

Questions for the Dietary Supplement Subcommittee March 25, 2003

Question 1: Is it possible to identify particular scientific criteria, principles, or conventions that enable a determination to be made about when a substance is or is not a metabolite of another dietary ingredient?¹

Question 2: Consider and discuss the scientific strengths and weaknesses of the following concepts with respect to their usefulness in identifying whether a substance is or is not a metabolite of another dietary ingredient:

- a) Direct or indirect participation in catabolic and/or anabolic sequences or pathways;
- b) Proximity (i.e., in terms of number of enzymatic steps away) to another dietary ingredient;
- c) Semblance to another dietary ingredient preceding it in a pathway or preceding reaction with respect to:
 - i) Function
 - ii) Structure
 - iii) Combination of both
- d) Possessing qualities or similarities to another dietary ingredient relative to:
 - i) Speed/time (i.e. clock-time conversion, enzymatic reaction rates, retention rates or impact on equilibrium concentrations/homeostasis)
 - ii) Compartmentalization (e.g., intracellular vs. extracellular activity; intracellular compartmentalization)
 - iii) Fate (i.e. final conversion, excretion or end-product retention by the body)

Question 3: Discuss the scientific validity and likely usefulness for identifying when a substance is or is not a “metabolite” of another dietary ingredient. If so, what characteristic(s) associated with the criterion make(s) it valid or useful?

¹ For present purposes, “another dietary ingredient” means a vitamin, mineral, herb or other botanical, amino acid, or dietary substance for use by man to supplement the diet by increasing the total dietary intake.