

[Analysis of n-6 / n-3 ratio of polyunsaturated fatty acids in human serum by reactive thermal desorption-gas chromatography using a vertical microfurnace pyrolyzer](#)

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Abstract:

Thermally assisted hydrolysis and methylation-gas chromatography (THM-GC) using a vertical microfurnace pyrolyzer and a flame ionization detector (FID) was applied to rapid analysis of chemical composition for polyunsaturated fatty acid (PUFA) components in human serum. Here, the authors used a reactive thermal desorption (RTD) method, where 2 μ L of a serum sample was subjected to the THM reaction at 250 °C for 20 s, to detect PUFA components with high selectivity and sensitivity. The resulting chromatograms clearly showed a series of fatty acid methyl esters including PUFAs without any interference peaks derived from the matrix components of the serum samples. Furthermore, the observed chemical composition and n-6 / n-3 ratio for PUFA components were in good agreement with those obtained by a conventional analytical technique involving solvent extraction and transmethylation.

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Frontier Labs Products used:

Multi-Shot Pyrolyzer (EGA/PY-3030D), UA-CW