

HB21 PPMAC:

Synergistic Blend

The five herbs included in our formulation are Papaya leaves, Plu Kow leaves, Mangosteen rind, Amalaki fruit Cordyceps (fungus) and each of these ingredients functions in synergy with the others to produce an overall effect which can be dramatic.

Each of these herbs must conform to strict raw material specifications that include only the highest levels of targeted active compounds. Each herb is processed separately and then combined in the proper proportions.

When we address a biophysical challenge along different metabolic pathways that support one another we create synergy – a stronger effect than the sum of the parts. The biological mechanisms are simplified to make their most basic effects clear, but there are literally thousands of interacting agents at play in all cases.

The super- strong antioxidants provided by Mangosteen rind and Amalaki (Amla) fruit protect the apoptotic cells from attack by free radicals. The high level of digestive enzymes in the papaya leaves digest the fibrous protein coating that protects cancer cells from recognition and attack by your immune system.

Cordyceps provides polysaccharides that activate and potentiate your immune system, and cordycepin employs DNA fragmentation to prevent the cancer cells from replicating.

Potentiated Plu Kow is widely used in Asia but virtually unknown to the West and, like Cordyceps, demonstrates a variety of cancer fighting capabilities that include DNA fragmentation, strong antiviral active compounds, and immune system activation and support.

FORMULATION:

**Each 400 mg. capsule
contains:**

- 30% Papaya leaf
- 10% Potentiated
- Plu Kow 20%
- Mangosteen rind
- 20% Amalaki fruit
- 20% Cordyceps



CELLULAR FRACTION-LINE TECHNOLOGY (CFL):

The efficacy of these ingredients is largely due to our evolutionary and transitional Cellular Fraction-Line Technology which preserves these super herbs in their fresh form, maintaining the medicinal bioactivity of the live plants while providing the safety of a stable (preserved) commodity.

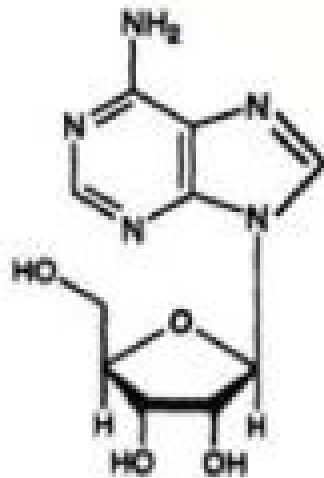
CFL is unique in that the plant tissue fractures between/along the layers of the cell walls preserving cellular integrity and improving the retention of the bioactive intracellular contents. In addition to higher bioactivity this process results in particles having a more bioavailable particle structure. Higher bioactivity combined with higher bioavailability make all of our CFL bioactivate botanicals significantly more effective. This is particularly important in the case of complex formulations such as PPMAC that depend on the synergy of the various ingredients.

The chemical analysis and measurement of specific targeted compounds is a valid analytical tool, but does not fully explain the body's adaptive systems.

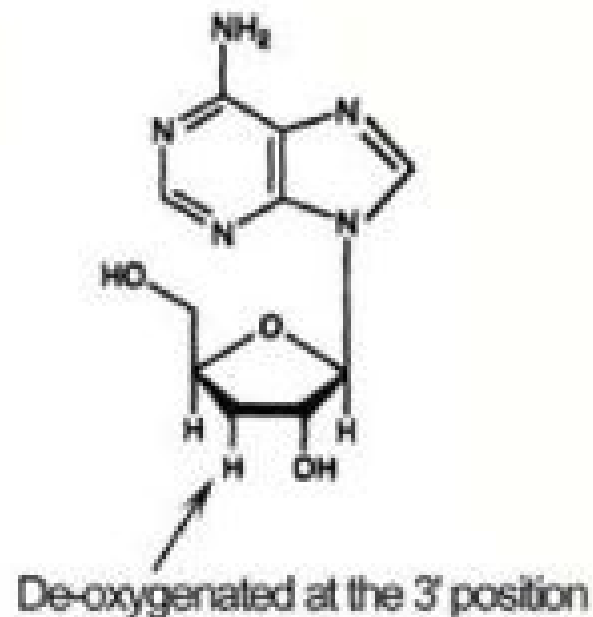
Cellular Fraction-Line Technology (CFL) takes you beyond the chemistry per se. CFL involves a holistic approach that includes subtle mechanisms of nature operating with intelligence through patterns of association and encoded information.

DNA FRAGMENTATION

Normal Adenosine



Cordycepin



The metabolic pathway or biological mechanism in this case does not aim at destroying the target pathogen, but rather inhibiting its replication process while not harming its host.

CELL APOPTOSIS VIA DNA FRAGMENTATION:

Cordycepin is an adenosine derivative differing from adenosine only by the absence of one oxygen atom which has a very specific and dramatic effect due to its location.

The absence of this oxygen atom at this specific location prevents the formation of a bond between adjacent nucleosides which forms the “ladder structure” that holds the DNA together.

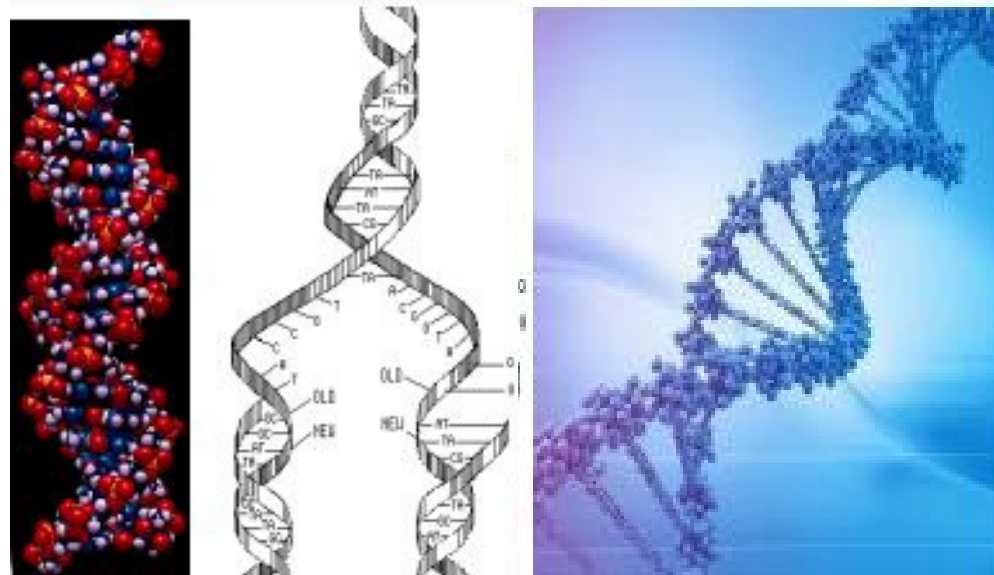
This bond is between the 3' and 5' positions on the ribose portions of the adjacent nucleosides and when they do not bond, the DNA fragments and can't replicate.

Healthy cells have an inherent DNA repair mechanism which removes the oxygen deficient atom from the nucleoside string and replaces it with a new segment of adenosine. However, cancer cells have lost this DNA repair mechanism. So while the tumor cells experience DNA fragmentation halting DNA replication, cordycepin does not interfere with healthy cell replication.

(note: all viruses including HIV and many bacteria also lack this repair mechanism and this may explain the anti-viral/antibacterial effects of cordyceps).

Cancer cells replicate very much faster than surrounding healthy cells, but cordycepin interferes with only cancer cell replication at a tumor-cell kill rate that is even higher than the increased velocity of untreated cancer cell proliferation. Some chemotherapy agents employ the same DNA replication interruption mechanism to achieve their anti-tumor effects.

These models show how atoms of sugars, phosphates, and nitrogenous bases fit together to make the double helix structure of DNA.



A missing oxygen atom in the structure of cordycepin prevents the formation of a bond in the double helix or “ladder structure” and thereby fragments the DNA preventing cell replication. Studies published in the “American Journal of Chinese Medicine” reported that Plu Kow reduced viral RNA synthesis and virus induced caspase 3 activity.

This study indicated that Plu Kow affected apoptotic processes in EV71 by inhibiting viral replication. (Vol 37, Issue 1, 2009 by Lin et.al.) Essential oils found in Plu Kow have been found to effectively terminate the DNA chain during DNA replication.

IMMUNE SYSTEM ACTIVATION AND MODULATION

The human body can read the “markers” that determine if a substance within the body is natural to the body or a foreign substance. When the body perceives foreign markers it interprets this as a threat and takes action to rid the body of this substance. Cordyceps and Plu Kow are both noted for their immune system activation due to their high levels of polysaccharides.

Polysaccharides most notably beta-d-glucans are recognized by our bodies as foreign molecules and this recognition activates your immune system. They set off an alarm that jerks your immune system to attention. Polysaccharides stimulate and potentiate the immune system and work to modulate the synthesis of your endogenous antioxidant enzymes such as superoxide dismutase and glutathione.

In Asia the understanding of Cordyceps' and Plu Kow's efficacy as immune system activators and modulators has resulted in a very high percentage of cancer patients using them while undergoing conventional treatments. Conventional doctors use these immunomodulatory herbs to activate and boost the immune system to allow stronger and more frequent chemotherapy. Plu Kow's immune system support is one of its most well researched and most notable qualities.

A research team from the Medical Science Department, Ministry of Health (Thailand) studied the effects of Plu Kow on the immune system and found that it sets up an alarm that alerts dividing white blood cells to the presence of a foreign body.

This study also investigated the effects of Plu Kow leaf used as an ingredient in herbal remedies and concluded that it helps dividing white blood cells in normal healthy people as well.

IMMUNE SYSTEM SUPPORT

Prevention and treatment of any serious illness requires that we boost our immune system and, in the case of cancer, boost our ability to kill infected cancer cells. We must strengthen our defenses by inducing synthesis of NK cells, T Cells, B Cells, CD8, CD 4 which provide cytotoxicity against tumor cell lines.

Immune system support, as it relates to the herbs in our formulation, could easily take a book. All the herbs strengthen the immune system. However Plu Kow stands out as one of the most effective immunomodulatory herbs known.

A research study indicates that a polymer of the essential oils in Plu Kow (houttuynia) combines with sodium bisulfite to create the compound, Houttuynia sodium bisulphite (HSB) which helps to induce antibody synthesis and also helps to enhance the functions of macrophage white blood cells, increasing their capacity to find and destroy impurities by increasing the synthesis of lysosomal.

Lysosomal is an enzyme that digests engulfed viruses and bacteria to induce apoptosis. Plu Kow also increases the creation of IL-1B and IL-2 lymphocytes. Alkaloids extracted from Plu Kow have been shown to destroy five kinds of human cancer cells: colon cancer, malignant melanoma, ovarian cancer and lung cancer.

One of Plu Kow's alkaloids, spendidin demonstrates the ability to destroy cancer cell lines ED50. Aristolactam B, another alkaloid extracted from Plu Kow demonstrates effects on XF-498 .

Compounds including Plu Kow leaf juice fed to five leukemic cell lines stopped the growth of all five.

In China, powdered compounds including Plu Kow leaves are used to treat cancers in the alimentary canal, respiratory canal, breast, womb, stomach, rectum and lungs.

Plu Kow is also used for healing the side effects caused by radiation and chemical cancer therapies. Plu Kow provides strong immune support by stimulating lymphocyte synthesis including:

- NK (Natural Killer) white blood cells which scan the body for abnormal cells, destroying them before they can develop and multiply. NK cells regulate the immune system through cytokine secretions that drive the antitumor cellular immune response.

- T Cells locate and identify antigen markers on invading cells and inject a poison to kill them.

● B-cells produce and secrete specific plasma cells that produce antibodies.

● CD8 is a trans-membrane glycol protein that forms a powerful branch of the adaptive immune system by eradicating intracellular infections and helps to control a wide spectrum of chronic infections as well as eradication of tumors. In the final stage of fighting infections, CD8 develops cellular memory. Memory CD8 cells provide protective immunity against both acute and chronic viral infections.

● CD4 is a glycoprotein found on the surface of immune cells that send signals to other immune cells (including CD8) to destroy an infection. If CD4 cells are depleted (such as in the case of untreated HIV) the body is left vulnerable to infections it would otherwise be able to fight.

● **Ig G:** Immunoglobulin G is the most abundant antibody isotope found in the blood and extracellular fluids, controlling infection of body tissues by a variety of immune mechanisms that include:

- Immobilization and binding together of pathogens
- Recognition and ingestion by immune cells
- Activation of immune protein production resulting in pathogen elimination
- Binding and neutralizing toxins.

● **IgM:** Immunoglobulin M is a basic antibody produced by B Cells and found in the blood and lymphatic fluids. This is the largest antibody in the human circulatory system

● **IL B1:** Interleukin B1 cells are lymphocytes essential to the development of autoimmunity. IL B1 mediates host resistance against multi-cellular, extracellular pathogens.

● **IL 2:** Interleukin 2 cytokine signaling molecules regulate the activity of white blood cells responsible for immunity against microbial infections.

In Japan fermented liquid Plu Kow (known as Dokudami) is regarded as a “cure all”. The Japanese Medicines Codex approves Dokudami as a diuretic making it one of the very few medicinal plants that have earned a place in the Japanese Medicine Codex.

Plu Kow was one of the eight compounds selected to treat SARS in China.

Cordyceps : The bi-directional regulation of immune function is known as immunomodulation. When Cordyceps is taken by a patient in an immune-deficient state (cancer, HIV) white blood cells increase in quantity and activity. When the same Cordyceps is given to someone in a hyper-immune condition (Lupus, Rheumatoid arthritis) the quantity and activity of white blood cells decrease while red blood cells increase. This bi-directional effect is typical of adaptogens and is not experienced in allopathic medicine. The adaptogenic mechanism lies in the differentiation phase of blood cell production in the bone marrow, where immature cells are directed to various organs to mature. Signals from the body affect an appropriate response to attain homeostasis

FREE RADICAL SCAVENGING

The super strong antioxidants provided by Mangosteen rind, Amalaki fruit and Plu Kow leaves protect the apoptotic cells from attack by free radicals.

1. Amalaki, processed by CFL, displays super high levels of Vitamin C and antioxidants. Lab test results for ORAC from a highly reputable European lab are attached.
2. Mangosteen (rind) is also extremely high (“off the charts”) in antioxidant compounds prevalent in the dark flavonoid pigments in its pericarp and is proven to interrupt the inflammation cycle. Lab tests from Central Labs for ORAC values are attached.
3. Polyphenols found in Plu Kow provide strong antioxidant activity which plays a crucial role in immune system support by inhibiting lipid peroxidation.

FREE RADICAL SCAVENGING

Antioxidant activity plays a critical role in fighting cancer. Antioxidants inhibit lipid peroxidation (oxidative damage to fats and fat-soluble vitamins such as A, D, E and K).

Apoptotic genes experience oxidative damage by free radicals.

Scavenging free radicals protects apoptotic genes thereby promoting the death of cancer cells.

This is the biological mechanism by which antioxidants combine to increase the effectiveness of the other bioactive ingredients in our formulation.

PAPAYA LEAVES' DIGESTIVE ENZYMES

Digestion of the fibrous protein coating that protects cancer cells from recognition and attack by your immune system makes a strong contribution to our formulation.

Papaya leaves have been used as traditional medication for centuries. In Australia in the 1970's the traditional aboriginal use of papaya leaves became a popular remedy for prevention and reversal of active cancer and tumors based on a large volume of anecdotal evidence.

Due to lack of scientific validation the trend died down. In 2010, the international media publicized the findings of a University of Florida study which showed that an extract of freeze dried papaya leaves can reverse cell growth in ten common varieties of human cancer

Evidence suggests that the direct anti-tumor effects of papaya leaves are due to their highly concentrated digestive enzymes which digest the fibrous protein coating that protects cancer cells from recognition and attack by our immune system.

This is in addition to the effects of boosting the immune system. Scientific studies conducted at the University of Florida in 2010, made headlines world-wide when researches demonstrated that papaya leaves reversed the growth of ten strains of active human cancers.

UF RESEARCHERS FIND CANCER-FIGHTING PROPERTIES IN PAPAYA TEA

Published: March 9 2010

Category:Health,
Research GAINESVILLE, FL.

The humble papaya is gaining credibility in Western medicine for anticancer powers that folk cultures have recognized for generations.

University of Florida researcher Dr. Nam Dang, and colleagues in Japan have documented papaya's dramatic anticancer effect against a broad range of lab-grown tumors, including cancers of the cervix, breast, liver, lung and pancreas....

In a paper published in the Feb. 17 issue of the Journal of Ethnopharmacology, Dr. Nam Dang and his colleagues also documented for the first time that papaya leaf extract boosts the production of key signaling molecules called Th1-type cytokines.

This regulation of the immune system, in addition to papaya's direct antitumor effect on various cancers, suggests possible therapeutic strategies that use the immune system to fight cancers.

The papaya extract did not have any toxic effects on normal cells, avoiding a common and devastating consequence of many cancer therapy regimens. The success of the papaya extract in acting on cancer without toxicity is consistent with reports from indigenous populations in Australia and his native Vietnam, said Dang, a professor of medicine and medical director of the UF Shands Cancer Center Clinical Trials Office.

“Based on what I have seen and heard in a clinical setting, nobody who takes this extract experiences demonstrable toxicity; it seems like you could take it for a long time — as long as it is effective,” he said. Researchers exposed 10 different types of cancer cell cultures to four strengths of papaya leaf extract and measured the effect after 24 hours. Papaya slowed the growth of tumors in all the cultures.

To identify the mechanism by which papaya checked the growth of the cultures, the team focused on a cell line for T lymphoma.

Their results suggested that at least one of the mechanisms employed by the papaya extract is inducing cell death. In a similar analysis, the team also looked at the effect of papaya extract on the production of antitumor molecules known as cytokines.

Papaya was shown to promote the production of Th1-type cytokines, important in the regulation of the immune system.

For that reason, the study findings raise the possibility of future use of papaya extract components in immune-related conditions such as inflammation, autoimmune disease and some cancers.

ADJUNCTIVE THERAPY

Cordyceps and Plu Kow have been used extensively in Asia for cancer treatments as adjunctive therapies alongside radiation and chemotherapy.

They have been shown to increase stamina, reduce the damage done by conventional therapies and assist in faster recovery. When the body is generally strong and vital and the immune system is well tuned we are less subject to the negative effects of radiation and chemotherapy.

In fact the health care professionals that advocate the use of herbs and botanicals as adjunctive therapies argue that these herbs allow your immune system to recover faster and by doing so allow the body to handle stronger and more frequent conventional chemo-treatments than would be possible without them.

ADJUNCTIVE THERAPY

The knowledge of Cordyceps' and Plu Kow's efficacy against cancer is so widespread in the Orient that the vast majority of cancer patients in Japan, Korea and China are already taking Cordyceps (or some other mushroom and/or fungus derived immune modulator) and/or Plu Kow while undergoing conventional treatment.

Because of this widespread usage, it is a well-known fact that Cordyceps, Plu Kow and other polysaccharide immunomodulators (such as PSK, PSP, Lentinan, AHCC and arabinoxylans [MGN3™]) will reduce the severity and duration of side effects associated with Chemo and Radiation therapies.

The most limiting factor in the effectiveness of chemotherapy treatment for cancer is the toxic destruction of the patient's immune system . More patients die of opportunistic infections during chemotherapy than ever die of the cancer itself. (“The operation was successful, but the patient died.”) The hope is that the chemo will kill the tumor cells before killing too many of the healthy cells.

The white blood cell count of the cancer patient is carefully monitored during chemotherapy and the dosage and schedule of treatments is adjusted to maintain an adequate immune system. If we can, through the use of Cordyceps and Plu Kow, strengthen the immune system, the dosage and frequency of chemotherapy can be increased.

The effectiveness of the conventional treatment can be enhanced, the damage can be decreased and recovery can be accelerated. Throughout Asia, many conservative medical practitioners seem receptive to using these herbs as an adjunctive therapy alongside their conventional treatments.

RECOMMENDED DOSAGE:

Prevent human suffering and embrace nature's preventative powders which are inexpensive and in abundant supply right at this moment. To create layers of herbal defense for aggregate protection through daily use one to two capsules daily is recommended. If cancer already exists, great results have been achieved with 4-6 capsules daily.

DISCLAIMER

This brief is solely intended as a source of information and does not prescribe or advise the use of any substance mentioned herein. The authors do not intend to diagnose, cure, treat, or prevent any disease. The Food and Drug Administration of Thailand has not evaluated any statements made herein. Consult with your doctor about all prescription and non-prescription medicines you take before you begin to use any herbal products and partner with your professional health care practitioner on determining your own health destiny. If you are pregnant, considering pregnancy or are a nursing mother you should consult your physician prior to using any health supplement product.