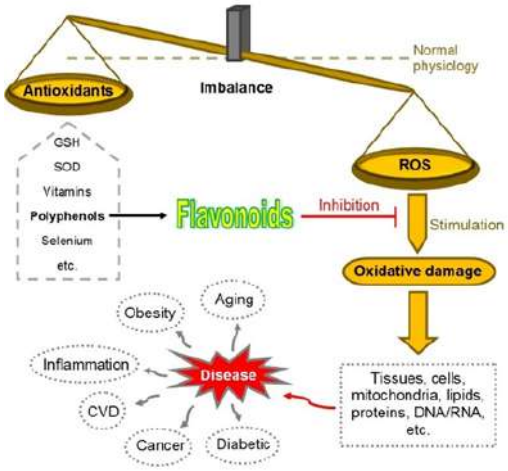
PRODUCT GUIDE

BIOFLAVONOIDS FOR HEALTH SUPPLEMENTS

Bioflavonoids as natural antioxidants

Bioflavonoids in general have been recognised as natural antioxidants to help protecting body against stress and toxin. They also reduce inflammation as a result of body immune responses such as cold, headache, loss appetite, and fatigue. Daily consumption of bioflavonoids in food and drinks might reduce the risk of high-blood pressure, heart attack, and cancer.



Cassava bioflavonoids (CBDs) properties

One of unknown potential bioflavonoid which has not been utilised is from cassava leaves. The cassava bioflavonoids contain rutin and nicotiflorin abundantly.[1] Rutin is known to have various properties such as antioxidant, anticancer, antidiabetic, cholesterol-lowering activity and cardioprotective.[2,3] Meanwhile, nicotiflorin has ability to recover nerve and brain function in neurodegenerative animal models.[4,5] In silico study showed both rutin and nicotiflorin can inactivate Sars-Cov-2 virus by inhibition of protease virus.[6,7,8] In our first in vitro study, CBDs showed inhibition activity towards α-glucosidase which was higher than rutin or nicotiflorin. It confirmed that the combination of rutin dan nicotiflorin in CBDs possess a synergistic effect as α-glucosidase inhibitor.

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Effects of CBDs

- Antioxidant
- Antiinflammation
- Immunostimulant
- Degenerative disease prevention

Applications

- Health supplements
- Healthy food
- Healthy drink

Examples

- **CBDs-fortified honey**

Basically, natural honey contains a trace number of bioflavonoids and other substances that simultaneously affects the physical properties, taste, aroma and health benefits of honey such as antioxidant, antiinflammation, digestive health promoting effect, and cough relieving. However, fortification with CBDs could improve the health benefits of honey over hundred times. Moreover, the CBDs modify the physical properties, sweetness and taste of honey. The fortified honey became more delicate, delicious and the strong after taste commonly occurred when consuming honey was eliminated. All the improvements give a new and unforgettable experiences in consuming honey.

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Examples

- **Health supplement**

  Many bioflavonoids-based health supplements are now available in the global market. The use of bioflavonoids in such supplements can be found as solely ingredient or in combination with other food supplements (vitamins, minerals, etc.). The CBDs, due to its unique composition, might stand out when used as health supplements. A wide CBDs-based formula can be made for any kind of health purposes.

Health Supplement

- **Healthy food and drink**

  The CBDs can also be used as functional ingredients in a wide variety of healthy processed food and drinks. They might be sold in form of, for example, super foods, healthy snack/bar for diets or antidiabetic, healthy chocolate, healthy drink claimed as natural antioxidants, anti-cholesterol agent, etc.

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