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## **Supplemental Information**

Mass Spectrometry Data

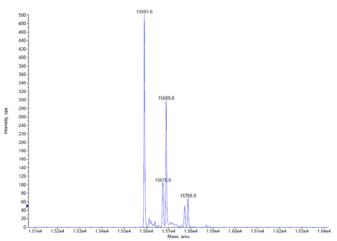
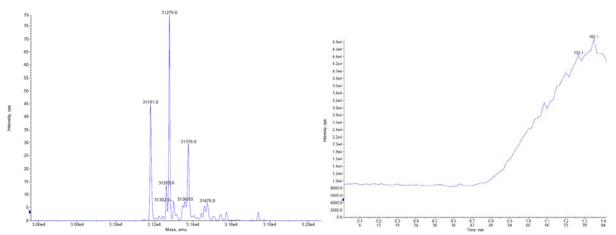


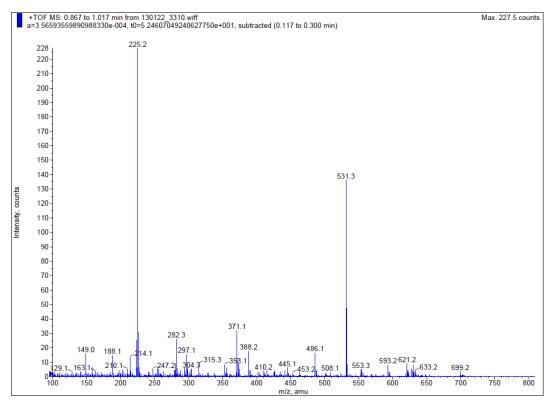
Figure SI 1. Deconvoluted mass spectrum indicating native SOD. [M+K+H]<sup>+</sup> = 15591



**Figure SI 2.** Deconvoluted mass spectrum indicating SOD-N<sub>3</sub> (left) and associated LC-MS chromatogram run by desalt column (right).  $[M+4H]^+$  = 31279 (ionization cleaves the cross-linker C<sub>Ar</sub>-N bond)

ATKAVCVLKGDGPVQGTIHFEAKGDTVVVTGSITGLTEGDHGFHVHQFGDNTQGCTSAGPHFNPLSKKHGGPKDEER HVGDLGNVTADKNGVAIVDIVDPLISLSGEYSIIGRTMVVHEKPDDLGRGGNEESTKTGNAGSRLACGVIGIAK

Figure SI 3. Peptide sequence for bovine SOD1 from uniprot.org (P00442 SODC\_BOVIN).



**Figure SI 4.** Evidence for two triazoles forming under the phase-directed copper-catalyzed azide-alkyne cycloaddition (PDCuAAC) conditions. Benzyl azide was reacted with alkyne **2** under the conditions of the PDCuAAC reaction. ESIMS calcd for  $C_{32}H_{26}N_8O_4S$  [M+3H]<sup>+</sup>: 621.2, found 621.2.