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Pral File
I.C.

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ANALYSIS OF BLOOD SAMPLES FOR PERFLUOROOCTANOATE
(Job No. 810-866; PRAL Nos. 81-3517, 81-3520-3521; Notebook Nos. E22514, E26238)

As requested in your letters of 8/6 and 8/10/81, the 3 blood samples submitted then have been analyzed for perfluorooctanoate (C_8). Results and sample identification are given in the attached table.

As noted there, the analyses were done using a gas chromatographic method specific for C_8 (Lab Method Number ES-567) but results have been reported as ppm F for comparison with total organic fluorine analyses. Precision is $\pm 10\%$ relative standard deviation over most of the concentration range, somewhat less at the lowest values. The lower limit for quantitation is 0.007 ppm F (0.01 ppm perfluorooctanoic acid), with a detection limit of ~ 0.004 ppm which can be distinguished from the reagent background but not well quantitated.

Please contact me (772-4440) or L. J. Papa (772-2745) if you have any questions regarding the analyses. General questions on blood sampling can be directed to J. W. Raines or L. F. Percival.


S. S. Stafford

Attachment
jah

Key Words:

Perfluorooctanoic Acid
Perfluorooctanoate
Blood Analysis
GC

There's a world of things we're doing something about

EXP000047
EID713861

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TABLE I

CONCENTRATION OF PERFLUOROOCTANOATE IN BLOOD (a)

Sample				GC Analysis		(b)
PRAL No.	Date Sampled	P.R.No.	Name	Date Analyzed	[C ₈], μ g F/g blood	
81-3517	8/6/81	-	[REDACTED]	8/11/81	0.043	
81-3520	8/10/81	-		8/12/81	0.098	
81-3521	8/10/81	-		8/12/81	0.33	

- (a) Analysis as described in Lab Method ES-567 ("Determination of Perfluorooctanoic Acid in Blood, Gas Chromatographic Method", S. Stafford, 4/3/81), using the packed column GC analysis with perfluoro-n-octanoic acid as calibration standard.
- (b) Although the analysis is specifically for perfluorooctanoate (acid or salts), concentrations are given in ppm fluorine for comparison with the results of total organic fluorine analyses. (ppm F = 0.688 x ppm perfluorooctanoic acid) Estimated uncertainty is $\pm 10\%$ relative standard deviation. The lower limit for quantitation is 0.007 μ gF/g. The detection limit is ~ 0.004 μ gF/g, but concentrations in that range cannot be well quantitated and are reported as < 0.007. None detected (n.d.) is reported for samples with [C₈] $\lesssim 0.004$ ppm, which cannot be distinguished from reagent background.

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