Cocoa, cocoa powder and chocolate

Cocoa is one of the nutritional elements that is richest in polyphenols, principally those of the flavonoid group, especially the flavan-3-oles group (catechins, epicatechins and their oligomers the procanidines), although flavonols such as quercetin and its glucosides and antocianos can also be found.

Recently it has been demonstrated that cocoa flavonoids and their derivatives present a great variety of benefits in the prevention of cardiovascular and degenerative diseases:

1. Protective antioxidant action against free radicals and other degenerative species, therefore preventing LDL oxidation.
2. Modulation of vascular homeostasis, inhibiting the platelet aggregation.

The most popular way of consuming cocoa is as chocolate or as other types of related products which contain cocoa. Nevertheless, in many countries one of the main sources of cocoa is the so-called cocoa soluble, a cocoa product which dissolves in milk or water and is used as a breakfast beverage. The Spanish population is the biggest consumer of cocoa solubles in the world, 1.7 kg/person/year. Other countries such as Norway, Sweden, France, Brazil, Austria and Australia also have a high consumption index.

The beneficial effects of polyphenols would depend on the quantity of consumption, bioavailability and the biological activity of the conjugates formed during the metabolism and excretion. This is why in this project we are researching the types of metabolites formed and their concentration in blood and urine in healthy volunteers after the consumption of a mixture of cocoa containing 40 g of cocoa solubles. At the same time, we are investigating whether milk influences the absorption and/or excretion of these metabolites, and the antioxidant capacity of the different excreted metabolites.

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