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Thiolysis of Azo-*bis*-Ebselen: ⁷⁷Se NMR Studies and Products

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Recently, we reported the isolation of ebselenamines from azo-*bis*-ebselens, followed by the corresponding diselenides and become very good multifunctional antioxidants (radical-trapping and hydroperoxide-decomposing antioxidants). Since, the ⁷⁷Se NMR spectroscopy is a very practical tool in the assessment of the oxidation states of the ⁷⁷Se nuclei; therefore, we observed various ⁷⁷Se chemical shifts in our study. Based on combined experiments followed by the traditional ⁷⁷Se NMR spectroscopy and isolation, a mechanism involving diselenides, selenenyl sulfides, unstable diselenides, *N*-thiophenyl ebselenamine and ebselenamine has been investigated using PhSH and H₂O₂. Ebselenamines quenched lipidperoxyl radicals and exhibited very good glutathione peroxidase-like activity.