6 Superherbs for your Wellness

Treasure Life Cell Sp-A® (TLC Sp-A®)

Treasure Life Cell Sp-A® is a polyherbal concoction formulated from 6 known traditional medicine herbs used in Chinese pharmacopeia for centuries. Individually each of these herbs known to have numerous soothing and healing chattels, the active compounds have been identified and established. However, little was known or reported on their efficacy when they are blended together as polyherbal concoction. Comprehensive phytochemistry study was done to determine the polyherbal concoction active compounds constituencies.

The concoction was analysed by using LCHRMS (*Dionex Ultimate 3000 RS UPLC with Thermo Scientific Q Exactive Orbitrap Hybrid Tandem Mass Spectrometer*) conducted by SIRIM Malaysia. MZCloud (ddMS2 and/or DIA), ChemSpider (exact mass or formula) and local database searches against Mass lists (exact mass with or without RT) and mzVault spectral libraries. Twenty-seven (27) active compounds were isolated, 11 corresponded with compounds listed in the library and 16 are newly profiled compounds, herewith labelled as "Sp-A Factor" the potent component of **Treasure Life Cell Sp-A®** wellness spray. The newly profiled active compounds paper was accepted for publication in Nature Communication (Chemistry) Journal for May issue.

Herbs/Ingredients:

1. ***Astragalus mongholicus* Bunge (syn. *Astragalus membranaceus*) - Fabaceae**

   Other Name(S): Astragale, Astragali, Astragalo, Astragalus Membranaceus, Astragalus mongholicus, Astragli Membranceus, Beg Kei, Bei Qi, Buck Qi, Chinese Astragalus, Huang Qi, Huang Se, Huangqi, Hwanggi, Membranous Milk Vetch, Membranous Milkvetch, Milk Vetch, Mongolian Milk, Mongolian Milkvetch, Ogi, Phaca membranacea, Radix Astragali, Radix Astragalus

   Possibly Effective for:

   - **Reducing side effects of chemotherapy** (reduce nausea, vomiting, diarrhea, and bone marrow suppression (a decrease in the cells that provide immunity)
   - **Diabetes** (help control blood sugar and insulin levels in people with type 2 diabetes)
   - **Other Ethnobotanical Uses:**
     - **Immuno-stimulant**, **anti-perspirant, antidiarrheal, anti-diabetic**, **tonic** properties, **hay fever**, **kidney disease**, and many other conditions, but there is no good scientific evidence to support these uses.

   Side Effects:

   - None if consume moderately as prescribed

2. **American Gingseng (*Panax quinquefolius* L.)**

   Other Names(S): Anchi Ginseng, Baie Rouge, Canadian Ginseng, Ginseng, Ginseng Americano, Occidental Ginseng, Ontario Ginseng, *Panax Quinquefolia, Panax Quinquefolium, Panax quinquefolius*, Racine de Ginseng, Red Berry, Ren Shen, Sang, Shang, Shi Yang Seng, Wisconsin Ginseng, Xi Yang Shen.

   American ginseng (*Panax quinquefolis*) is an herb that grows mainly in North America. People take American ginseng by mouth for **stress**, to **boost the immune system**, and as a **stimulant**. American ginseng is also used for infections of the airways such as **colds** and **flu**, for **diabetes**, and many other conditions, but there is no good scientific evidence to support any of these uses.

Possibly Effective for

- **Diabetes**. Taking American ginseng before a meal, can lower blood sugar.

- **Infection of the airways**. Taking a specific American ginseng extract during flu season might prevent cold or flu symptoms in adults.

Side Effects

- Side effects may include headache for long term use.

Special Precautions and Warnings

- **Pregnancy and breast-feeding**: Stay on the safe side and avoid use.
- **Diabetes**: American ginseng might lower blood sugar.
- **Hormone-sensitive conditions such as breast cancer, uterine cancer, ovarian cancer, endometriosis, or uterine fibroids**: If you have any condition that might be made worse by exposure to estrogen, don't use American ginseng that contains ginsenosides.
- **Trouble sleeping (insomnia)**: If you have trouble sleeping, use American ginseng with caution.
- **Schizophrenia (a mental disorder)**: Be careful when using American ginseng on people with schizophrenia as it caused insomnia and agitation in them.
- **Surgery**: Stop taking American ginseng at least 2 weeks before a scheduled surgery.

3. Lycium Berries (*Lycium chinense* Mill.) - Solanaceae

Other Name(S): Barberry Matrimony Vine, Chinese Boxthorn, Chinese Wolfberry, Di Gu Pi, Digupi, Goji, Goji Berry, Gouqizi, Kuko, Lichi, Licium Barbarum, Litchi, Lycii Berries, Lycii Chinensis, Lycii Fruit, *Lycium barbarum*, *Lycium chinense*, Lycium Fruit, Matrimony Vine, Ning Xia Gou Qi, Wolfberry, Wolf berry.

Lycium Berries or Goji is a plant that grows in the Mediterranean region and parts of Asia. The berries and root bark are used to make medicine. Goji is used for many conditions including diabetes, **high blood pressure**, fever, and age-related **eye problems**, weight loss, improving quality of life, and as a tonic. Goji contains chemicals that might help lower blood pressure and blood sugar. Goji might also help stimulate the immune system and protect organs from oxidative damage. The berries are brand a "superfood," eaten raw or used in herbal teas, juices, wines used in cooking.

Possibly Effective for:

- **Diabetes**. reduces blood sugar after eating in people with diabetes. It might work best in people who are not taking medicine for diabetes.
- **Quality of life**. Drinking goji juice improves various quality of life measures. Energy, quality of sleep, mental function, bowel regularity, mood, and feelings of contentment seem to improve. Short-term memory and eyesight do not.
- **Weight loss**. While dieting and exercising decreases waist size in overweight adults better than dieting and exercising alone. But drinking the juice doesn't further improve weight or body fat.

- **Others:**
  - Blood circulation problems
  - Boost to immune system
  - High antioxidant levels
  - Vitamin C
  - Fiber
  - Iron
  - Vitamin A

Side Effects

- If you take **warfarin** (a **blood thinner**), you may want to avoid them.
- **Diabetes** drugs and **blood pressure drugs**, so talk with your doctor first.

4. *Swietenia mahagoni* (L.) Jacq. – Meliaceae

Other Name(S): Honduran mahogany, mahogany, aguano, araputanga, aguano, araputanga, big leaf mahogany, big-leaf mahogany, caoba, caóba, cedro-í, gaúbana, honduran mahogany, honduras mahogany, hondurasmahogny, mahogany, mara, mogno, mogno-brasileiro, unsubu, yulu.

Swietenia mahagoni, a popular **medicinal** plant in India and some African countries, dates back to ancient times for its curative **properties** in diseases like malaria, diabetes, and diarrhea. It is also used as an anti-pyretic, bitter tonic and astringent. anti-diabetic activities comparable to the synthetic drug

Possibly Effective for:

- **Hypertension – tea from seeds reduce blood pressure**
- **Diabetes** – taking 2 teaspoon of seed powder with warm water help you reduce and stabilize blood sugar.
- **Malaria** – the insecticide properties in seed - help strengthen the body against diseases caused by insects.
- **Constipation** – mashed fruits in warm water helps to relieve constipation
- **Others**
  - anti-pyretic
  - bitter tonic
  - astringent

Side Effects

- **liver injury** when taking excessive **mahogany** seeds (Nausea, loss of appetite, lethargy, dark urine, the whites of the eyes turning yellow or jaundiced)
- **Saponin** will cause gallstones.
- **Saponins** also act as steroids.
- Don't consume **flavonoids** in amounts not more than 200 mg.

5. *Epimedium grandiflorum* C.Morren (Horny goat weed) – Berberidaceae

Other Name(S): Barrenwort, *Epimedium acuminatum*, *Epimedium brevicornum*, *Epimedium grandiflorum*, Epimedium Grandiflorum Radix, *Epimedium koreanum*, *Epimedium macranthum*, *Epimedium pubescens*, *Epimedium sagittatum*, *Epimedium violaceum*, *Epimedium wushanese*, Herba Epimedii, Japanese *Epimedium*, Xian Ling Pi, Yin Yang Huo.

Horny goat weed or herb used to make medicine, about 15 weed species are known as "yin yang huo" in Chinese medicine. It contains phytochemicals which might help increase blood

flow and improve sexual function. It also contains phytoestrogens that might reduce bone loss in postmenopausal women.

Possibly Effective for:

The aerial parts of the plant are prepared as tea, concoction, tonic, powder or eaten fresh as vegetable.

- Aphrodisiac and erectile dysfunction (ED)
- Anti-asthmatic/ chronic bronchitis
- Antirheumatic/ arthritis
- Hypoglycaemic/ diabetic
- Hypertension/vasodilator
- Fatigue

Side Effect:

- Long-term use might cause **dizziness, vomiting, dry mouth, thirst, and nosebleed**. Taking large amounts might cause **spasms, severe abnormal heart beats** and **liver toxicity.**

Special Precautions and Warnings

- **Pregnancy and breast-feeding – avoid using**
- Bleeding disorders might make it worse
- **Hormone sensitive cancers -** might make estrogenic-sensitive conditions worse such as breast and uterine cancer,
- **Low blood pressure** - might lower blood pressure further
- **Surgery -** might increase the risk of bleeding during surgery

6. Sorghum – Poaceae

Other Name(S): Andropogon sorghum, Guinea Corn, Holcus bicolor, Milium nigricans, Millet, Panicum caffrorum, Sorgho, Sorgho à Balais, Sorgho Commun, Sorgho à Graine, Sorgho Vulgaire, Sorghum bicolor, Sorghum vulgare, Sorgo.

Sorghum is a grain. It is commonly eaten as a cereal grain in Africa. The seed and leaves are also sometimes used to make medicine. Traditionally, people use sorghum for digestion problems, HIV/AIDS, obesity, diabetes, and other conditions, but there is no good scientific evidence to support these uses.

Uses & Effectiveness?? Insufficient Evidence for

- HIV/AIDS. Early research shows that taking sorghum might improve the immune system in people with HIV/AIDS already taking antiretroviral drugs.
- Low levels of healthy red blood cells (anaemia) due to iron deficiency. Early research shows that taking sorghum doesn't improve anaemia in people who are also taking iron supplements.
- Obesity. Early research shows that eating sorghum cereal each morning for 8 weeks instead of wheat cereal can reduce body fat in men who are overweight or obese. But it doesn't seem to improve body weight or body mass index (BMI).
- Digestion problems
- Diabetes

Side Effects There isn't enough reliable information to know of possible side effects.

 # Publication:

Go, R., Abdallah, M.S., Mustafa, M., Looi, T.C., Choi, S., and Paik, J. and Yahya, M. (2021). Newly profiled phytochemical constituents from extract of polyherbal compound of Radix Astragali, American ginseng, Goji berry, Indian Mahogany, Horny Goat Weed and Sorghum. *Nature Communication (Chemistry*) May issue.

8 SUPERHERBS FOR YOUR VITALITY

Treasure Cell Life Sp-B® (TCL Sp-B®)

Treasure Cell Life Sp-B® is a polyherbal concoction formulated from 8 known traditional medicine herbs used for centuries globally. Individually each of these herbs known to have numerous soothing and healing chattels, the active compounds have been identified and established. However, little was known or reported on their efficacy when they are blended together as polyherbal concoction. Comprehensive phytochemistry study was done to determine the polyherbal concoction active compounds constituencies.

The concoction was analysed by using LCHRMS (Dionex Ultimate 3000 RS UPLC with Thermo Scientific Q Exactive Orbitrap Hybrid Tandem Mass Spectrometer) conducted by SIRIM Malaysia. MZCloud (ddMS2 and/or DIA), ChemSpider (exact mass or formula) and local database searches against Mass lists (exact mass with or without RT) and mzVault spectral libraries.

Twenty-seven (27) active compounds were isolated, 14 corresponded with compounds listed in the library and 13 are newly profiled compounds, herewith labelled as "**Sp-B Factor**" the potent component of **Treasure Cell Life Sp-B®** vitality spray.

Herbs/Ingredients:

1. *Eucommia ulmoides* Oliv. - Eucommiaceae

Other Name(S): Gutta-Percha or Du Zhong

Medicinal Uses:

Analgesic, Anticholesterolemic, Aphrodisiac, Astringent, Depurative, Diuretic, Hepatic, Hypotensive, sedative, Tonic and Vasodilator

Gutta-percha, known as Du Zhong in China, is commonly used in Chinese herbalism, where it is considered to be one of the 50 fundamental herbs. It is considered to be an excellent tonic for the kidneys and liver, and is thought to act specifically on the lower part of the body. Much interest has been aroused by Du Zhong's ability to reduce high blood pressure. In a clinical trial involving 119 people, 46% of those treated with the herb showed a significant reduction

in blood pressure. The stem bark is analgesic, anticholesterolemic, aphrodisiac, depurative, diuretic, hepatic, hypotensive, sedative, tonic and vasodilator. Its use lowers blood pressure (the stir-fried bark is stronger than raw and a decoction is stronger than a tincture) and reduces the absorption of cholesterol. It is used in the treatment of impotence, frequent urination, lumbago, weakness of the lower part of the body, aching back and knees, hypertension and threatened abortion. The flowers and the fruit are astringent.

2. *Polygonum multiflorum* Gueldenst. – Polygonaceae

Other Name(S): He Shou Wu, Tuber fleece flower

Medicinal Uses:

Antibacterial, Anticholesterolemic, Astringent, Antipyretic, Antispasmodic, Cardiotonic, Demulcent, Antitumor, Sedative, Tonic, Deobstruent, Hypoglycaemic, Laxative.

He Shou Wu is considered one of the most important and widely used Chinese herbal tonics. It is said to restore vitality and virility working especially on the liver and the reproductive, urinary and circulatory systems. Some care should be exercised, however, since excessive doses can cause skin rash and numbness of the extremities. The roots and stems are antibacterial, anticholesterolemic, antispasmodic, astringent, cardiotonic, demulcent, depurative, hypoglycaemic, laxative, sedative, tonic, treatment of menstrual and menopausal complaints, constipation in the elderly, and swollen lymph glands. Externally, they are used to treat ringworm, bleeding wounds and sores. The leaves and roots tonify the liver and kidneys, fortify the blood, strengthen the muscles and prevent premature greying of the hair. The stem is deobstruent, sedative and for treatment of insomnia and neurasthenia. Extracts of the plant have shown antipyretic, antitumor, hypoglycaemic and sedative activity.

3. *Rehmannia glutinosa* (Gaertn.) DC. - Orobanchaceae

Other Name(S): Chinese Foxglove, Di Huang, Radix Rehmanniae, Sho-Jio, Shu Di Huang, To-Byun, Xian Dihuang.

Medicinal Uses:

Antiseptic, Cardiac, Diuretic, Febrifuge, Haemostatic, Hypoglycaemic, Tonic, Skin

Rehmannia is a plant called Di Huang in China. The roots are used to make medicine and is commonly found in herbal combinations used in Traditional Chinese Medicine and one of the 50 fundamental herbs, . The root is the main part used and it can be prepared in four different ways - charcoaled, prepared

(but no details of the preparation are given) when it is called Shu Di Huang and fresh or dried when it is called Sheng Di Huang. The roots are antibacterial, antiseptic, cardiac, diuretic, febrifuge, haemostatic, hypoglycaemic and tonic. They are used in the treatment of a wide range of ailments, including anaemia, cancer, bleeding, constipation, coughs, fever and premature ejaculation.

4. *Astragalus mongholicus* Bunge (syn. *Astragalus membranaceus*) - Fabaceae

Other Name(S): Astragali, Bei Qi, Buck Qi, Chinese Astragalus, Huang Qi, Milk Vetch, Radix Astragali

Medicinal Uses:

Adaptogen, Antibacterial, Cancer, Diuretic, Hepatic, Hypotensive, Cardiotonic, Diuretic, Febrifuge, Hypoglycaemic, Tonic, Pectoral, vasodilator

Huang Qi is commonly used in Chinese herbalism, where it is considered to be one of the 50 fundamental herbs . The root is a sweet tonic herb that stimulates the immune system and many organs of the body, whilst lowering blood pressure and blood sugar levels. It is particularly suited to young, physically active people, increasing stamina and endurance and improving resistance to the cold - indeed for younger people it is perhaps superior to ginseng in this respect . Huang Qi is used especially for treatment of the kidneys and also to avoid senility . The plant is often used together with other herbs such as *Atractylodes macrocephala* and *Ledebouriella seseloides* . The root contains bio-active constituents for adaptogen, antipyretic, diuretic, tonic, uterine stimulant, bactericidal, hypoglycaemic and hypotensive and vasodilator. Also for treatment of cancer, prolapse of the uterus or anus, abscesses and chronic ulcers, chronic nephritis with oedema and proteinuria. HIV Infections .

5. *Gynochthodes officinalis* (F.C.How) Razafim. & B.Bremer - Rubiaceae

Other Name(S): Ba Ji, Ba Ji Tian, Indian Mulberry, Morinda, Morinda Root, Morinda officinalis, Morindae Radix, Noni, Racine du Morinda, Radix Morindae Officinalis.

Medicinal Uses:

Cancer, Gallbladder Disorders, Bedwetting, Erectile Dysfunction (Ed) and Premature Ejaculation, Back Pain, Depression, Kidney Disorders, Diabetes, Arthritis And Irregular Periods.

Ba ji tian is a plant. The root of the plant is used to make medicine also stir-fried and eaten as food. Ba ji tian might help treat depression by increasing the effects of serotonin, a chemical found in the brain. It contains chemicals that might reduce inflammation and regulate levels of hormones or other chemicals in the body. It is also

use to treat cancer, gallbladder disorders, bedwetting, erectile dysfunction and premature ejaculation, back pain, depression, kidney disorders, diabetes, arthritis and irregular periods.

6. *Epimedium grandiflorum* C.Morren (Horny goat weed) – Berberidaceae

Other Name(S): Barrenwort, , Herba Epimedii, Japanese Epimedium, Xian Ling Pi, Yin Yang Huo.

Medicinal Uses:

Aphrodisiac and erectile dysfunction (ED), Anti-asthmatic/chronic bronchitis, Antirheumatic/arthritis, Hypoglycaemic/diabetic, Hypertension/vasodilator and Fatigue

Horny goat weed or herb used to make medicine, about 15 weed species are known as "yin yang huo" in Chinese medicine. It contains phytochemicals which might help increase blood flow and improve sexual function. It also contains phytoestrogens that might reduce bone loss in postmenopausal women. The aerial parts of the plant are prepared as tea, concoction, tonic, powder or eaten fresh as vegetable.

7. *Angelica sinensis* - (Oliv.)Diels. - Apiaceae

Other Name(S): Dang Gui - Dong Quai - Chinese Angelica

Medicinal Uses:

Alterative, Analgesic, Anticholesterolemic, Anti-inflammatory, Anti-sparasmodic, Deobstruent, Emollient, Hepatic, Laxative, Sedative, Vasodilator, Woman's Complaints

Dang Gui is a well-known Chinese herb that has been used in the treatment of female ailments for thousands of years. Its reputation is perhaps second only to ginseng (Panax ginseng) and it is particularly noted for its 'blood tonic' effects on women . The root has a sweet pungent aroma that is very distinctive and it is often used in cooking, which is the best way to take it as a blood tonic . One report says that the root contains vitamin B12 and can be used in the treatment of pernicious anaemia . The root is alterative, analgesic, anticholesterolemic, anti-inflammatory, antispasmodic, deobstruent, emmenagogue, emollient, hepatic, laxative, sedative and peripheral vasodilator. It is an ideal tonic for women with heavy menstruation who risk becoming anaemic and increase the contraction of the uterus. Also use to protects the liver, reduce hot flushes, antibacterial, to treat pulmonary hypertension, constipation (a laxative), trauma injuries, ulcers, rheumatism and malaria .

8. *Sorghum bicolor* (L.)Moench. - Poaceae

Other Name(S): *Andropogon sorghum*, Guinea Corn, Millet, *Sorghum vulgare*, Sorgo. Sudangrass, Common wild Sorghum, Grain sorghum.

Medicinal Uses:

Astringent, Demulcent, Diuretic, Haemostatic, HIV/AIDS, anaemia, obesity

Sorghum is a grain. It is commonly eaten as a cereal grain in Africa. The seed and leaves are also sometimes used to make medicine. Traditionally, people use sorghum for digestion problems, HIV/AIDS, obesity, diabetes, anaemia, diabetic and other conditions, but there is no good scientific evidence to support these uses. The decoction of the seed is demulcent and diuretic. It is used in the treatment of kidney and urinary complaints. The inflorescence is astringent and haemostatic.

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CAUTION:

plant medicinally.

Publication Related:

*Go , R., Abdallah, M.S., Looi, T.C., Mustafa, M., Choi, S.,Paik, J., and Muhammad Yahaya (2021). Emerging natural products from Polyherb of *Eucommia ulmoides*, *Polygonum multiflorum, Astragalus mongholicus* and *Angelica sinensis* formulation extracts. *Molecules* 26(xxx):xxx

Developers

1. **Prof. Dr. Rusea Go**

   Plant Taxonomy and Conservation (Ethnobotany, Traditional Medicine, Phytomedicine, Natural Drug Discovery, Phytochemistry)

2. **Dr. T.C. Looi**

   Nutritional Therapy Practitioner

COMPOUNDS FOUND IN BOTH SAMPLE 'A' AND 'B' HERBAL FORMULATIONS

SAMPLE 'A'

1. ***Astragalus membranaceus*** Bunge: Some uses of Astragalus are in kidney and urinary problems, digestion, liver problems, female 2 reproductive system problems, muscular, skin problems, cardiovascular and blood, immune and lymphatic system, nervous system, respiratory system, and for some specific disease. It helps protect the body against various types of stress such as physical and emotional stress. Astragalus root including anti-aging properties, and also helping to prevent bone loss. It contains Astragalosides (antioxidants), which support the integrity of the respiratory tract. In addition, the polysaccharides found in Astragalus are known for their immune supporting properties. Astragalus herb also supports deep immune function by promoting normal levels of specific immune cells and aids in their function. Astragalus appears especially effective when immune function is stressed by environmental or endogenous challenges. In TCM, huang qi [黄岐] is never administered as a mono drug, but forms part of mixtures depending on the indications.

Flavonoids is the most common plant polyphenols are widely distributed in every species and possess a broad range of pharmacological activities. The genus Astragalus is the largest in the Fabaceae family with more than 2,500 species spread. They are known to contain different metabolites such as flavonoids, saponins, and polysaccharides. Plants from the genus have been used in the traditional medicine of many countries for centuries. This paper is focused on the large group of flavonoid compounds. The plants have been intensively analyzed, mainly for three main groups of biologically active compounds–polysaccharides, flavonoids, and saponins. There are other compounds possessing biological activity such as sesquiterpene-flavonolic complexes, sterols, lignans, coumarins, and phenolic acids. Three toxic groups of phytoconstituents–indolizidine alkaloids, aliphatic nitro compounds, and iron-selenium derivatives have been also discovered.

2. **American Ginseng (*Panax quinquefolium*** L.) is one of the most widely used herbal medicines and is reported to have a wide range of therapeutic and pharmacological applications. Ginsenosides, the major pharmacologically active ingredients of ginseng, appear to be responsible for most of the activities of ginseng including vasorelaxation, antioxidation, anti-inflammation and anti-cancer. Approximately 40 ginsenoside compounds have been identified.

Moreover, Ginseng is a perennial herb of the Araliaceae family, species in the genus Panax, and a highly valued medicinal plant in the Far East that has gained popularity in the West during the past decade [1,2]. The name ginseng comes from the Chinese words "Jen Sheng", meaning "man-herb", because of the humanoid shape of the root or rhizome of the plant, which is part of the plant most commonly consumed. The name Panax means "all healing," which describes the traditional belief that ginseng has properties to heal all aspects of the body. The most common ginsengs are Asian ginseng (Panax ginseng C. A. Meyer) and American ginseng

(*Panax quinquefolium* L.). Panax ginseng cultivated in China, Japan, Korea and Russia has been used as a medicinal plant in China for thousands of years.

Chemical structures and classifications Accumulating evidence suggests that ginsenosides, also called ginseng saponins, are the major pharmacologically active ingredients of ginseng. Constituents of ginseng plant have been shown to produce adaptogenic, restorative, vasodilatory, immunomodulatory, anti-inflammatory, antioxidant, antiaging, anticancer, antifatigue, antidiabetic, antistress, and antidepressive effects in animals and humans. The major active compounds in ginseng are triterpenoid glycosides, known also as the ginsenosides, contained in the roots, leaves, stems, flower buds, and berries. Ginsenosides are considered part of the defense mechanism in ginseng plants

3. Goji berry (***Lycium barbarum*** L.) has been used in traditional medicine in China and, in recent years, the large customer demand for goji berry-related food products resulted in producing these berries even in western countries, among which Italy. Recently, the production and sale of raw berries and goji berry-related food products (juices, jams, bakery products, energy bars) have increased rapidly since these berries have been described as super food . Moreover, goji berry bioactives are available on the market as nutraceuticals in the form of supplements and capsules. The popularity of these fruits is due to the supposed beneficial effects in the prevention of chronic diseases (cancer, atherosclerosis and diabetes), and promotion of weight loss and longevity. The *L. barbarum* berry consumption and/or supplementation may be useful for the prevention of chronic eye diseases and for the improvement of lipid profile and antioxidant status in patients with metabolic syndrome . As regards biologically active components of *L. barbarum* fruit, polysaccharides, phenols, and carotenoids are the most studied, together with the lipid composition of seed oils or essential oils from Lycium species. Some phenolic compounds (gallic, protocatechuic, vanillic, chlorogenic, coumaric, caffeic and ferulic acid and catechin and rutin), vitamin C and carotenoids were identified and quantified by HPLC.

4. *Swietenia macrophylla* King (Meliaceae): is an endangered and medicinally important plant indigenous to tropical and subtropical regions of the World. S. macrophylla has been widely used in folk medicine to treat various diseases. The review reveals that limonoids and its derivatives are the major constituents of S. macrophylla. The mahogany tree Swietenia macrophylla, also called “sky fruit” due to upward trend of its fruits towards the sky, is a beautiful, lofty, evergreen large tropical tree with a height of 30–40 m and girth of 3–4 m There are several data in the literature indicating a great variety of pharmacological activities of S. macrophylla, which exhibits antimicrobial, anti-inflammatory, antioxidant effects, antimutagenic, anticancer, antitumor and antidiabetic activities. Various other activities like anti-nociceptive, hypolipidemic, antidiarrhoeal, anti-infective, antiviral, antimalarial, acaricidal, antifeedant and heavy metal phytoremediation activity have also been reported.

Phytochemical investigations have shown that limonoids and their derivatives are the major constituents of S. macrophylla [23–25]. Limonoids are derived from tetracyclic triterpenes similar to euphol (H-20β) or tirucallol (H-20α) by a series of oxidative changes, interspersed with molecular rearrangements. Tetranortriterpenoids with a 4,4, 8-trimethyl-17-furanyl steroidal skeleton is an alternative name for limonoids because in the process of oxidative changes, the side chain is eventually oxidised to a β-substituted furan ring

5. *Epimedium grandiflorum* (White Longspur Barrenwort Bloom). Epimedium is a choice, semi-evergreen ground cover known for its graceful heart-shaped foliage and Columbine-like flowers (flowers arise before the leaves). It does well in dry conditions and deep shade, and is one of the hardiest perennials.

Many plants have been proven to possess efficacy on sexual dysfunction and osteoporosis in traditional Chinese medicine (TCM). The paper reviews the ethnopharmacology, the biological activities and the correlated chemical compounds of Epimedium species. More than 260 compounds have been isolated; among them prenyl-flavonoids are the major constituents and also important chemotaxonomic markers. Modern pharmacology studies and clinical practice demonstrated that Epimedium and its active compounds possess wide pharmacological actions, especially in strengthening yang, hormone regulation, anti-osteoporosis, immunological function modulation, anti-oxidation and anti-tumor, anti-aging, anti-atherosclerosis and anti-depressant activities.

Over 260 compounds, mainly the flavonoids, have been reported from different species of Epimedium. Other reported compounds from Epimedium are polysaccharides, lignans, sesquiterpenoids, alkaloids, and phenylalkanoids. Among the isolated compounds, prenylflavonoid glycosides are recognized as the major bioactive constituents of the Epimedium. Over fifty secondary metabolites have been reported from Epimedium grandiflorum. Chinese crude medicine, containing E. grandiflorum as a part of the composition, has been reported to possess anti-inflammatory and cardiovascular effects. In an effort to find potential bioactive candidates, thirty secondary metabolites of E. grandiflorum including two new prenylated flavonoid glycosides (1 and 2) were isolated and characterized.

SAMPLE 'B'

1. ***Eucommia ulmoides*** (EU) (also known as "Du Zhong" in Chinese language) is a plant containing various kinds of chemical constituents such as lignans, iridoids, phenolics, steroids, flavonoids, and other compounds. These constituents of EU possess various medicinal properties and have been used in Chinese Traditional Medicine (TCM) as a folk drink and functional food for several thousand years. EU has several pharmacological properties such as antioxidant, anti-inflammatory, antiallergic, antimicrobial, anticancer, antiaging, cardioprotective, and neuroprotective properties. Hence, it has been widely used solely or in combination with other compounds to treat cardiovascular and cerebrovascular diseases, sexual dysfunction, cancer, metabolic syndrome, and neurological diseases.

Chemical Composition of Eucommia ulmoides various compounds isolated from different parts of EU are shown in Table 1. 2.1. Lignans and Iridoids. Lignans and their derivatives are the key components of EU . To date, 28 lignans (such as bisepoxylignans, monoepoxylignans, neolignans, and sesquilignans) have been isolated from bark, leaves, and seeds of EU. Iridoid glycoside, a class of secondary metabolites, is the second main component of EU. Iridoids are typically found in plants known as glycosides.

2. *Polygonum multiflorum* is a traditional Chinese medicine with a long history in hair growth promotion and hair blackening. The purpose of the study was to examine the effect and the

mechanism of Polygonum multiflorum in hair blackening. C57BL/6 mice hair fade was induced with H2O2 and used in this research. Hair pigmentogenesis promotion activities of Polygonum Multiflorum Radix (PMR, raw crude drug), Polygonum Multiflorum Radix Preparata (PMRP, processed crude drug), and their major chemical constituent TSG were investigated.

Actually, several novel dianthrone glycosides from PM were elucidated by the conventional phytochemistry methods 4 years later, which confirmed the existence of dianthrone glycosides in PM. The phenolic constituents were rapidly screened in the roots of PM, and based on the fragment pattern rules of reference stilbenes and anthraquinone derivatives, 59 constituents were characterized or tentatively identified, of which 22 constituents were the first to be reported in PM and 12 compounds were characterized as potential new compounds.

3. ***Astragali Radix***: (*Astragalus propinquus*) has been reported to exert hepatoprotective effects, antioxidative effects, antiviral activity, anti-oxidative effects, antihypertensive effects, and immunostimulant properties; it has also been reported to strengthen superficial resistance, drainage action and new tissue growth. The compounds possessing biological activity such as sesquiterpene-flavonolic complexes, sterols, lignans, coumarins, and phenolic acids. Three toxic groups of phytoconstituents– indolizidine alkaloids, aliphatic nitro compounds, and iron-selenium derivatives have been also discovered.

4. **As refer back to number 5 in sample A, above**.

5. ***Radix Angelica Sinensis*****, the dried root of** ***Angelica sinensis*** (Danggui), is a herb used in Chinese medicine to enrich blood, promote blood circulation and modulate the immune system. It is also used to treat chronic constipation of the elderly and debilitated as well as menstrual disorders. Research has demonstrated that Danggui and its active ingredients, as anti-arthrosclerotic, anti-hypertensive, antioxidant anti-inflammatory agents which would limit platelet aggregation, are effective in reducing the size of cerebral infarction and improving neurological deficit scores. Danggui, the dried root of Angelica Sinensis (Radix Angelica Sinensis), is a commonly used Chinese medicinal herb to enrich blood, promote blood circulation and treat blood deficiency pattern and menstrual disorders such as dysmenorrhea and irregular menstrual cycle reported that Danggui (10^5 μg/ml) plays an immunostimulatory role in mitogen-stimulated murine lymphocytes in vitro. Angelan, a purified polysaccharide component of *Angelica nakai* thought to improve immune function, increases the expression of cytokines in splenocytes as Angelan enhances and the production of interleukin-6 (IL-6) and interferon-g (IFN-g) of activated macrophages, helper T cells and natural killer cells. The chemical constituents of the Danggui extract are classified into essential oil and water soluble parts including lipid compounds, phenolic compounds, carbohydrates, organic acids and other constituents. The most active ingredients are polysaccharides, Z-Ligustilide (3-butylidene-4,5-dihydrophthalide) and ferulic acid (4- hydroxy-3-methoxycinnamicacid).

6. Sweeteners and attempts to replace the most common sweetener used in chocolate, namely sucrose, continue to increase in recent times. One sucrose alternative that has not been fully explored in chocolate is palm sap based sugar. The results showed that chocolates formulated with palm sap-based sugar were lighter in colour and harder than the reference chocolate made with sucrose, which could be attributed to a lower particle density and a higher moisture of palm sap-based sugar than that of sucrose.

Analysis of the major volatile compounds recorded the presence of 2, 3-dihydro-3,5-dihydroxy-6-methyl-4(H)-pyran-4-one (DDMP) and high concentration of pyrazine-based compounds in the palm sap-based sugar sweetened chocolates. The former compound (DDMP) was, however, absent in the sucrose-sweetened dark chocolate. The physicochemical properties of the sugars also had a significant effect. The second cluster (Choc CCS 1, Choc CCS2 and Choc CPS2) contained a high aroma volatile concentration, namely 2-ethyl-6-methylpyrazine, acetic acid, 2-acetylpyrrole, 2,6-dimethylpyrazine, 2,3,5-trimethylpyrazine, ethylpyrazine which were characterised by high positive value.

7. **Sorghum:** belongs to the Andropogoneae tribe and Poaceae family and is a known C4 crop (i.e., it uses the C4 carbon fixation pathway to increase its photosynthetic efficiency), particularly adapted to hot, drought-prone and semi-arid tropical environments with less rainfall.

Sorghum contains both some of the essential and non-essential amino acids, including alanine (7.34–9.62 g/100 g), aspartic acid (4.83–7.06 g/100 g), glutamic acid (17.5–28.12 g/100 g), leucine (12.02–14.48 g/100 g), phenyalanine (4.03–5.62 g/100 g), proline (6.66–12.34 g/100 g) and valine (4.22–6.86 g/100 g) (Table 2), but limited in lysine and tryptophan. It does, however, have beneficial bioactive peptides and protein fractions, including 2-kDa antiviral peptide, α-kafirin, karifin, protease, amylase and xylanase inhibitors, as well as cationic peroxidase, which exerts anticancer, antiviral, antioxidant, cholesterol-lowering and antihypertensive effects

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Treasure Cell Life Sp-A® Wellness Spray

Treasure Cell Life Sp-A® (TCL Sp-A®) is a polyherbal concoction formulated from 6 known traditional medicine herbs used in Chinese pharmacopeia for centuries and known to have numerous soothing and healing chattels. Apart from the identified compounds of the individual herbs, TCL Sp-A® contains 16 newly profiled compounds, herewith labelled as "Sp-A Factor" the potent component of **Treasure Cell Life Sp-A®** wellness spray.

***Astragalus mongholicus* Bunge** (syn. *Astragalus membranaceus*)- **Fabaceae** is a herb used to reducing side effects of chemotherapy (nausea, vomiting, diarrhoea, and bone marrow suppression, diabetes to control blood sugar and insulin levels in people with type 2, immuno-stimulant, anti-perspirant, antidiarrheal, tonic properties, hay fever and kidney disease.

***Panax quinquefolius* L. Araliaceae** is an herb that grows mainly in North America. People take American ginseng by mouth for **stress**, to **boost the immune system**, and as a **stimulant**. American ginseng is also used for infections of the airways such as **colds** and **flu**, for **diabetes**, and many other conditions including tonic.

***Lycium chinense* Mill.** Solanaceae. The berries and root bark are used to make medicine for diabetes, high blood pressure, fever, and age-related eye problems, weight loss, a tonic, stimulate the immune system and protect organs from oxidative damage. The berries are brand a "superfood," eaten raw or used in herbal teas, juices, wines used in cooking.

***Swietenia mahagoni* (L.) Jacq.** – **Meliaceae** is a popular **medicinal** plant in India and some African countries, dates back to ancient times for its curative **properties** in diseases like malaria, diabetes, and diarrhoea. It is also used as an anti-pyretic, bitter tonic and astringent. anti-diabetic activities comparable to the synthetic drug.

***Epimedium grandiflorum* C.Morren** (Horny goat weed) – **Berberidaceae** is a herb from the 15 weed species known as "*yin yang huo*" in Chinese medicine. It contains phytochemicals which might help increase blood flow and improve sexual function. It also contains phytoestrogens that might reduce bone loss in postmenopausal women. Medicinal uses including aphrodisiac and erectile dysfunction (ED), anti-asthmatic/ chronic bronchitis, Antirheumatic/arthritis, hypoglycaemic/diabetic, hypertension/vasodilator and fatigue.

***Sorghum bicolor* (L.)Moench. – Poaceae** is a grain. It is commonly eaten as a cereal grain in Africa. The seed and leaves are also sometimes used to make medicine. Traditionally, people use sorghum for digestion problems, HIV/AIDS, obesity, diabetes, anaemia, diabetic and other conditions, but there is no good scientific evidence to support these uses. The decoction of the seed is demulcent and diuretic. It is used in the treatment of kidney and urinary complaints. The inflorescence is astringent and haemostatic.

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Eucommia ulmoides* Oliv. - *Eucommiaceae stem bark is analgesic, anticholesterolemic, aphrodisiac, depurative, diuretic, hepatic, hypotensive, sedative, tonic and vasodilator. It is use to lower blood pressure and reduces the absorption of cholesterol. It is also used in the treatment of impotence, frequent urination, lumbago, weakness of the lower part of the body, aching back and knees and threatened abortion. The flowers and the fruit are astringent.

***Polygonum multiflorum* Gueldenst. – Polygonaceae** is considered one of the most important and widely used Chinese herbal tonics. The roots and stems are antibacterial, anticholesterolemic, antispasmodic, astringent, cardiotonic, demulcent, depurative, hypoglycaemic, laxative, sedative, tonic, treatment of menstrual and menopausal complaints, constipation in the elderly, and swollen lymph glands. The leaves and roots tonify the liver and kidneys, fortify the blood, strengthen the muscles and prevent premature greying of the hair.

***Rehmannia glutinosa* (Gaertn.) DC. – Orobanchaceae is** one of the 50 fundamental herbs in Traditional Chinese Medicine The roots are antibacterial, antiseptic, cardiac, diuretic, febrifuge, haemostatic, hypoglycaemic and tonic. They are also used in the treatment of anaemia, cancer, constipation, coughs, fever and premature ejaculation. The root is the main part used and it can be prepared in four different ways - charcoaled, prepared into *Shu Di Huang*, fresh or dried into *Sheng Di Huang*.

***Astragalus mongholicus* Bunge – Fabaceae** is a herb used to reduce side effects of chemotherapy, immuno-stimulant, anti-perspirant, antidiarrheal, tonic, hay fever and kidney disease. The root contains bio-active constituents for adaptogen, antipyretic, diuretic, uterine stimulant, bactericidal, hypoglycaemic and hypotensive and vasodilator. Also for treatment of cancer, prolapse of the uterus or anus, abscesses and chronic ulcers, chronic nephritis with oedema and proteinuria. HIV Infections.

***Gynochthodes officinalis* (F.C.How) Razafim. & B.Bremer – Rubiaceae** root is used to make medicine also stir-fried and eaten as food. Ba ji tian might help treat depression by increasing the effects of serotonin, a chemical found in the brain. It is also use to treat cancer, gallbladder disorders, bedwetting, erectile dysfunction and premature ejaculation, back pain, depression, kidney disorders, diabetes, arthritis and irregular periods.

***Epimedium grandiflorum* C. Morren – Berberidaceae** is a herb from the 15 weed species known as "*yin yang huo*" in Chinese medicine. It has phytochemicals that help increase blood flow, improve sexual function. It also contains phytoestrogens that might reduce bone loss in postmenopausal women. It is taken as aphrodisiac and erectile dysfunction (ED), anti-asthmatic/chronic bronchitis, antirheumatic/arthritis, hypoglycaemic/diabetic, hypertension/vasodilator and fatigue.

***Angelica sinensis* - (Oliv.) Diels. – Apiaceae or** Dang Gui is a well-known Chinese herb that has been used in the treatment of female ailments for thousands of years. The root is alterative, analgesic, anticholesterolemic, anti-inflammatory, antispasmodic, deobstruent, emmenagogue, emollient, hepatic, laxative, sedative and peripheral vasodilator. Also use to protects the liver, reduce hot flushes, antibacterial, pulmonary hypertension, constipation, trauma injuries, ulcers, rheumatism and malaria.

***Sorghum bicolor* (L.)Moench. – Poaceae** is a grain eaten as cereal grain in Africa. The seed and leaves are also sometimes used to make medicine for digestion problems, HIV/AIDS, obesity, diabetes, anaemia, diabetic and other conditions. The decoction of the seed is demulcent and diuretic, used in the treatment of kidney and urinary complaints. The inflorescence is astringent and haemostatic.

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