As the CRO Flies
CAPSULES
Contract Analytical Procedures and Services
April 2006
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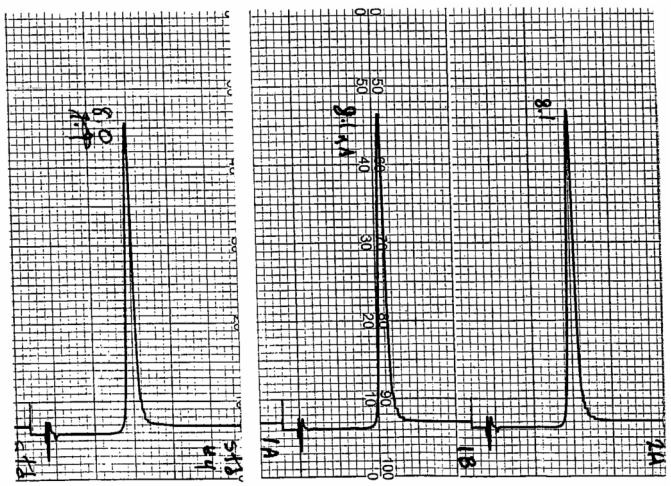
Choline:
Determination of Choline in a Complex Matrix

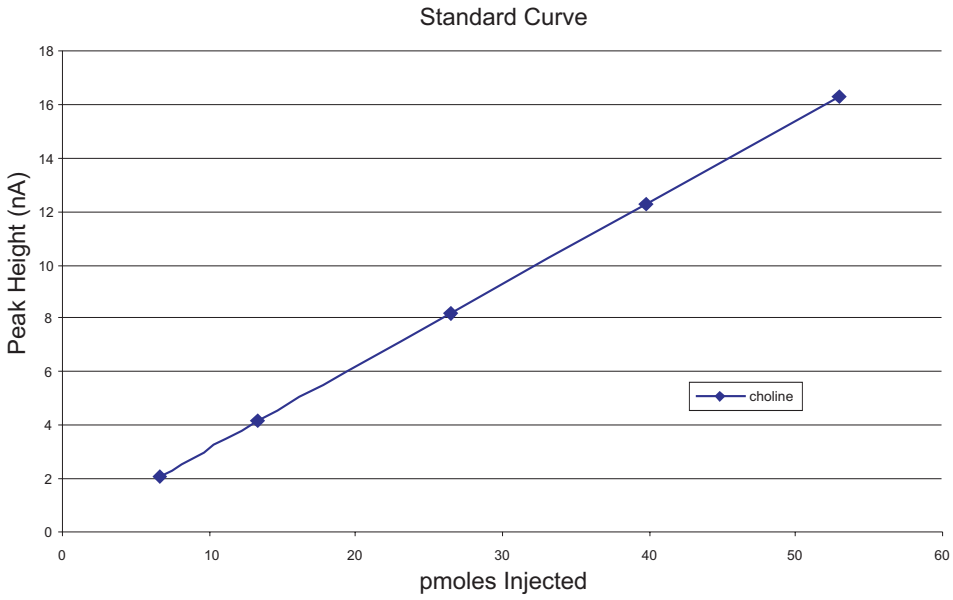
Choline, because it is a component of phospholipids is critical for normal membrane structure and function. Also, choline is a precursor to the neurotransmitter acetylcholine. Although small amounts are synthesized by the body, the bulk must be taken-in, thus choline is an essential nutrient. Although there are significant amounts of choline in many foods, some choline is added during processing, especially infant formulations. Excess intake of choline can be toxic, additive amounts should be monitored, Choline as an additive or endogenous can be quantified by LCEC. An ion-exchange column is used to resolve choline and a post-column choline oxidase IMER (Immobilized Enzyme Reactor) hydrolyzes choline to betaine and H_2O_2 . The H_2O_2 is detected at a "wired" electrode. A redox polymer film containing horseradish peroxidase is coated on the surface of a glassy carbon electrode, The redox polymer electrically "wires" the peroxidase to the glassy carbon. This chemically modified-electrode is selective for the reduction of H_2O_2 (*www.bioanalytical.com/products/lc/perox.html*). External standards are used to quantify samples. The lower limit of quantitation is 10 ng/mL (0.1 µM) using the epsilon amperometric detector. See: *www.bioanalytical.com/products/lc/cholanal.html.*

Sample matrix that contains protein must be acid precipitated prior to injection. However, protein-free samples like dialysates, ultrafiltrates, pills, nutrients, can be directly injected.

If you you have a need to determine choline in any matrix, contact BASi (*www.bioanalytical.com/products/equote.html*) for a quote.



Standard | Nutrient Sample



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