GET INTO THE

Science Behind Innovation

Bio Complexation Technology (BPC) Technology

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Vybe products

Power Vybe

Energy Vybe

Creatine Vybe

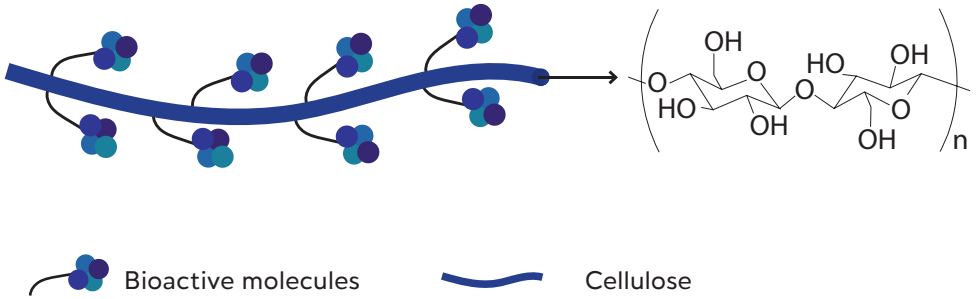
Science Behind Innovation

Bio Complexation Technology (BPC) Technology

- Biopolymer complexation technology or BPC technology is a technology that works with the presence of cellulose material.

- Cellulose is natural polysaccharide materials having long chain hydroxyl groups as a backbone. It is a hydrophilic material due to the presence of large number of hydroxyl group. The addition of cellulose into the product, the active components of product may leads to make a complex with functional components of cellulose using electro-static interaction and hence the functionality will be increased.

Efficacy and safety of a nutraceutical combination of Asparagus Racemosus, Chlorophytum Borivilianum, Pomegranate extract and selenium Evaluated in A Randomized, Placebo Controlled, Double-Blind Study, Journal of Sexual Medicine, Elsevier, 2020 (to be published soon)



- The addition of cellulose into the product, the active components of product may leads to make a complex with functional components of cellulose using electrostatic interaction and hence the functionality will be increased.

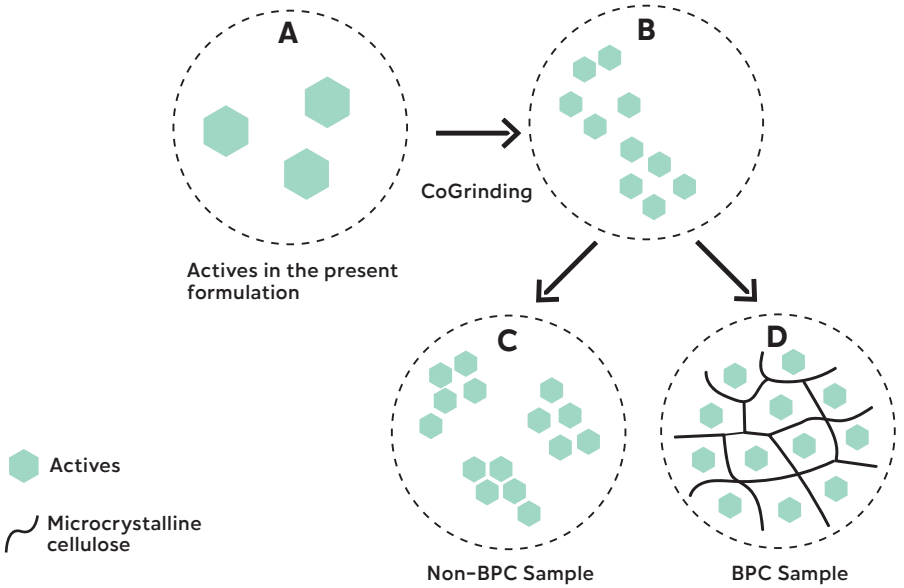
- Hydroxyl functional group in cellulose backbone constructed as hydrogen bonds and need a high energy to break that long lateral order. This feature of cellulose prevents the active components of herbal extract from a fast release.

- This is due the reason that, the hydroxyl functional group in cellulose backbone constructed as hydrogen bonds and need a high energy to break that long lateral order. This feature of cellulose prevents the active components of herbal extract from a fast release.

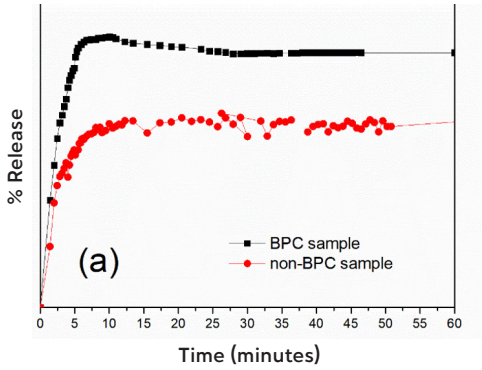
- Slower the release of active components can increase the higher absorption and bioavailability.

[(Application no. (Indian) 201941009642; 16817438 (USA)]

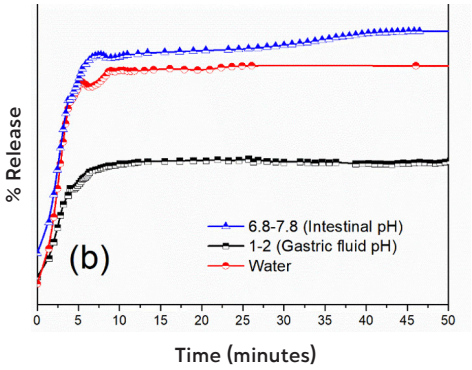
Schematic representation of formulation of Vybe Products by Biopolymer complexation Technology



Release profile of BPC and non-BPC sample



(b) Release profile of BPC sample at different pH



POWER VYBE

- Power Vybe is a dietary supplement with the ideal ratio between L-Arginine and L-Ornithine with Ashwagandha (Withania Somnifera).

- Dietary supplements containing arginine and ornithine are among the most popular ergogenic intended to enhance strength, power and muscle recovery associated with both anaerobic and aerobic exercise. [2]

- Arginine administration has been claimed to promote an increase in blood perfusion in the active muscle, increasing substrates necessary for improving muscular recovery and protein synthesis during and/or after exercise.[3]

L-Arginine | L-Ornithine | Aswagandha Extract | Cellulose | Sunflower Lecithin | Strawberry Flavour

L-Arginine is an amino acid that is involved in many physical processes in our body.

L-Arginine is a precursor for nitric oxide that is known to improve blood flow, which in turn may aid the delivery of important nutrients to working muscles and assist with metabolic waste product removal.

L – Ornithine is an amino acid is very suitable for athletes and the active person and is naturally occurring amino acid found in meat, fish, dairy and eggs.

Ornithine is one of the key reactants in the urea cycle that is responsible for 80% of the nitrogen excretion in the body.

Ornithine is used for improving athletic performance, reducing glutamine poisoning in the treatment of a brain condition due to liver diseaseand for wound healing.

Withania Somnifera (Ashwagandha) helps counteract chronic fatigue, weakness, dehydration, bone weakness, loose teeth, thirst, impotency, premature aging emaciation, debility, convalescence and muscle tension, and gives anti-stress effect

Ashwagandha It has been used for over 3,000 years to relieve stress, increase energy levels, and improve concentration.

Burtscher M, Brunner F, Faulhaber M, Hotter B, Likar R. The prolonged intake of L-arginine L-aspartate reduces blood lactate accumulation and oxygen consumption during submaximal exercise. J. Sports Sci. Med. 2005;4:314–22.

Alvares T.S, Meirelles C.M, Bhambhani Y.N, Paschoalin V.M, Gomes P.S. L-Arginine as a potential ergogenic aid in healthy subjects. Sports Med. 2011;41:233–48.

Sugino T, Shirai T, Kajimoto Y, Kajimoto O. L-ornithine supplementation attenuates physical fatigue in healthy volunteers by modulating lipid and amino acid metabolism. Nutr Res. 2008 Nov;28(11):738-43. doi: 10.1016/j.nutres.2008.08.008. PMID: 19083482.

Kaur P, Mathur S, Sharma M, Tiwari M, Srivastava KK, Chandra R. A biologically active constituent of withania somnifera (ashwagandha) with antistress activity. Indian J Clin Biochem. 2001 Jul;16(2):195-8. doi: 10.1007/BF02864860. PMID: 23105317; PMCID: PMC3453638.

ENERGY VYBE

Energy Vybe is a balanced nutritional supplement gives you energy, increases your concentration and helps your resistance with Ashwagandha (Withania Somnifera).

This balanced nutritional supplement gives you energy, increases your concentration and helps your resistance. Energy Vybe contains alpha lipoic acid and L-carnitine, both naturally occurring in foods. This formula also contains vitamin B6, which contributes to the energy supply in the muscles. In addition, vitamin B6 helps the immune system, supports a good resistance and contributes to the ability to concentrate.

Ingedrient	Function
L - Carnitine	L-carnitine helps the body produce energy. It is important for heart and brain function, muscle movement, and many other body processes.
Lipoic Acid	Alpha-lipoic acid is used in the body to break down carbohydrates and to make energy for the other organs in the body. It seems to work as an antioxidant, which means that it might provide protection to the brain under conditions of damage or injury.
Ashwagandha Extract	It helps counteract chronic fatigue, weakness, dehydration, bone weakness, loose teeth, thirst, impotency, premature aging emaciation, debility, convalescence and muscle tension, and gives anti-stress effect.

Ingedrient	Function
Vitamin B6	Vitamin B6, or pyridoxine, is a water-soluble vitamin found naturally in many foods, as well as added to foods and supplements. Pyridoxal 5' phosphate (PLP) is the active coenzyme form and most common measure of B6 blood levels in the body.
Magnesium Citrate	Magnesium is a naturally occurring mineral that is important for many systems in the body, especially the muscles and nerves.
Sunflower lecithin (PC-20)	Bulking Agent
Cellulose	Bulking Agent

Karlic H., Lohninger A. Supplementation of l-carnitine in athletes: Does it make sense? Nutrition. 2004;20:709–715. doi: 10.1016/j.nut.2004.04.003.

Fielding R, Riede L, Lugo JP, Bellamine A. l-Carnitine Supplementation in Recovery after Exercise [published correction appears in Nutrients. 2018 Apr 26;10(5):]. Nutrients. 2018;10(3):349. Published 2018 Mar 13. doi:10.3390/nu10030349

Salehi B, Berkay Yılmaz Y, Antika G, et al. Insights on the Use of α-Lipoic Acid for Therapeutic Purposes. Biomolecules. 2019;9(8):356. Published 2019 Aug 9. doi:10.3390biom9080356

Kaur P, Mathur S, Sharma M, Tiwari M, Srivastava KK, Chandra R. A biologically active constituent of withania somnifera (ashwagandha) with antistress activity. Indian J Clin Biochem. 2001 Jul;16(2):195-8. doi: 10.1007/BF02864860. PMID: 23105317; PMCID: PMC3453638

Kennedy DO. B Vitamins and the Brain: Mechanisms, Dose and Efficacy--A Review. Nutrients. 2016;8(2):68. Published 2016 Jan 27. doi:10.3390/nu8020068

Schutten JC, Joris PJ, Mensink RP, et al. Effects of magnesium citrate, magnesium oxide and magnesium sulfate supplementation on arterial stiffness in healthy overweight individuals: a study protocol for a randomized controlled trial. Trials. 2019;20(1):295. Published 2019 May 28. doi:10.1186/s13063-019-3414-4

CREATINE VYBE

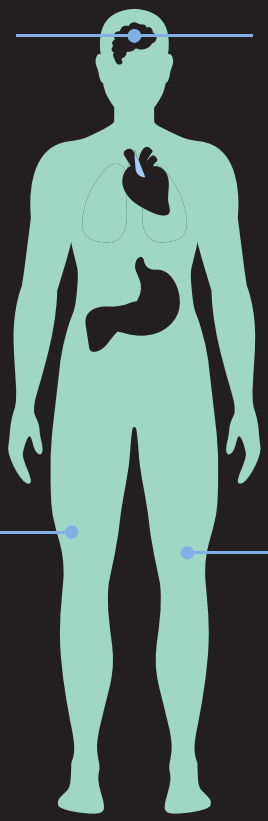
Creatine is one of the most widely used supplements in the athletic world — and for good [1]. This compound is stored in your muscles and used for quick bursts of energy. Creatine supplements may build muscle and strength, improve high-intensity exercise performance and prevent sports-related injuries [2].

[1] *Tarnopolsky MA. Caffeine and creatine use in sport. Ann Nutr Metab. 2010;57 Suppl 2:1-8. doi: 10.1159/000322696. Epub 2011 Feb 22. PMID: 21346331.*

[2] *Kreider, R.B., Kalman, D.S., Antonio, J. et al. International Society of Sports Nutrition position stand: safety and efficacy of creatine supplementation in exercise, sport, and medicine. J Int Soc Sports Nutr 14, 18 (2017). https://doi.org/10.1186/s12970-017-0173-z*

Neurological support
Creatine may help to support neurological functions, especially those dealing with movement. This use typically involves daily supplementation for a prolonged period.

Cognitive function support
The long-term use of creatine may support functions in childeren, including attention span and language skills.

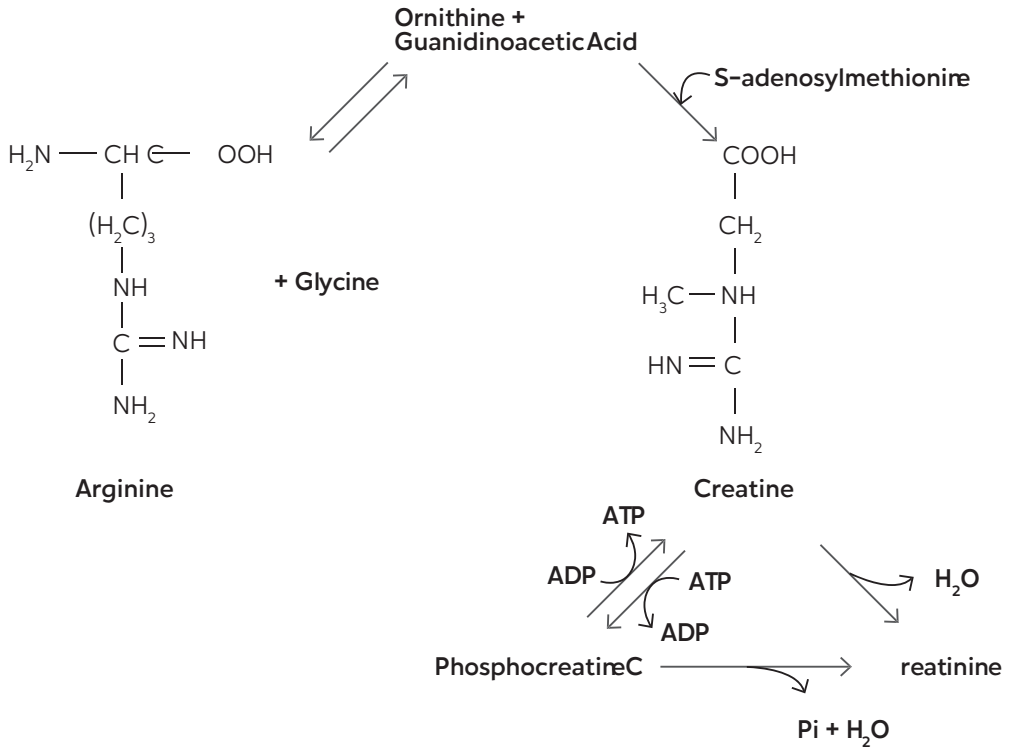


Exercise support
Creatine may support athletic performance, especially in sports characterized by quick, intense movements. This application is typically most beneficial for young adults.

Muscle health support
Creatine supplements are often used to increase muscle siza for physically active adults, especially athletes. This use may be more effective by using a loading regimen, rather than continuous use.

Chemical structure and biochemical pathway for creatine synthesis

Creatine Monohydrate	Cellulose	Sunflower Lecithin



Kreider RB, Jung YP. Creatine supplementation in exercise, sport, and medicine. J Exerc Nutr Biochem. 2011;15(2):53–69.

Science Behind Innovation

Bio Complexation Technology (BPC) Technology

A novel Biopolymer complexation technology was implemented to Vybe Products, a combination of group of bioactive molecules.

The formulation of Vybe products consists of poorly soluble actives that restricts its bioavailability, biosorption and dissolution.

This technology uses cellulose to form a micelle that holds actives inside it and forms an interpenetrating network structure.

BPC technology can be a promising technology to improve the biological actives of poorly soluble drugs without any side effect

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