

Method Development and Measurement of Perfluorinated Compounds in U.S. Chicken Eggs. Jessica L. Reiner, Shoji F. Nakayama, Amy D. Delinsky, Mark J. Strynar, and Andrew B. Lindstrom*

We have found a systematic error in our paper (DOI: 10.1021/es800770f; published on the Web 07/23/2008) that has led us to report PFOS in U.S. chicken eggs at levels that are incorrect.

After careful examination of our data, we conclude that there is little evidence of perfluorooctane sulfonate (PFOS) in these eggs at any concentration above 0.5 ng/g wet weight. The error for PFOS comes from using the transition $499\ m/z \rightarrow 80\ m/z$ to quantify, but not also using the $499\ m/z \rightarrow 99\ m/z$ to confirm the presence of PFOS in these samples. Upon further analysis of our data, we identified a coeluting peak that undergoes the $499\ m/z \rightarrow 80\ m/z$ transition but which does not also produce a consistent $499\ m/z \rightarrow 99\ m/z$ transition that would confirm the presence of PFOS. While we listed the parent \rightarrow daughter transitions and the confirmatory ions in the Supporting Information of the manuscript, we did not systematically confirm that the quantitation ion/confirmatory ion ratio was in the same range for both the standards and the unknown samples.

During the preliminary phase of this work we checked to see if taurodeoxycholate, another recently identified material that also gives a $499\ m/z \rightarrow 80\ m/z$ transition,¹ was present in these samples, and we found that it eluted well after PFOS using the conditions listed in the Methods section. Recent reanalysis of these egg samples using an ion trap time-of-flight mass spectrometer provided evidence that the coeluting PFOS interferent was likely to be a different isomer of taurodeoxycholate. It is likely that a better approach would be to use longer chromatographic run times to achieve separation of target compounds from potential interferents, use of $499\ m/z \rightarrow 99\ m/z$ for quantitation, and monitoring confirmatory daughter ion(s) to ensure that ion ratios for standards and unknowns are consistent.

We have reanalyzed the data for the other compounds listed in the paper, and while there are few samples with measurable concentrations, we believe these data are accurate.

Studies which document the bioaccumulation of the PFCs in certain food webs and the tissue-specific concentration of PFCs in certain organs (e.g., liver) suggest that food may be an important source of exposure for humans. We believe that a commodity-specific approach for the evaluation of individual food items will be a useful method for determining the presence of perfluorinated compounds in diet.

Considering the errors listed above, we have withdrawn this paper from publication.

REFERENCES

- (1) Benskin, J. P. Simultaneous characterization of perfluoroalkyl carboxylate, sulfonate, and sulfonamide isomers by liquid chromatography-tandem mass spectrometry. *Anal. Chem.* **2007**, *79*, 6455–6464.

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