

From: Robert Levin [relevin@foodsci.umass.edu]
Sent: Friday, September 17, 2004 1:27 PM
To: Saldanha, Leila (NIH/OD)
Subject: thoughts regarding bioactive components of the diet

Importance: High

Dear Dr. Saldanha:

Comments Regarding Bioactive Components of Foods

- I would not recommend that essential nutrients be considered as bioactive components per se in terms of e.g. vitamin A teratogenicity, rickets resulting from vitamin D deficiency etc. and various maladies resulting from specific amino acid and other vitamin deficiencies. I would also not include problems with aneurisms resulting from lack of saturated fatty acids in the diet. In other words, I would restrict the definition to apply to individuals with otherwise normal diets (no dietary deficiencies or gross excess of vitamin A for example. This will make the establishment of an applicable definition easier to achieve.
- I would not exclude food additives.
- Certain bioactive components in foods may be desirable and others undesirable.
- A possible definition of bioactive component might be "bioactive components of foods are individual chemical components that either influence the physiology metabolism of other chemical components in the diet. Such bioactive components of the diet being either detrimental or of benefit to the human body under otherwise normal conditions of dietary intake."
- Caffeine would be a bioactive compound because it is a physiological stimulant.
- Vitamins A, C, and E would be bioactive components because of their antioxidant effects, but not as required vitamins.
- Various carcinogenic polyaromatic hydrocarbons generated in charred foods would be bioactive by forming DNA adducts and causing cellular mutations.
- Chemical agents that inhibit the metabolic activation of pre-carcinogens to ultimate carcinogens in hepatocytes would be bioactive agents.

I hope these thoughts will be of some use.

Sincerely,

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