

Abstracts of Free Papers

FREE PAPER 1:

EFFECTS OF DIFFERENT OILS ON ABSORPTION OF CAFFEIC AND VANILLIC ACIDS IN WISTAR RATS

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Background

The amount of antioxidants absorbed from a meal will depend on bioavailability irrespective of the quantity found in a meal. Dietary fatty-acids are reported to increase absorption of calcium and drugs by regulating the tight junction permeability.

Objective

Compare the effect of soybean oil (SO), coconut oil (CO) and olive oil (OO) on the absorption of two phenolic antioxidants, caffeic (CA) and vanillic (VA) acids.

Method

Male Wistar rats (5 weeks, 180-200g) were randomly divided into six groups [(n=7), (ethical approval 13/14)]. Three diets were prepared using the three oils and for each oil, two groups were maintained. One group of each oil was fed a diet including CA and VA and the other group excluding them. Faeces were collected on day 0 and 19th, 20th and 21st days, extracted, purified and injected to HPLC.

Results

On day 0, CA and VA could not be found in the faeces of rats fed different oils with and without CA and VA. The VA in faeces was not detected after 20 days in all the groups. However, CA was detected in the faeces of rats fed with different oils. The order of excretion of CA in faeces of rats is SO < CO < OO. A significant difference ($p \leq 0.05$) in excretion was observed between SO and OO and CO and OO. There was no significant difference ($p > 0.05$) in the excretion of CA between SO and CO.

Conclusion

It can be concluded that the absorption of CA is facilitated by SO and CO more than OO.

Keywords: Caffeic acid, coconut oil, intestinal absorption, vanillic acid, Wistar rats