CORRESPONDENCE

The Use of Nearly Neat $^{16}O^{18}O$ in Spectroscopic Studies of Oxyhemerythrin and Oxyhemoglobin[1]

In their interesting article on hemerythrin,[2] Klotz and Kurtz mention the use of nearly neat $^{16}O^{18}O$ in a resonance Raman spectroscopic study of the bonding of O_2 in oxyhemerythyrin, citing unpublished work in a dissertation.[3] Your readers may be interested to learn that a prior study of the O_2 bonding in oxyhemoglobin was carried out with the same $^{16}O^{18}O$ sample, and led to a similar conclusion, i.e., that the O_2 was bonded in such a way that the two oxygen atoms were not equivalent.[4] To the best of our knowledge, this work constituted the first preparation of neat $^{16}O^{18}O$ and its first use in spectroscopy. The work represents a collaboration between the group at Northwestern and my group at Argonne National Laboratory, where the $^{16}O^{18}O$ was prepared by a rather laborious procedure that entailed the intermediate synthesis of ^{18}O-enriched hypofluorous acid.[5]

We have subsequently developed a more convenient synthesis of nearly neat $^{16}O^{18}O$ that makes use of the recently isolated fluoroxysulfate ion,[6,7] SO_4F^-, and we anticipate that this uniquely labeled oxygen molecule will now find application in a variety of spectroscopic measurements.

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