Laboratory Preparation of Conjugated Linoleic Acids

Sir:

Christie *et al*. (1) are quite correct to point out that commercial supplies of conjugated linoleic acid (CLA) may contain isomeric conjugated systems other than the expected 9*c*,11*t* and 10*t*,12*c* groups. Some may be tempted to prepare their own materials for research or standards and should be aware that this problem, as suggested by Christie *et al*. (1), is mostly a matter of conditions for the alkali isomerization. The definitive study by Mounts *et al*. (2) in 1970 used oxidative fission to show that, with potassium-*t*-butoxide catalyst at 60°C (20 h) and 90°C (4 h), there was "no scattering of the conjugated system." Unreacted 9*c*,12*c*-18:2 amounted to 34% at 60°C. At 140°C (2 h), *ca.* 20% total additional positional isomers were observed in addition to the principal products, as well as *trans*, *trans* isomer formation. The alkali isomerization procedure of AOCS Official and Tentative Method Cd 7-58 (4) is standardized at 180°C. However, the temperature of 90°C and the time of 4 h appear to be proven satisfactory for the specific CLA products usually desired to facilitate gas–liquid chromatographic identification and quantitation of CLA in foods (3).

REFERENCES

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3. Shantha, N.C., E.A. Decker, and B. Hennig, Comparison of Methylation Methods for the Quantitation of Conjugated Linoleic Acid Isomers, *J. AOAC Internat. 76*:644–649 (1993).
4. *Official Methods and Recommended Practices of the American Oil Chemists' Society,* edited by David Firestone, American Oil Chemists' Society, Champaign, 1990, Method Cd 7-58.

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