

NutraCultureTM

the culture for healthy living

PHYCOCYANINTM

A Molecule extracted from *Spirulina platensis*

A PRODUCT OF HASH BIOTECH LABS PRIVATE LIMITED

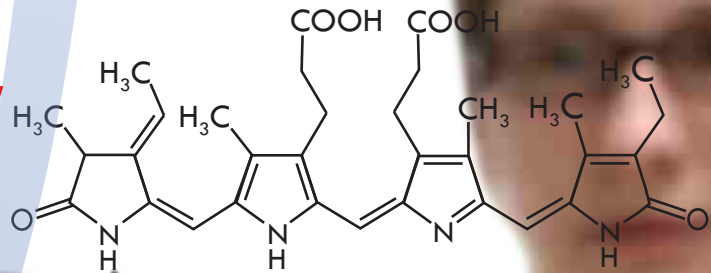


Hash BioTech Labs



- Cancer suspected subjects
- Newly diagnosed cancer patients
- Patients already undergoing cancer treatment

A Natural
Hepatoprotective
Neuroprotective
Anti-Inflammatory
Anti-Cancer
Molecule



Introducing first time ever in the world,
PHYCOCYANIN, a revolutionary wonder
molecule for cancer care and support!

Biotech
INNOVATION

Dietary
SUPPLEMENT

ATTRIBUTES OF PHYCOCYANIN

ANTI-CANCER

- ☑ Inhibits Tumor Cell Proliferation
- ☑ Induces Tumor Cell Differentiation
- ☑ Induces Apoptosis
- ☑ Inhibits Tumor Invasion
- ☑ Antimetastatic

CANCER PREVENTION

- ☑ Activates Anti-Inflammatory Modulators
- ☑ Anti-Oxidant Capacity
- ☑ Induces Phase-II Enzymes
- ☑ Inactivates Phase-I Enzymes

IMMUNO ENHANCER

- ☑ Hepatoprotective
- ☑ Neuroprotective
- ☑ Nephroprotective
- ☑ Adjuvant Cancer Therapy

PREVENTION AND PROTECTION AGAINST CANCER

PHYCOCYANIN and its effect on Reactive Oxygen Species(ROS), Apoptosis, Cyclo-Oxygenase 2 (COX-2), Bcl-2/Bax ratio

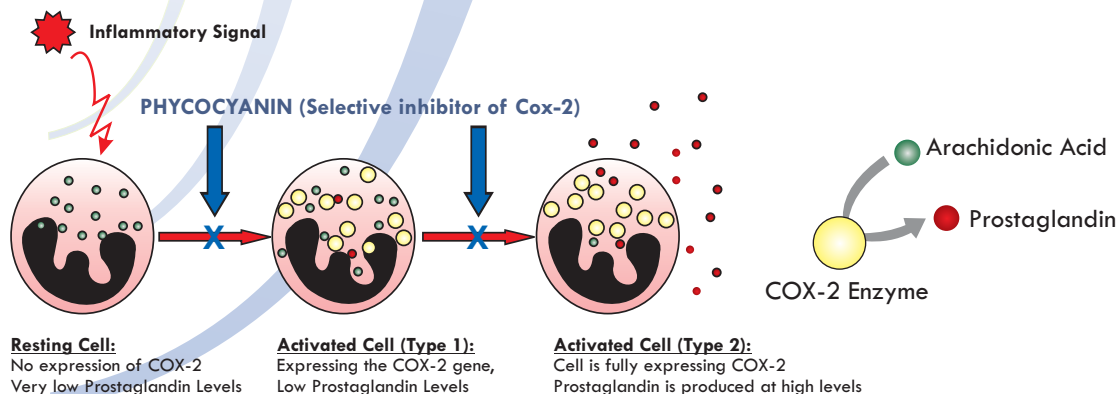
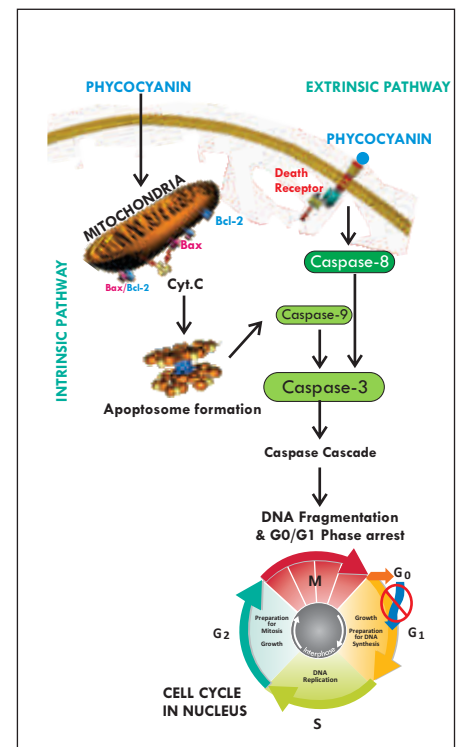
In cancer cells, the DNA is altered thus causing uncontrolled division. Cancer cells also generate reactive oxygen species endogenously to significant amounts which may be the cause of their excessive growth, elucidating the relation between the risk of carcinogenesis and reactive oxygen species (Szatrowski and Nathan ,1991).

Phycocyanin induces apoptosis in the existing and proliferating cancer cells and being a natural antioxidant, it also helps getting rid of any cancer promoting oxidative stress. Phycocyanin lowers the amount of cyclooxygenase-2 which is upregulated in cancer cells. It is established that Phycocyanin induces apoptosis in cancer cells by changing the Bcl-2/Bax ratio (Bcl-2 is an anti apoptosis protein, Bax is a pro-apoptotic protein, the ratio of Bcl-2/Bax represents the degree of apoptosis) and the release of Cyt-c in the cytosol (Lu et al, 2011).

Phycocyanin scavenges free radicals and protects cells from damage which prevents or lessens the severity of a disease (Wang et al.,2007). Studies have shown that phycocyanin is an efficient scavenger of oxygen free radicals (Bhat et al, 2001) and also reacts with other oxidants of pathological relevance such as HOCl and ONOO-. Phycocyanin is one of its kind natural molecule which has an established cancer preventive attribute.

Phycocyanin's easy digestibility and water solubility, thus becoming a possible natural agent for reducing the harmful effects of oxidative stress without any risk or toxicity. Some of the other beneficial and important characteristics of Phycocyanin are as follows:

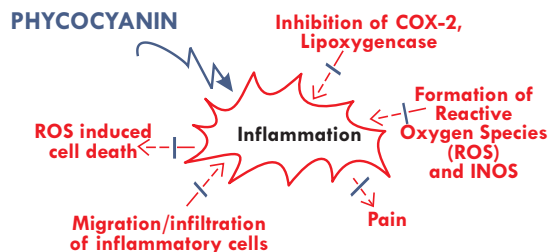
1. A pronounced cyto- and tissue-protective potential, in particular against oxidative stress.
2. Supports a healthy inflammatory response and neurological health.
3. An anti-oxidant potential due to multi-site actions such as neutralizing ROS.



natural ANTI-CANCER

NATURAL ANTI INFLAMMATORY

Anti-inflammatory activity of phycocyanin both in-vivo & in-vitro has been reported to occur by inhibition of cyclooxygenase-2 (COX-2) activity or by inhibition of platelet aggregation (Romy et al). Phycocyanin has exerted anti-inflammatory effects in a dose dependent fashion. Phycocyanin reduced edema, histamine release, myeloperoxidase activity and the levels of prostaglandin and leukotriene in the inflamed tissues. These can be due to its scavenging properties of phycocyanin towards oxygen reactive species (ROS) and its inhibitory effects on cyclooxygenase-2 (COX-2) activity (Madyastha et al, 2000).



PHYCOCYANIN AND IMMUNITY IN THE BODY

NATURAL ANTI-OXIDANT

Anti-oxidant potential of phycocyanin is mainly attributed to its phycobilisome (chromophore) moiety (Patel et al., 2006) and partially to its apoprotein counterpart (Apt et al., 1995) as the former shows high degree of conjugation of double bonds which stabilizes free radicals. It is well known that reactive oxygen species (ROS) are involved in a diversity of important processes in medicine including inflammation, atherosclerosis, cancer, reperfusion injury etc. Phycocyanin is able to scavenge these free radicals in the cells, protecting cells from damage which prevents or lessens the severity of the diseases (Wang et al., 2007).

NATURAL HEPATOPROTECTIVE

Lipid peroxidation mediated by ROS is believed to be an important cause of destruction and damage to cell membranes. Research suggests that phycocyanin significantly inhibits CCl₄ induced liver microsomal lipid peroxidation thus protecting the liver by preventing oxidative stress in hepatocytes acting as hepatoprotective molecule (Sathyaasikumar et al., 2007). Phycocyanin also inhibits microsomal lipid peroxidation induced by Fe⁺² – ascorbic acid or the free radical initiator 2, 2' azobis (2-amidinopropane) hydrochloride (AAPH) (Bermejo-Bescos et al 2008). Furthermore, it reduces carbon tetrachloride (CCl₄)- induced lipid peroxidation.

NATURAL NEURO-NEPHRO PROTECTIVE

A scientific study demonstrates that either the prophylactic or the therapeutic application of phycocyanin was able to significantly reduce the infarct volume, and also protect hippocampal neurons from death, induced by global cerebral ischemia/ reperfusion injury in gerbils (Penton-Rol et al, 2011). Studies reveal that phycocyanin is a potent platelet aggregation inhibitor with a potential to hamper arterial thromboembolism in conjunction with its neuroprotective ability. Antioxidant nature of Phycocyanin also protects against oxalate-induced nephron injury.

DETOXIFICATION AND ENZYME EXPRESSION

Phycocyanin has been shown to increase the expression of essential enzymes and biochemicals related to the balanced function of liver and Kidney. Phycocyanin has been documented to modulate the activities of Cyt p-450, Superoxide Dismutase, Catalases, Alanine Transaminases, Aspartate Transaminases (Ivanova et al 2010).

WHAT'S MORE?

ADJUVANT CANCER THERAPY AND PALLIATIVE CARE

A further reason for using phycocyanin in cancer therapy is that the regular intakes of this molecule have been shown to boost immune responses. The particular types of immune cells involved in cancer control, cytotoxic T- lymphocytes and NK cells, function more effectively with increased intakes of phycocyanin (Arias et al, 2011). Therefore, the likely benefits of PHYCOCYANIN™ in clinical cancer therapy especially when used as an adjuvant to chemotherapy are: improved response of cancers to chemotherapy, increased capacity of the immune system to fight cancer spread; and reduced risk that chemotherapy may eventually give rise to a new cancer.

NO KNOWN TOXICITY

Disclaimer: This product is not intended to diagnose, treat, cure or prevent any disease. All information, data & claims presented are taken from secondary sources like research papers etc. published in various National & International Journals and Standard Textbooks. Hash Biotech Labs Pvt. Ltd. makes no claim for their authentication. Please consult your doctor before taking any food supplement.

naturalHEPATO-PROTECTIVE

IMMUNE SYSTEM

Phycocyanin enhances secretory IgA antibody response and suppresses allergic IgE antibody response in mice immunized with antigen-entrapped biodegradable microparticles. – Department of Health and Nutrition, Kagawa Nutrition University, Chiyoda, Sakado, Saitama 350-0288, Japan

Phycocyanin boosts the immune system – In Japan, studies on mice suggests that phycocyanin raises lymphocyte activity and may increase survival of cancer-stricken organisms. – Iijima, N., Shimamatsu, H., et. Al. (inventors; Dainippon Ink x Chemicals assignee). Anti-tumor agent and method of treatment therewith. US Patent pending, ref. P1 150-726-A82679, App. 15 Sep 1982.

ANTI OXIDANT AND FREE RADICAL SCAVENGING

C-phycocyanin: a biliprotein with antioxidant, anti-inflammatory and neuroprotective effects. – Departamento de Farmacologia, Centro Nacional de Investigaciones Cientificas, Apartado 6412, Habana, Cuba. – Curr Protein Pept Sci.2003 Jun; 4(3):207-16

Analysis revealed the antioxidant and antiuro lithic potential of phycocyanin thereby projecting it as a promising therapeutic agent against renal cell injury associated kidney stone formation. – Department of Medical Biochemistry, Dr. ALM Postgraduate Institute of Basic Medical Sciences, University of Madras, Taramani, Chennai 600113, India. – chem. Biol Interact. 2004 Aug 10; 149(1):1-7

C-phycocyanine are able to reduce the steady state concentration of the peroxy radicals. – Department of Chemistry, Faculty of Chemistry and Biology, Universidad de Santiago de Chile, Santiago, Chile. – Free radic boil Med 2000 Apr 1; 28(7):1051-5

Phycocyanin is able to scavenge OH and RO radicals. It also inhibits liver microsomal lipid peroxidation. – Pharmacology Department, National Center for Scientific Research, CNIC, Havana, Cuba. – Inflamm Res 1998 Jan; 47(1):36-41

Increase in phycocyanin content was related to an increase in the antioxidant activity in different fractions, and therefore phycobiliprotein phycocyanin is the component mainly responsible for the antioxidant activity. – Departamento de Farmacologia, Facultad de Farmacia, Universidad Complutense de Madrid, Spain. – Farmaco 2001 May-Jul;56(5-7): 497-500

Study has demonstrated that phycocyanin, a biliprotein from spirulina platensis has the ability to inhibit the ONOO(-), a potent physiological inorganic toxin, hence has the potential to be used as a therapeutic agent. – Chemical Biology Unit, Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore, India – Biochem Biophys Res Commun 2001 Jul 13; 285(2):262-6

Phycocyanobilin is responsible for the majority of the antioxidative activity of phycocyanin and may act as an effective antioxidant in a living human body. – Takashi Hirata, Mikiya Tanaka, Masaki Ooike, Teppei Tsunomura & Morihiko Sakaguchi, Division of Applied Biosciences, Graduate School of agriculture, Kyoto University, Japan

HEPATOPROTECTION AND DETOXIFICATION

C-phycocyanin significantly decreases Kupffer cell phagocytosis and the associated respiratory burst activity, effects that may contribute to the abolition of oxidative stress-induced TNF-alpha response and NO production by hyperthyroid state. – Centro de Investigaciones del Ozono, Centro Nacional de Investigaciones Cientificas, Ciudad de la Habana, Cuba. – Inflamm Res 2002 Jul;51(7):351-6

Phycocyanin provides protection to liver enzymes – Department of Organic Chemistry, Indian Institute of Science, Bangalore, 560 012, India. – Biochem Biophys Res Commun 1998 Aug 19;249(2):428-31

Antioxidant nature of C-phycocyanin protects the renal cell against oxalate-induced injury and may be a nephroprotective agent. – Department of Medical Biochemistry, Dr. AL Mudalija Post-Graduate Institute of Basic Medical Sciences, University of Madras, Taramani, Chennai-600 113, India. – Clin Chim Acta. 2004 Oct; 348(1-2):199-205

CELLS AND BLOOD SYSTEM PROTECTION

Phycocyanin and polysaccharides enhanced bone marrow reproduction, growth of thymus and spleen and biosynthesis of serum protein.– Zhang Cheng-Wu, et. al. Effects of polysaccharides and phycocyanin from spirulina on peripheral blood and hematopoietic system of bone marrow in mice. Second Asia Pacific Conf. Ibid, April, 1994

Phycocyanin, a novel hypocholesterolemic protein derived from spirulina platensis, can powerfully influence serum cholesterol concentrations and impart a stronger hypocholesterolemic activity than SPC (Spirulina platensis concentrate) in animals. – Department of Applied Life Science, Faculty of Applied Biological Sciences, Gifu University, Gifu 501-1193, Japan – J Nutr.2005 Oct;135(10):2425-30

C-phycocyanin protected cerebellar granule cells from the apoptosis induced by deprivation. – Unitat de Farmacologia I Farmacognosia, Facultat de Farmacia, Nucli Universitari de Pedralbes, Barcelona, Spain. – Naunyn Schmiedebergs Arch Pharmacol 2001 Aug; 364(2):96-104

ANTI CANCER

Small dosage of phycocyanin daily maintains or accelerates normal control cell functions that prevents generation of malignancy such as cancer or inhibits its growth or recurrence. – Dainippon Ink x Chemicals and Tokyo Kenkyukai (inventors and assignee). Anti-tumor agents containing phycobilin – also used to treat ulcers and hemorrhoidal bleeding. 1983, JP58065216 A 830418.

C-Phycocyanin, the major light harvesting biliprotein from Spirulina platensis is of greater importance because of its various biological and pharmacological properties. It is a water soluble, non-toxic fluorescent protein pigment with potent anti-oxidant, anti-inflammatory and anti-cancer properties. –Department of Animal Sciences, School of Life Sciences, University of Hyderabad, Hyderabad 500046, India. – Biochem Pharmacol. 2004 Aug 1;68(3):453-62

Phycocyanin significantly inhibited the growth of human leukemia K562 cells. – Medical School, Nanjing University, Nanjing, 2/0093, PR of China.

Phycocyanin, a natural product, could be a possible chemotherapeutic agent through its apoptotic activity against tumor cells. – Centre for Cellular and Molecular Biology, Hyderabad 500 007, India – Mol Cancer Ther.2003 Nov;2(11):1165-70

The recombinant subunit of C-phycocyanin inhibits cell proliferation and induces apoptosis – Cancer Letters – Department of Biology, Georgia Cancer Center, Georgia State University, University Plaza, Atlanta, Ga30303. USA – Received 16 January 2006, received in revised form 31 March 2006, accepted 6 April 2006.

ANTI INFLAMMATORY

The anti-inflammatory effect of microalgae spirulina was studied in Zymosan-induced arthritis in mice. The anti-arthritic effect exerted by spirulina as shown in this model may be at least partly due to the previously reported anti-inflammatory and antioxidative properties of its constituent, Phycocyanin. –Ozone International Center, Havana, Cuba – Mediators Inflamm 2002 Apr; 11 (2):75-9

Phycocyanin may result, at least partially, from inhibition of prostaglandin E2 production and a moderate inhibition of phospholipase A2 activity. – Departamento de Farmacologia, Centro Nacional de Investigaciones Cientificas, CNIC, Habana, Cuba – Arzneimittelforschung 2000 Dec;50(12):1106-9

Anti-inflammatory activity of phycocyanin extract in acetic acid-induced colitis in rats – Pharmacology Department, National Center for Scientific Research, PO Box 6990, Havan, Cuba

Phycocyanin exerts inhibitory effects on tumor necrosis factor-alpha(TNF alpha) and NO production which might be ascribed to the antioxidative properties of the biliprotein. – Department of Pharmacology, National Center for Scientific Research, Havana, Cuba – Arzneimittelforschung 2001 Sep;51(9):733-6

Phycocyanin shows anti-inflammatory activity in four experimental models of inflammation. Its antioxidative and oxygen free radical scavenging properties may contribute, at least in part, to its anti-inflammatory activity. – Depto. Farmacologia, Centro Nac. Invest. Cientificas, CNIC, Habana, Cuba – Inflamm Res 1998 Aug;47(8):334-8

CANCER
is killing
many people
with every
moment
passing.
LET US
FIGHT AGAINST IT!!!

PHYCOCYANIN™ is a proactive technology innovation in the field of medical sciences, targeting both cancer prevention and cancer treatment. It is a wondrous food supplement for patients undergoing cancer treatment to help combat cancer as well as counter cancer related health challenges. PHYCOCYANIN™ is filling a huge void in the cancer supportive care expectations that the patients and the physician can rely upon.

RECOMMENDED DOSAGE

Two tablets a day per person or as directed by your physician.



The product comes in a tamper proof pack of 60 tablets each.



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Limited**

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