

SUPPLEMENTARY INFORMATION

Cd-ion removal using 1,1,1-tris(methyl N-carbodithioic acid)-9-decene extractant: Synthesis, extraction behaviors, and mechanism

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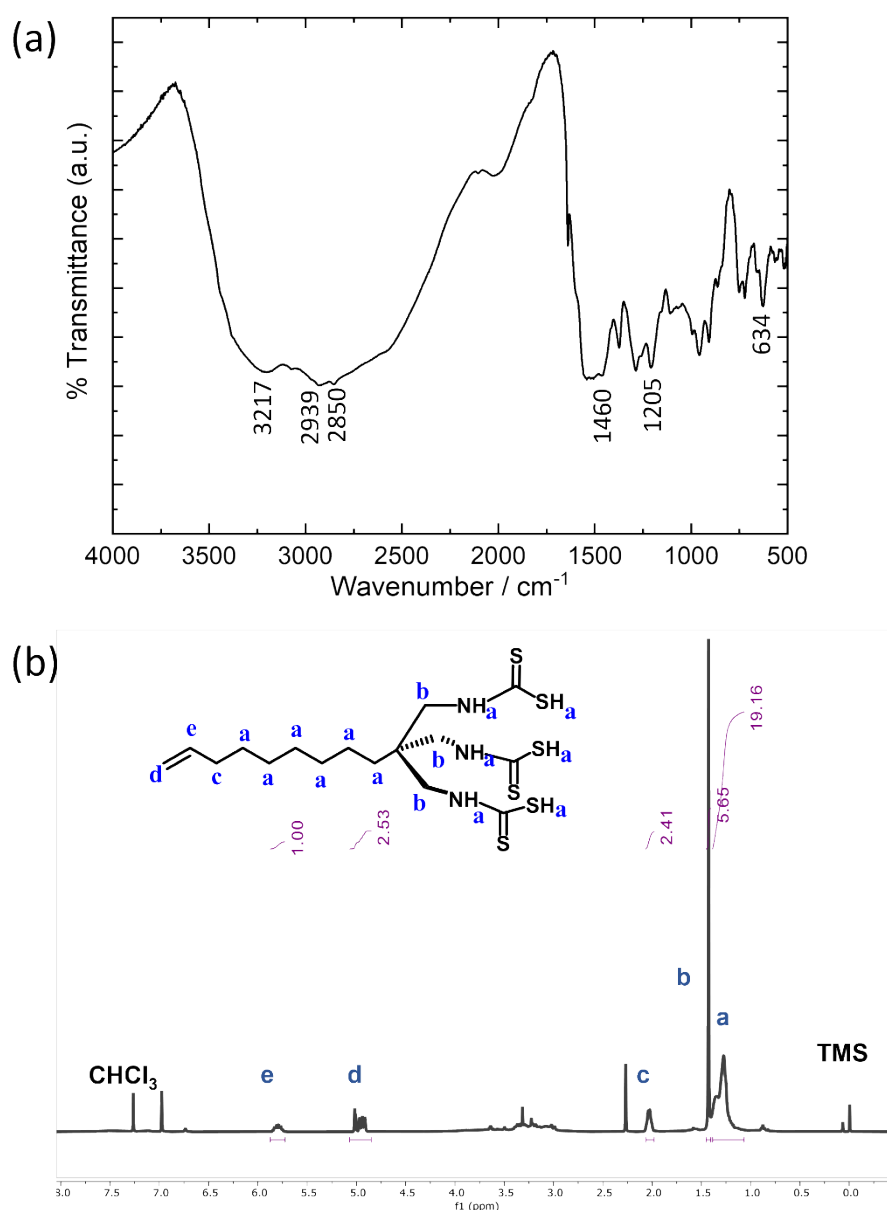


Fig. S1 (a) FT-IR spectra and (b) ¹H-NMR spectra of **TriDTC**

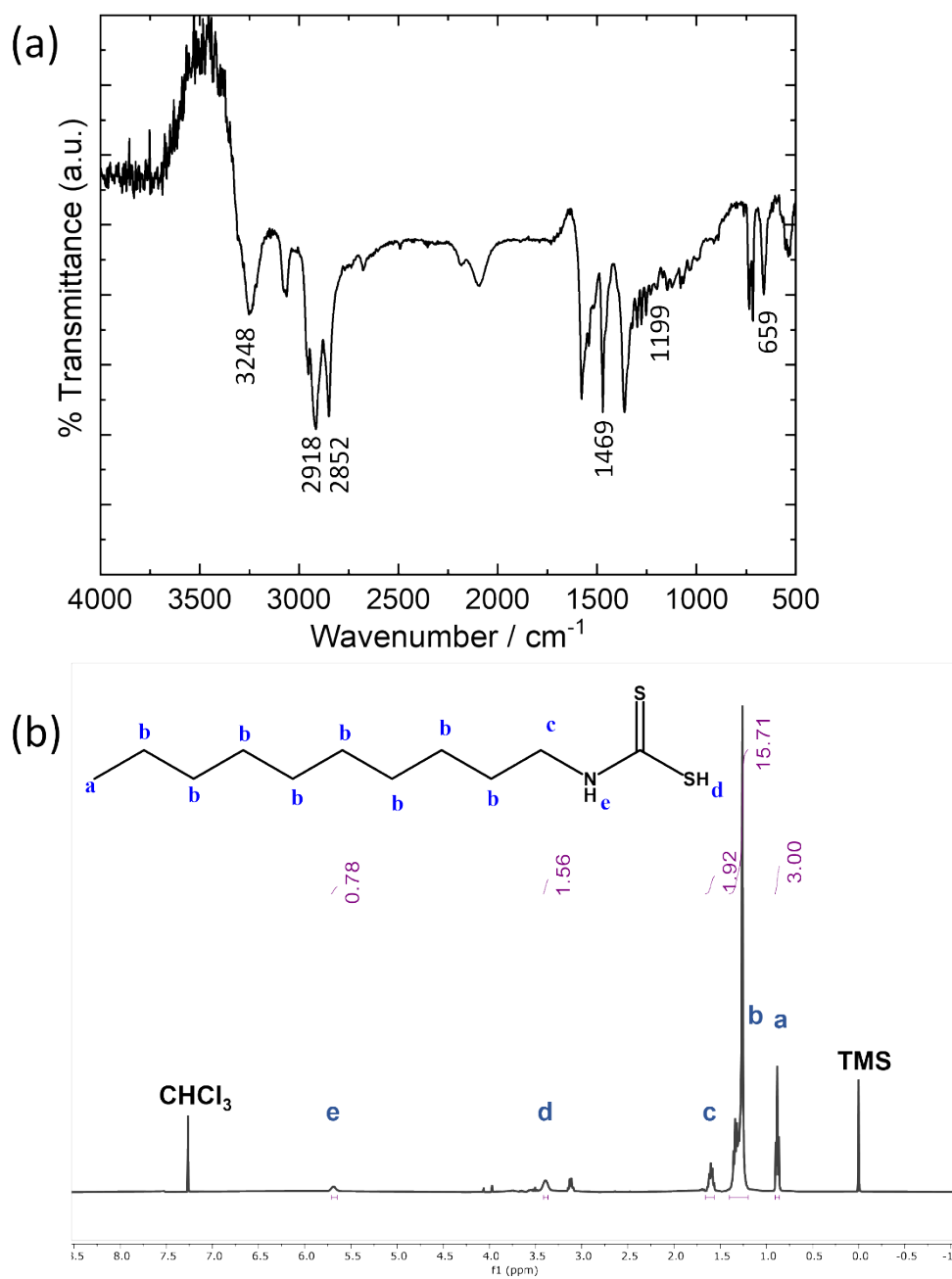


Fig. S2 (a) FT-IR spectra and (b) ^1H -NMR spectra of **MonoDTC**

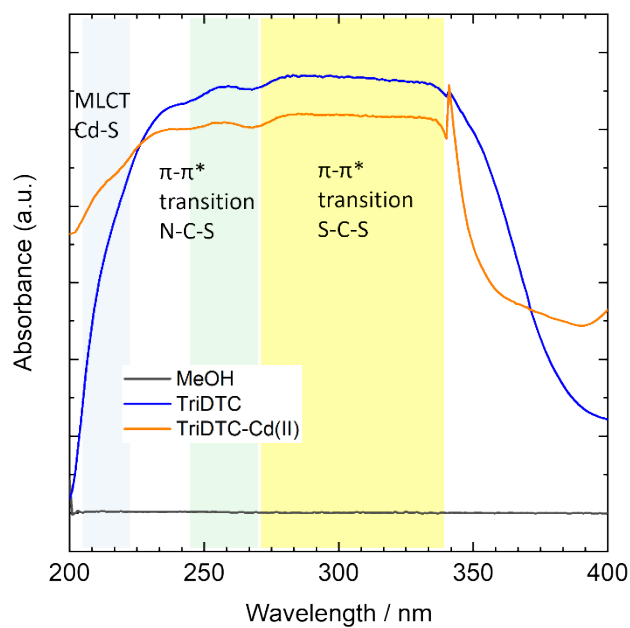


Fig.S3 UV-Vis of **TriDTC** in methanol before and after shaking with Cd(II) ([**TriDTC** in CHCl₃] = 20 mM; [Cd(II)] = 10 mM; pH_e = 2.35)

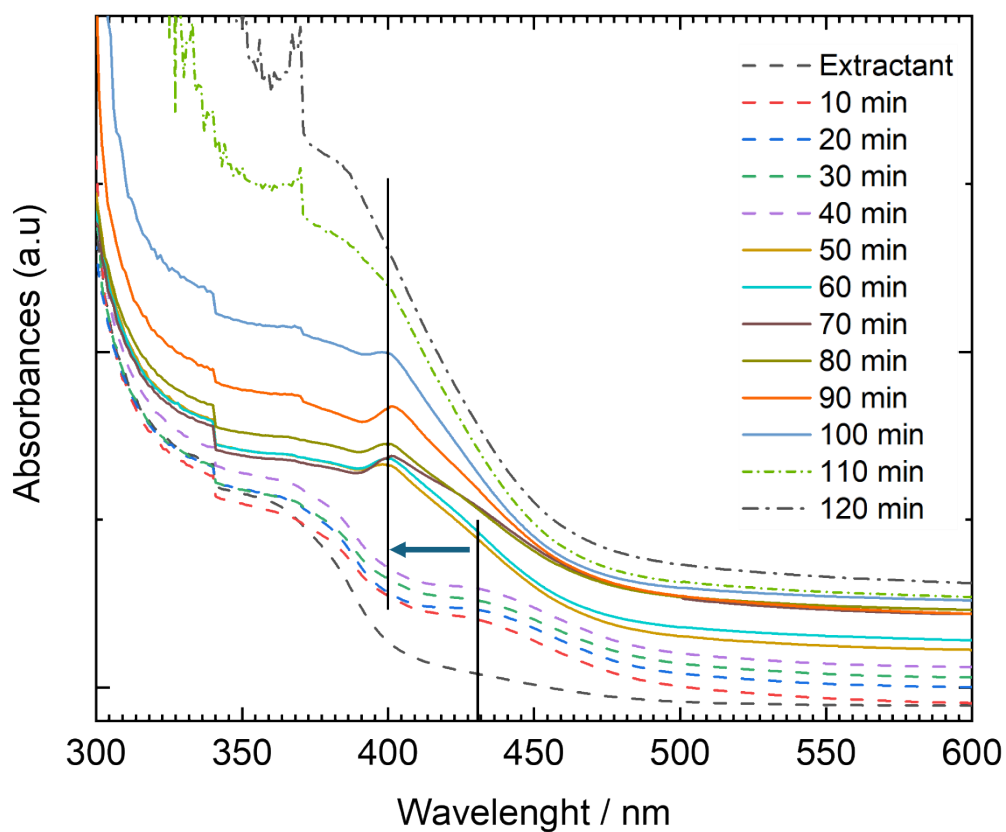


Fig. S4 UV-Vis spectra of Cu(II) extraction with **MonoDTC** with variation in time ([**MonoDTC** in CHCl₃] = 50 mM; [Cu(II)] = 25 mM; pH_e = 3.41; shaking time = 0-120 min at 30 °C)

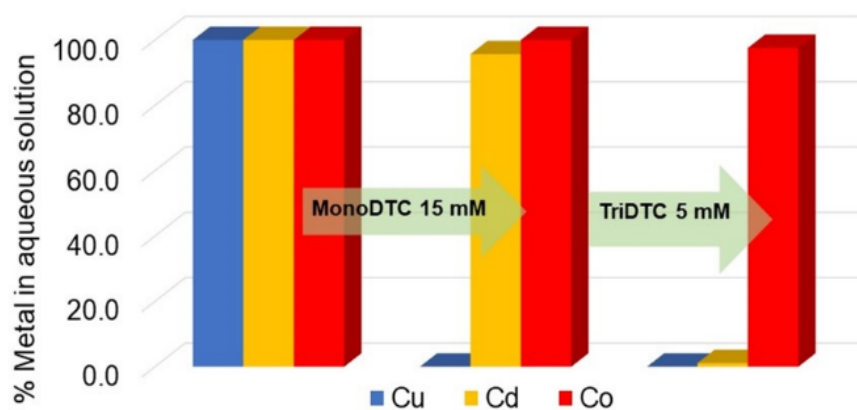


Fig. S5 Stepwise extraction of Cu-Cd-Co with **MonoDTC** and **TriDTC** ([**MonoDTC** in CHCl_3]= 15 mM; [**TriDTC** in CHCl_3]= 5 mM; [Cu(II), Cd(II), and Co(II)]= 0.1 mM; $\text{pH}_e = 1.15$; shaking time= 4 h at 30 °C)