted trachea (Cometa *et al.* J Ethnopharmacol 2009;123:201-7).

386 Broadbean (*Vicia faba*) [Part used: Seed]

Description: A widely cultivated legume native to North Africa, southwest and south Asia.

Rationale for inclusion: Dietary intake of pulses (beans, chickpeas, lentils and peas) is associated with reduced LDL cholesterol levels in man (Ha *et al.* CMAJ 2014;186:E252-62).

Notes:

Extracts of *V. faba* were reported to increase expression of the endogenous secretory receptor for advanced glycation end products in human endothelial cells (Okada *et al.* J Pharm Bioallied Sci 2015;7:145-50).

387 Mung bean (*Vigna radiata*) [Part used: Seed]

Description: A widely cultivated legume native to India.
Rationale for inclusion: Dietary intake of pulses (beans, chickpeas, lentils and peas) is associated with reduced LDL cholesterol levels in man (Ha *et al.* CMAJ 2014;186:E252-62).
Notes: Extract of mung bean was reported to improve survival in a mouse model of sepsis (Zhu *et al.* Evid Bas Comp Alt Med 2012;498467).

388 Periwinkle (*Vinca major*) [Part used: Aerial parts]

Description: A flowering plant in the family Apocynaceae, native to the western Mediterranean.
Rationale for inclusion: Traditionally used to treat excessive menstruation and abnormal uterine bleeding.
Notes: Reported to contain the alkaloids: reserpine, majdine, akuammicine, strictosidine lactam, pseudoakuammigine, akuammine and 10-hydroxycathofoline (Balsevich *et al.* Planta Med 1982;44:91-3).

389 Violet (*Viola odorata*) [Part used: Leaves]

Description: A herbaceous flowering perennial native to Europe and Asia.
Rationale for inclusion: Traditionally used to treat respiratory ailments, digestive problems, insomnia and skin disorders.
Notes: Extract was reported to inhibit tyrosinase activity *in vitro* (Erdogan *et al.* Phytother Res 2015).

390 Heartsease (*Viola tricolor*) [Part used: Aerial parts]

Description: An annual or short-lived perennial wild flower native to Europe.
Rationale for inclusion: Traditionally used to treat respiratory problems, epilepsy, asthma, skin diseases and eczema.
Notes: Aqueous extract was reported to inhibit proliferation of activated lymphocytes in an IL-2 dependent manner (Hellinger *et al.* J Ethnopharmacol 2014;151:299-306).

391 Mistletoe (*Viscum album*) [Part used: Aerial parts]

Description: A hemiparasite on several species of trees, native to Europe and Southern and Western Asia.
Rationale for inclusion: Traditionally used to treat seizures, headaches and cancer.
Notes: Aqueous extract was reported to promote G1 phase cell cycle arrest in SK-Hep1 hepatocarcinoma cells (Dela *et al.* Asian Pac J Cancer Prev 2015;16:6417-21).

392 Agnus Castus / Chaste Berry (*Vitex agnus castus*) [Part used: Fruit]

Description: A flowering shrub native to the Mediterranean region.
Rationale for inclusion: Traditionally used to improve male and female fertility.
Notes: Extract was reported to reduce premenstrual symptoms in Japanese patients (Momoeda *et al.* Adv Ther 2014;31:362-73).

393 Grape (*Vitis vinifera*) [Part used: Fruit]

Description: A widely cultivated fruit bearing vine native to the Mediterranean region.
Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).
Notes: Dietary intake of resveratrol, a compound abundant in grape skin and seeds, was reported to reduce risk of developing frailty in old age (Rabassa *et al.* Am J Clin Nutr 2015).

394 Vine leaves (*Vitis vinifera*) [Part used: Leaves]

Description: A widely cultivated fruit bearing vine native to the Mediterranean region.
Rationale for inclusion: Traditionally used to treat diarrhoea, bleeding, haemorrhoids and varicose veins.
Notes: Aqueous extract was reported to inhibit TNF α -induced IL-8 secretion in human gastric epithelial cells (Sangiovanni *et al.* Food Funct 2015;6:2453-63).

395 Ashwagandha (*Withania somnifera*) [Part used: Root]

Description: A fruit bearing perennial shrub native to India.

Rationale for inclusion: Traditionally used to increase alertness and virility.
Notes: Extract of root was reported to alleviate formalin-induced nociception in mice (Orrù *et al.* Behav Pharmacol 2015).

396 Prickly Ash (*Zanthoxylum americanum*) [Part used: Bark]

Description: An aromatic shrub native to the United States and Canada.
Rationale for inclusion: Traditionally used to treat rheumatism, typhoid and skin diseases.
Notes: Extracts were reported to exhibit broad anti-fungal activity (Bafi-Yebova *et al.* Phytomedicine 2005;12:370-7).

397 Corn silk (*Zea mays*) [Part used: Stigma (silks)]

Description: Elongated stigmas, called silks, emerge from the whorl of husk leaves at the end of the ear of corn seeds, this material is referred to as corn silk.
Rationale for inclusion: Traditionally used to treat bedwetting and other urinary problems.
Notes: Extracts of corn silk were reported to protect against radiation-induced oxidative stress in mice (Bai *et al.* Plant Foods Hum Nutr 2010;65:271-6).

398 Sweetcorn (*Zea mays*) [Part used: Seed]

Description: A widely cultivated grain-bearing plant domesticated in Mesoamerica in prehistoric times.
Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).
Notes: Aqueous extract of maize powder was reported to exhibit antioxidant potential in a meat model system (Yogesh *et al.* J Food Sci Technol 2014;51:3446-51).

399 Ginger root (*Zingiber officinale*) [Part used: Root]

Description: A flowering plant in the family Zingiberaceae, the rhizome is used widely as a spice.
Rationale for inclusion: Traditionally used to treat stomach upset, diarrhea and nausea.
Notes: Geraniol, present in extracts of ginger root, was reported to exhibit antidepressant-like effects in a chronic unpredictable mild stress mouse model (Deng *et al.* Physiol Behav 2015).

400 Red Dates, Jujube fruit [Da Zao] (*Ziziphus jujuba*) [Part used: Fruit]

Description: A fruit bearing deciduous tree native to Southern Asia.
Rationale for inclusion: Dietary intake of fruits and vegetables is inversely correlated with all cause mortality and risk of diverse diseases (e.g. Wang X, *et al.* BMJ 2014;349:g4490).
Notes: *Z. jujuba* was reported to alleviate oral mucositis induced by 5-fluorouracil in a golden hamster model (Koochi-Hosseini *et al.* J Clin Exp Dent 2015;7:e304-9).