

Libyan international medical university



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Dark chocolate

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Subject : effect of main component in dark chocolate (**Flavonoid**)

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Abstracte:

Effect of main substances in cacao of dark chocolate li (Anandamide - Tryptophan - Caffeine - Theobromine) but the main substance in cacao of dark chocolate and to give the main effect of it, the **Flavonoid** and its six types and the main two effect of flavonoid (antioxidant activity- anti-inflammatory activity), meeting of these effect to help some cardio-diseases such as **Atherosclerosis**, Finally its effect on apatite.

:Introduction

The dark chocolate generally contain mainly cacao and milk and less amount of sugar. The cacao made from beans from the Theobroma cacao tree was first discovered in the Mesoamerica population uses of cacao or chocolate either as a primary remedy or as a vehicle to deliver other medicines . Between the 16th and 20th centuries, well over 100 countries uses for cacao or chocolate, as a medical treatment

- i) to stimulate the nervous system
- ii) to improve digestion and elimination
- iii) to weight loss. **(1)**

:Discussion

There is some substance in cacao of dark chocolate to give some effect :

1- Anandamide : Regulation of feeding behavior, and the neural generation of pleasure. **(2)** **2-**Tryptophan :That helps the brain to make serotonin which promotes feeling of well being. **3-** Caffeine : Prevents the onset of drowsiness, stimulates autonomic nervous and central nervous system. **(2)**

4- Theobromine : Is a vasodilator , Limited mood effects, has also improve the hardness of enamel. **(2)**

The main substance in the cacao to give main effect of the Dark chocolate, it is the **flavonoids** are based upon a fifteen-carbon skeleton consisting of two benzene rings (A and B) linked via a heterocyclic pyrane ring (C), The

various classes of flavonoids differ in the pattern of substitution of the C ring, while individual compounds within a class differ in the pattern of substitution of the A and B rings, the flavonoid has six types (3)

1) flavone 2) flavanone 3) flavonol 4) flavan-ol 5) Iso-flavone 6)

Anthocyanidin

The flavonoid also has two main effect in the

body :

1) ANTIOXIDANT

ACTIVITY :

Suppression of ROS formation either by inhibition of enzymes or by chelating trace elements involved in free radical generation.(4)

- Scavenging Reaction Oxygen Species (ROS); and up regulation or protection of antioxidant defenses(4)

2)ANTI-INFLAMMATORY ACTIVITY :

- Flavonoids may affect specifically the function of enzyme systems critically involved in the generation of inflammatory processes, especially tyrosine and serine-threonine protein kinase. - Much of the anti-inflammatory effect of flavonoid is on the biosynthesis of protein cytokines that mediate adhesion of circulating leukocytes to sites of injury.

(4) The Flavonoid in the cacao of Dark chocolate its two main effect they help the cases or people of cardio-diseases by these effects and will be use as the calming food to help any drugs for cardio-disease and will be meet these effects in one of the cardio-disease such as in the **atherosclerosis :**

- Flavonoids prevent LDL oxidation by scavenging radical species and prolongs the lag time of LDL oxidation, The ability to prevent LDL oxidation in vivo depends on their bioavailability, particularly their binding to lipoproteins. (5)

- Action of Flavonoids on platelet similar to action of antiplatelet To block the COX-1 with effect on Thromboxane production. (5)

Also has effect on appetite to decreased insulin resistance, lowered the levels of ghrelin and increase level of leptin. (5)

Conclusion:

Dark chocolate as we known not just take as just food but it take as healthy thing or medical food, There is new studies for its effect which will be as the best calming food to help any drugs to treat cardio diseases such as atherosclerosis

:References

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