Supporting information for

Polytriazoles as Copper(I)-Stabilizing Ligands In Catalysis

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Polytriazole-based ligands were studied using cyclic voltammetry. To facilitate CV studies, a water-soluble analog of TBTA was easily synthesized from tripropargylamine and 1,3-azidopropanol (Scheme S1). As shown in Figure 1, cyclic voltammetry experiments showed a dramatic increase, on the order of 300 mV, in the redox potential of Cu(I)/Cu(II) in the presence of this tris-triazolyl amine derivative.¹

Scheme S1. Synthesis of a Water-Soluble Ligand used in CV studies.

Figure 1A. Cyclic Voltammogram of the Cu(I)/Cu(II) couple without any additives.

Figure 1B. Cyclic Voltammogram of the Cu(I)/Cu(II) couple with excess acetonitrile added (control experiment).

Figure 1C. Cyclic Voltammogram of the Cu(I)/Cu(II) couple with equimolar amount of the tris-triazolyl amine ligand added.

Figure 1D. Cyclic Voltammogram of the Cu(I)/Cu(II) couple with equimolar amount of the tris-triazolyl amine ligand added)

Figure 1E. Cyclic Voltammogram of the Cu(I)/Cu(II) couple with equimolar amount of the tris-triazolyl amine ligand added.

1. Tripodal ligands, such as tris-triazolyl amines examined in this study, result in very slow electron exchange rates in the Cu(II)/Cu(I) systems. This effect is likely responsible for the somewhat flat voltammograms. In the same time, it points to the fact that tris-triazolyl amines are indeed tetradentate ligands. For a study of Electron-Transfer Kinetics of Copper(II/I) Tripodal Ligand Complexes see Ambundo, E. A.; Yu, Q.; Ochrymowycz, L. A.; Rorabacher, D. B. *Inorg. Chem.* **2003**, *42*, 5267-5273 and references therein.