

PHYTOR

Consulting in Human Health, Toxicology & Regulatory Affairs

Phytor Ltd.

Consultant: Dr. Yehoshua Maor (Ph.D, M.Sc.,B.Pharm.)

JBP Building – Ein Kerem Campus

9112001 Jerusalem – ISRAEL

Phone: +972-2-6711-911

Fax: +972-153-2-6711-911

e-mail: phytor1@gmail.com

Jerusalem June 10, 2020

Summary for the Product *LIFEMEL*

LIFEMEL is a product from Zuf Globus. Lab clinically proven and recommended for cancer patients who suffer from anemia and low hemoglobin levels caused by chemotherapy and radiation therapy. Numerous testimonies from both patients and physicians show that when *LIFEMEL* is administered during chemotherapy and radiation therapy it enhances quality of life for the patients by diminishing the deleterious side effects caused by these therapies. In clinical trial conducted by Zidan et al it was reported that administration of *LIFEMEL* prevented neutropenia and reduced the need for Colony-Stimulating Factors (CSFs) which are used for primary and secondary treatment in patients with grade 4 neutropenia. The use of CSFs is expensive and accompanied by side effects. In this peer reviewed study 40% of the patients did not show recurrence of neutropenia after *LIFEMEL* intake and no need for treatment with CSFs. The intake of *LIFEMEL* clinically improved patients' quality of life.

The blend of herbs which comprise the bees' feed used in the production of *LIFEMEL* possess bioactive substances, such as iron, proteins, enzymes and vitamins, highly needed for regular functioning of the immune system. The active ingredients, once absorbed in the blood, stimulate the production of blood cells by increasing the number of thrombocytes and enhancing the activity of hemoglobin.

These biological activities are recorded on the WHO monographs and are corroborated by peer-reviewed scientific publications.

The main biological activities of *LIFEMEL* related to its herbal components is listed below:

1) *Uncaria tomentosa*

Uncaria tomentosa has been used for centuries in various medical conditions. There are some conditions reported to be improved by *Uncaria tomentosa*, including arthritis, viral infections and cancer (acting as a non-specific immunomodulation agent). In addition, this herb may also have potential as an immunomodulating adaptogen in cellular aging.

2) *Echinacea purpurea*

The immune-stimulation activity of *Echinacea purpurea* has been widely described in the scientific literature.

Oral administration has been reported as a supportive therapy for colds and infections of the respiratory and urinary tract. These beneficial effects are generally thought to be brought about by stimulation of the immune response mainly by activation of phagocytosis and stimulation of fibroblasts.

3) *Beta vulgaris*

Beta Vulgaris displays potent antioxidant, anti-inflammatory and chemo-preventive activity *in vitro* and *in vivo*. In addition, as a source of nitrate, it can be beneficial in increasing nitric oxide (NO) availability in pathologies such as hypertension.

4) *Eleutherococcus senticosus*

Eleutherococcus senticosus, also called Siberian ginseng, was reported to have adaptogenic/ anti-stress activity and may boost mental performance. In addition, it has been shown to stimulate the immune system. *Eleutherococcus senticosus* also shows anti-microbial activity.

The major constituents of this herb are triterpene saponins (2–10%) based on oleanolic acid (i.e. calendulosides) and flavonoids (3-O-glycosides of isorhamnetin and quercetin).

Polysaccharides isolated from *Calendula* were reported to enhance phagocytosis by human granulocytes, thus supporting the immune system.

6) *Trifolium pratense*

The major active chemicals found in *Trifolium pratense* are isoflavones, mainly Genistein and its metabolites Equol, Isoequol and Dehydroequol. These compounds have strong anti-inflammatory as well as estrogenic effects. Different concentrations of isoflavones present in this herb are also associated with a significant increase of thyroid hormones levels in plasma.

7) *Urtica dioica*

Scopoletin, sitosterol with its 3-O-βD-glucoside and caffeic acid esters represent the characteristic components found in *Urtica dioica*, as well as Carotenoids.

The well documented biological activities of these compounds include anti-inflammatory and Immuno-modulatory actions. In addition, there are reports for hypoglycaemic effects and balancing the blood sugar levels.

8) *Melissa officinalis*

The major groups of compounds found in this herb are hydroxycinnamic acids, terpenoids, flavonoids and tannins. Isolated tannins have been shown to have potent anti-viral activity against a various range of viruses.

In addition, some scientific reports support the use of these compounds for treating gastric and digestive discomfort.

The major characteristic and biologically active constituents are flavonoids and anthocyanins. These substances are well known for the symptomatic treatment of dysmenorrhoea associated with premenstrual syndrome due to their anti-inflammatory effect. In addition, these active ingredients may protect against capillary fragility, thus can support the general health of the eyes and may even protect against retinopathy.

10) *Taraxacum officinale*

The main bioactive components are sesquiterpenes and phytosterols, mainly Lupeol, Taraxasterol, β -sitosterol and Betulin, which provide this herb with anti-inflammatory and anti-nociceptive activities. In addition, recent scientific evidence indicate the potential of these active compounds to protect the liver and bile from toxicity.

11) *Ficus carica*

F. carica contains many phenolic compounds, flavonoids and anthocyanins which provide potent antioxidant capacity. In addition, β -sitosterols isolated from the fruits showed inhibitory effect on the growth of various cancer cell lines. There are reports indicating possible protectivity against liver damage, as well as possible hypoglycemic and hypolipidemic activity.

12) *Morus alba*

The main constituents of the leaves of this tree are chalcones and flavonoids (e.g. astragalinalin, isoquercitrin, isoquercitrin), as well as phenolic acids. These compounds were found to inhibit the growth of certain types of cancer cells line. An anti-inflammatory effect was also reported. In addition, some report indicates the potential of these compounds to aid with lowering blood sugar and lipids levels and to protect the blood vessels (anti-atherosclerotic effects) and the liver (hepatoprotective activity).

13) *Chicorium intybus*

Aliphatic compounds and their derivatives comprise the main chemical groups found in this plant. While terpenoids comprise minor constituents. An anti-inflammatory effect has been reported as well as analgesic effect, mainly due to Lactucin, lactucopicrin, and 11 β , 13- dihydrolactucin. Magnolialide was shown to inhibit the growth of several tumor cell lines.

14) *Inula helenium*

The main active ingredients are sesquiterpene lactones, mainly alantolactone, isoalantolactone and alloalantolactone. These compounds exhibit anti-cancer effects against various types of human cancers cells lines, with potent anti-oxidant activity. In addition, there are report highlighting these compounds as potent anti-inflammatory agents (in several dermatology studies).

15) *Ribes nigrum*

This plant contains flavonoids, mainly isoquercitroside and rutin. kaempferol, quercetin, myricetin, isorhamnetin and sakuranetin are present as well. These are known for their anti-cancer and anti-inflammatory effect. In addition, some reports show prevention of lipid steatosis by these compounds.

16) *Avena sativa*

The major chemical groups of compounds in this plant are alkaloids, flavonoids (e.g. vitexin derivatives) and steroidal saponins (Avenacoside A and Avenacoside B). These are thought to exert the pharmacological activities of the plant such anti-cancer effect against various cancer cells, anti-inflammatory and anti-analgesic effects, as well cholesterol lowering effect. In addition, Anti-estrogenic effect was reported.

Bibliographic References in addition to the WHO monographs regarding the herbal substances in the formula.

Alexandre JT. et al. Anti-inflammatory and Antiresorptive Effects of Calendula Officinalis on Inflammatory Bone Loss in Rats. Clin Oral Investig. 2018.

Arevström L. et al. Freeze-dried Bilberry (Vaccinium Myrtillus) Dietary Supplement Improves Walking Distance and Lipids After Myocardial Infarction: An Open-Label Randomized Clinical Trial. Nutr Res. 2019.

Benjamim CJ. et al. Beetroot (Beta Vulgaris L.) Extract Acutely Improves Heart Rate Variability Recovery Following Strength Exercise: A Randomized, Double-Blind, Placebo-Controlled Crossover Trial-Pilot Study. J Am Coll Nutr. 2020.

Chan EWC., LYE PY. and Wong SK. Phytochemistry, pharmacology, and clinical trials of Morus alba. Chin J Nat Med. 2016.

Chen, H.; Yu, W.; Chen, G.; Meng, S.; Xiang, Z.; He, N. Antinociceptive and antibacterial properties of anthocyanins and flavonols from fruits of black and non-black Mulberries. Molecules 2017, 23, 4.

Choi BR. et al. Lemon Balm and Dandelion Leaf Extract Synergistically Alleviate Ethanol-Induced Hepatotoxicity by Enhancing Antioxidant and Anti-Inflammatory Activity. J Food Biochem. 2020.

Chun J., Song K. and Shik Kim Y. Sesquiterpene Lactones-Enriched Fraction of Inula Helenium L. Induces Apoptosis Through Inhibition of Signal Transducers and Activators of Transcription 3 Signaling Pathway in MDA-MB-231 Breast Cancer Cells. Phytother Res. 2018.

Diaz K. et al. Isolation and Identification of Compounds from Bioactive Extracts of *Taraxacum officinale* Weber ex F. H. Wigg. (Dandelion) as a Potential Source of Antibacterial Agents. *Evid Based Complement Alternat Med.* 2018.

Dong L. et al. *Taraxacum officinale* Wigg. Attenuates Inflammatory Responses in Murine Microglia through the Nrf2/HO-1 and NF- κ B Signaling Pathways. *Am J Chin Med.* 2020.

Esposito S. et al. Therapeutic Perspectives of Molecules From *Urtica dioica* Extracts for Cancer Treatment. *Molecules.* 2019.

Hou W. et al. Screening and Isolation of cyclooxygenase-2 Inhibitors From *Trifolium Pratense* L. Via Ultrafiltration, Enzyme-Immobilized Magnetic Beads, Semi-Preparative High-Performance Liquid Chromatography and High-Speed Counter-Current Chromatography. *J Sep Sci.* 2019.

Javid AZ. et al. The Effects of *Melissa Officinalis* (Lemon Balm) in Chronic Stable Angina on Serum Biomarkers of Oxidative Stress, Inflammation and Lipid Profile. *Asia Pac J Clin Nutr.* 2018.

Khattab HAH., Abounasef SK. and Bakheet HN. The Biological and Hematological Effects of *Echinacea purpurea* L. Roots Extract in the Immunocompromised Rats with Cyclosporine. *J Microsc Ultrastruct.* 2019.

Khazaei M. and Pazhouhi M. Antiproliferative Effect of *Trifolium Pratens* L. Extract in Human Breast Cancer Cells. *Nutr Cancer.* 2019.

Kim J. et al. *Vaccinium Myrtillus* Extract Prevents or Delays the Onset of Diabetes--Induced Blood-Retinal Barrier Breakdown. *Int J Food Sci Nutr.* 2015.

Kim M. et al. Inhibitory Effect of Oat Bran Ethanol Extract on Survival and Gemcitabine Resistance of Pancreatic Cancer Cells. *Molecules.* 2019.

PHYTOR Ltd.
JBP Building – Ein Kerem Campus
Jerusalem 9112001 Israel



TEL: + 972 2 6711911
FAX: +972 1532 6711911
phytor1@gmail.com

Koc K. et al. Antioxidant and Anticancer Activities of Extract of *Inula helenium* (L.) in Human U-87 MG Glioblastoma Cell Line. *J Cancer Res Ther.* 2018.

Mawa S., Husain K. and Jantan I. *Ficus Carica* L. (Moraceae): Phytochemistry, Traditional Uses and Biological Activities. *Evid Based Complement Alternat Med.* 2013.

Santos Araújo MDC. et al. *Uncaria tomentosa*-Adjuvant Treatment for Breast Cancer: Clinical Trial. *Evid Based Complement Alternat Med.* 2012.

Street R., Sidana J. and Prinsloo G. *Cichorium Intybus*: Traditional Uses, Phytochemistry, Pharmacology, and Toxicology. *Evid Based Complement Alternat Med.* 2013.

Tohda C. et al. Combined Treatment With Two Water Extracts of *Eleutherococcus senticosus* Leaf and Rhizome of *Drynaria fortunei* Enhances Cognitive Function: A Placebo-Controlled, Randomized, Double-Blind Study in Healthy Adults. *Nutrients.* 2020.

Tung YT. et al. Antifatigue Activity and Exercise Performance of Phenolic-Rich Extracts From *Calendula officinalis*, *Ribes nigrum*, and *Vaccinium myrtillus*. *Nutrients.* 2019.

Turrini E. et al. Overview of the Anticancer Profile of Avenanthramides From Oat. *Int J Mol Sci.* 2019.

Wang Q. et al. Total Sesquiterpene Lactones Isolated From *Inula Helenium* L. Attenuates 2,4-dinitrochlorobenzene-induced Atopic Dermatitis-Like Skin Lesions in Mice. *Phytomedicine.* 2018.

Wu W. et al. Avenanthramide Aglycones and Glucosides in Oat Bran: Chemical Profile, Levels in Commercial Oat Products, and Cytotoxicity to Human Colon Cancer Cells. *J Agric Food Chem.* 2018.

Yan YY. et al. Active Ingredients of *Inula Helenium L.* Exhibits Similar Anti-Cancer Effects as Isoalantolactone in Pancreatic Cancer Cells. *Nat Prod Res.* 2019.

Yokoyama SI. et al. Red Clover (*Trifolium Pratense L.*) Sprout Prevents Metabolic Syndrome. *J Nutr Sci Vitaminol (Tokyo).* 2020.

Yu D. et al. Anti-inflammatory Effects of Essential Oil in *Echinacea Purpurea L.* *Pak J Pharm Sci.* 2013.

Ziaei R. et al. The Effect of Nettle (*Urtica dioica*) Supplementation on the Glycemic Control of Patients with Type 2 Diabetes Mellitus: A Systematic Review and Meta-Analysis. *Phytother Res.* 2020.

Zidan J, et al. Prevention of Chemotherapy-Induced Neutropenia by Special Honey Intake. *Med Oncol* 23(4):549-52. 2006.