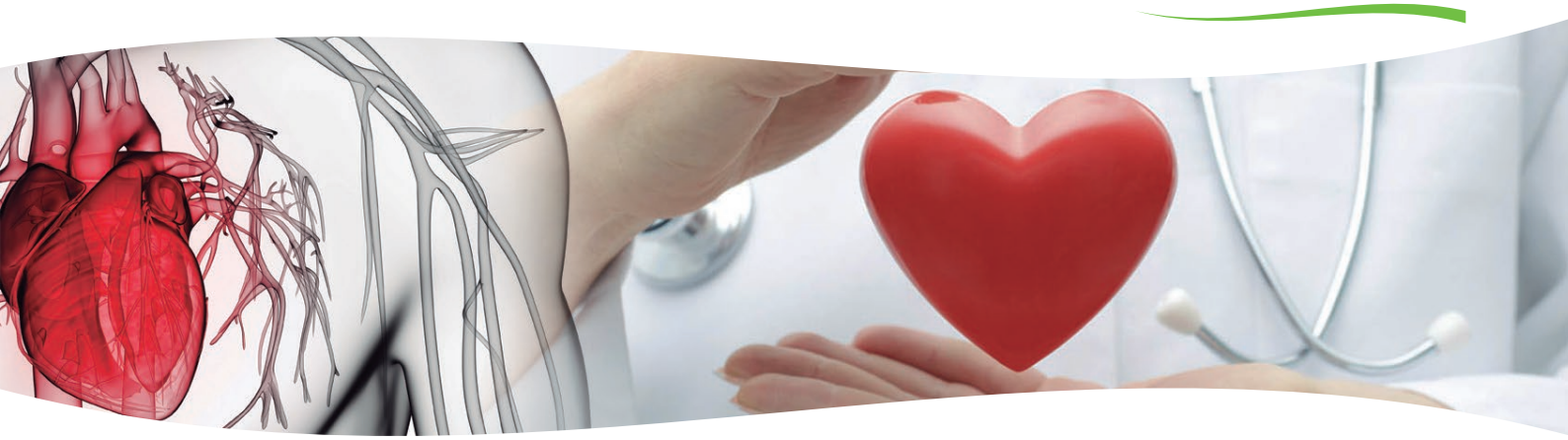

BT-CoQ_{10}

(CoQ_{10} Biotransformed)

APPLICATIONS

BT®-CoQ_{10} is a biotransformed CoQ_{10} that can be used in the following conditions:

- As antioxidant against free radicals.
- For anti-aging and degenerative diseases delay.
- To inhibit peroxidation of fats, especially LDL cholesterol, reducing the risk of cardiovascular diseases.

DESCRIPTION

BT®-CoQ_{10} is obtained by a fermentation process in presence of brewer's yeast (*Saccharo-myces cerevisiae L.*), which living cells transform nutrients present in their culture medium by specific biochemical reactions.

The final product is a nutritional matrix that contains phytonutrients, polyphenols, beta-glucans, glutathione, flavones, isoflavones... etc., among other substances.

BT®-CoQ_{10} STUDIES

Antioxidant activity of BT®-CoQ_{10}

The antioxidant capacity of two forms of CoQ_{10}: fermented and pure, as well as other natural substances such as vitamin C and vitamin E, was compared in the LDL-oxidation inducing system by cupric ion.

The results showed that pure CoQ_{10} presented almost the same antioxidant activity of pure vitamin C, while the value of the 1/IC50 of vitamin E was below both, the 1/IC50 for vitamin C and for CoQ_{10}.

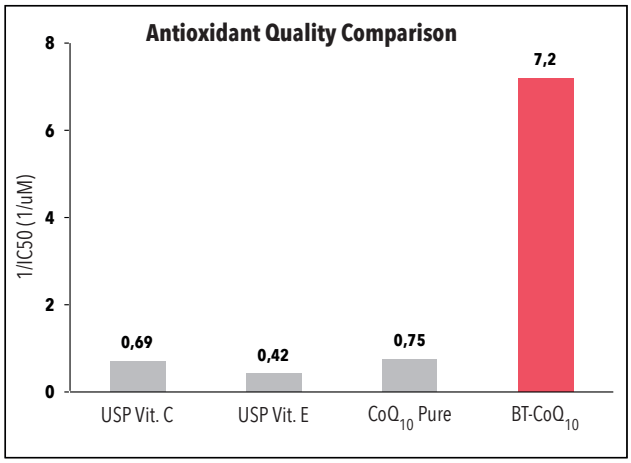

Fig.1 Index on the antioxidant capacity of BT®-CoQ_{10} versus pure CoQ_{10}, vitamin C and vitamin E.

When compared IC50 rates between pure CoQ_{10} (0.75) and fermented BT®-CoQ_{10}, (7.2), it was evident that the antioxidant activity of the fermented form was 9.6 times higher than the pure one.

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STUDIES IN HEALTHY VOLUNTEERS

The main objective of the fermentation process is to increase the bioavailability of CoQ_{10}. For this purpose, it was conducted a follow-up in healthy volunteers using both CoQ_{10} forms, the pure pharmaceutical grade CoQ_{10} and BT®-CoQ_{10}.

A cross-over study was carried out in 11 healthy volunteers of both sexes aged between 18 and 25 years. They were given capsules containing 300 mg of pure CoQ_{10} or 300 mg of BT®-CoQ_{10} (equivalent to 23 mg pure CoQ_{10} per capsule) for a period of one week.

The results demonstrated that the fermentation process increased the bioavailability of CoQ_{10} more than 2.6 times than the pharmaceutical CoQ_{10}, achieving a concentration 126% higher than the pure form within 30 minutes of ingestion.

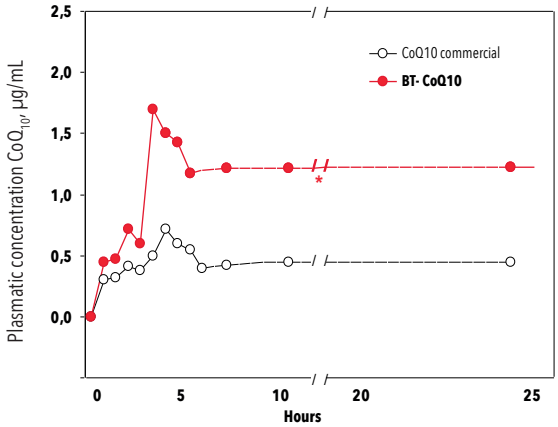

Fig.2 Concentración media plasmática de CoQ_{10} a lo largo del tiempo.

In this study the percentage of reduction of glutathione levels after one week of study was 30% for the BT®-CoQ_{10} and 22% for the pharmaceutical CoQ_{10}. However, the increase in glutathione peroxidase activity was much higher in the commercial formulation (9%) than in the biotransformed CoQ_{10} (1%). This could be explained by the large increase of CoQ_{10} in plasma of BT®-CoQ_{10} group (367%), compared to pharmaceutical CoQ_{10} group (205%).

This antioxidant potency evidenced by the results obtained with glutathione, confirms previous results obtained in the *in vitro* assay.

COQ_{10} SAFETY

Carefulness is recommended with concomitant use of anticoagulants and CoQ_{10} because of the structural similarity between CoQ_{10} and vitamin K.

Diabetic patients taking CoQ_{10} may need a dose adjustment of hypoglycemic agents due to the antidiabetic effect of CoQ_{10}.

CONCLUSIONS

BT®-CoQ_{10} have shown that this fermented form of CoQ_{10} is 2.6 times more bioavailable than its pure form with an antioxidant capacity, up to 9.6 times over pure CoQ_{10}.

Bioavailability and antioxidant capacity of the BT®-CoQ_{10} are guaranteed by the fermentation process that ensures the presence of important molecules from soy such as isoflavones, phytates, SOD, saponins, beta-glucans and other molecules that synergistically enhance the antioxidant capacity of CoQ_{10}.

RECOMMENDED DOSE

The recommended daily dose for children, adults and elderly is 41.3 mg of BT®-CoQ_{10}, which contains 3 mg CoQ_{10}, and has the same antioxidant capacity than 30 mg of purified CoQ_{10}.

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