Isolation and characterisation of the oxahomofluorofullerenol $C_{60}F_{17}O.OH$

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We report the isolation and characterisation of the first oxahomofluorofullerenol $C_{60}F_{17}O.OH$ (a hydroxyether), from UV irradiation of a toluene solution of $C_{60}F_{18}$ in air. This is formed *via* the S_N2' substitution [1] of a peripheral fluorine by OH, followed by insertion of oxygen $\alpha\beta$ to the hydroxy group. No product is obtained if the reaction is performed under argon. Evidence will be presented that the structure is a particularly stable one and can be produced under quite different conditions.

The structure was determined from both EI mass spectrum fragmentation pattern and from 1 D and 2 D ^{19}F NMR spectroscopy. Analysis of these latter enabled the specific location of all of the fluorines to be assigned.

[1] A. G. Avent, A. K. Abdul-Sada, B. W. Clare, D. L. Kepert J. M. Street and R. Taylor, submitted.