

Supporting Information

Chemistry of heterocyclic-2-thiones: in situ generated 1-(4,5-dihydro-3-alkyl-imidazolidin-2-yl)-3-alkyl-imidazolidine-2-thione and triiodide form novel mixed valent $\text{Cu}^{\text{I-II}}/\text{Cu}^{\text{II}}$ complexes

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1S.ESI-mass spectrum of reaction of $\text{CuI} + \text{imdZSH-Me}$ in CH_3CN

2S.ESI-mass spectrum of reaction of $\text{CuI} + \text{imdZSH-Bu}$ in CH_3CN

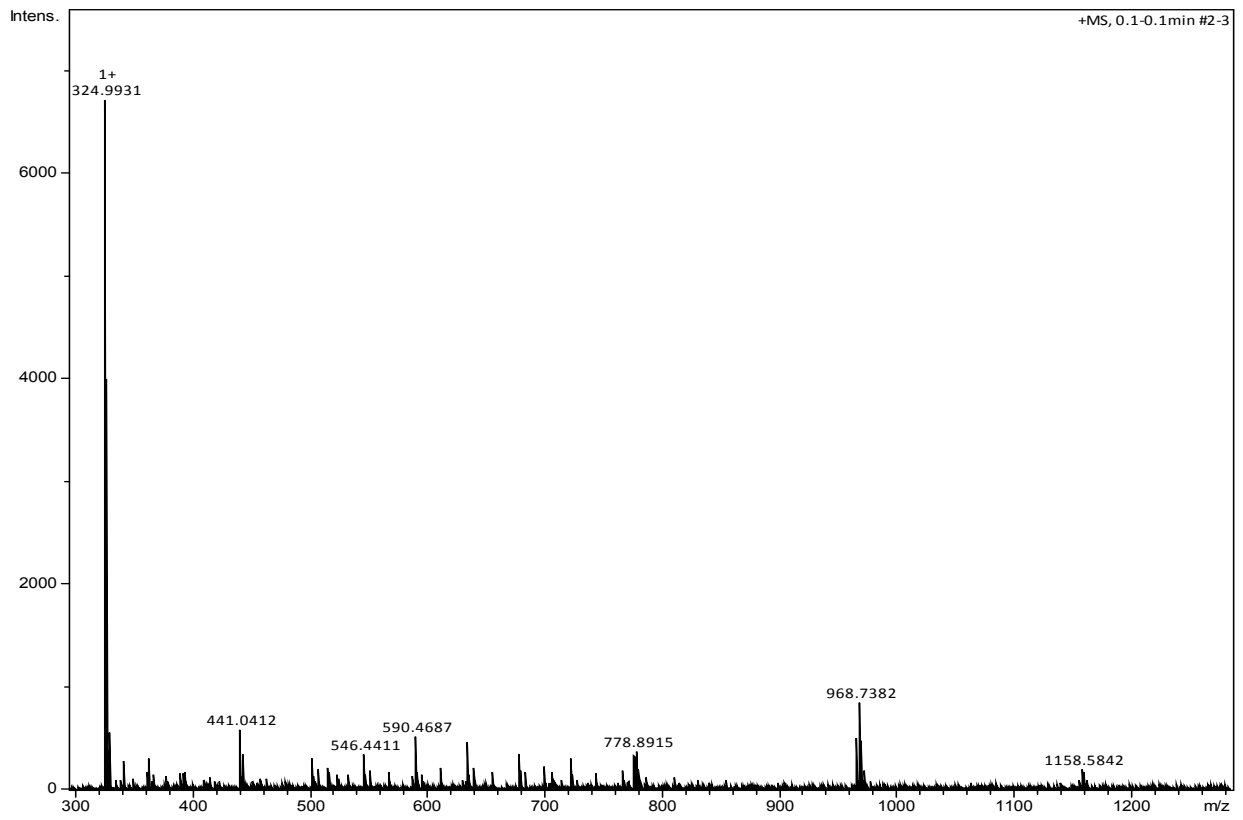


Figure 1S.1 Complete spectrum

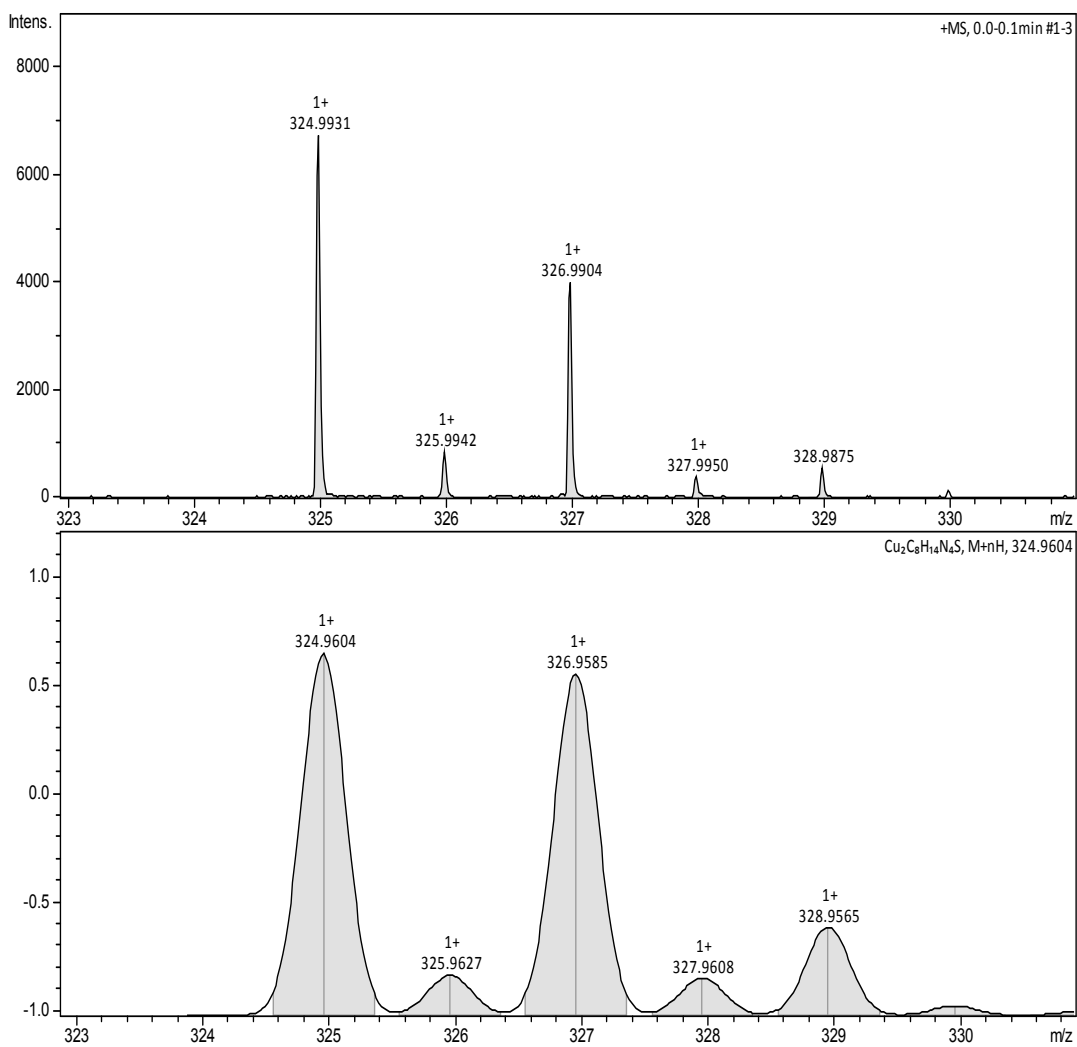
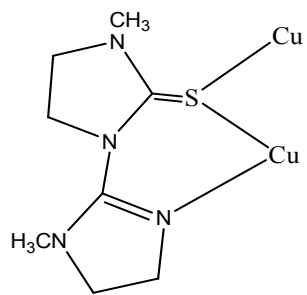


Figure 1S.2. Complex 1, Fragment A.(above experimetal isotopic pattern),

bottom calculated pattern

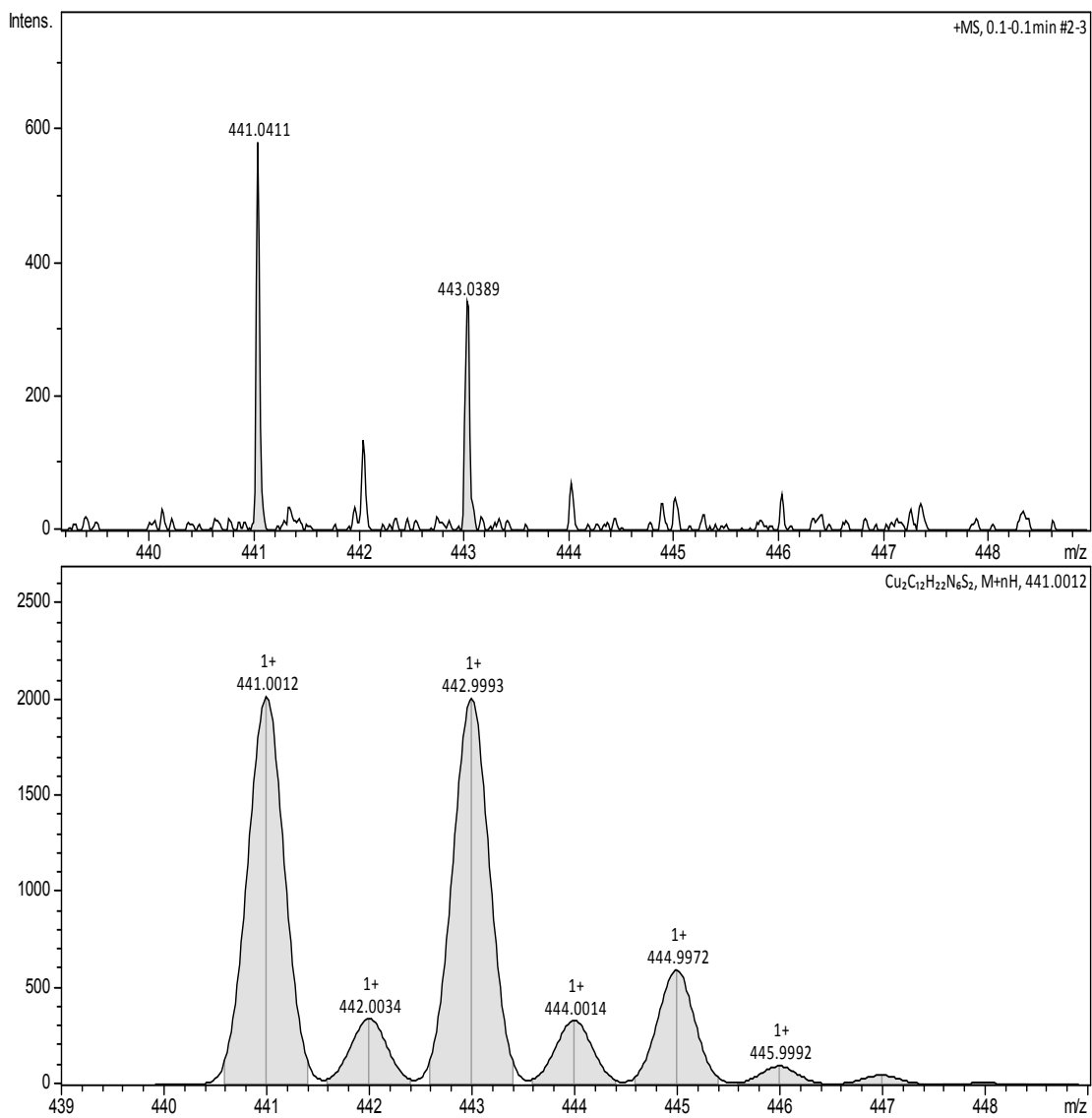
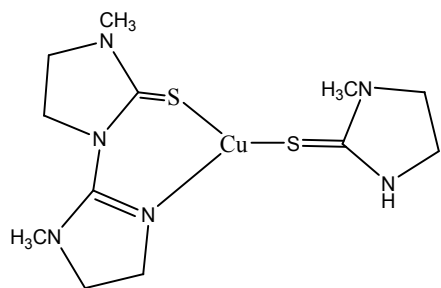


Figure 1S.3. Complex 1, Fragment B.(above experimetal isotopic pattern),

bottom calculated pattern

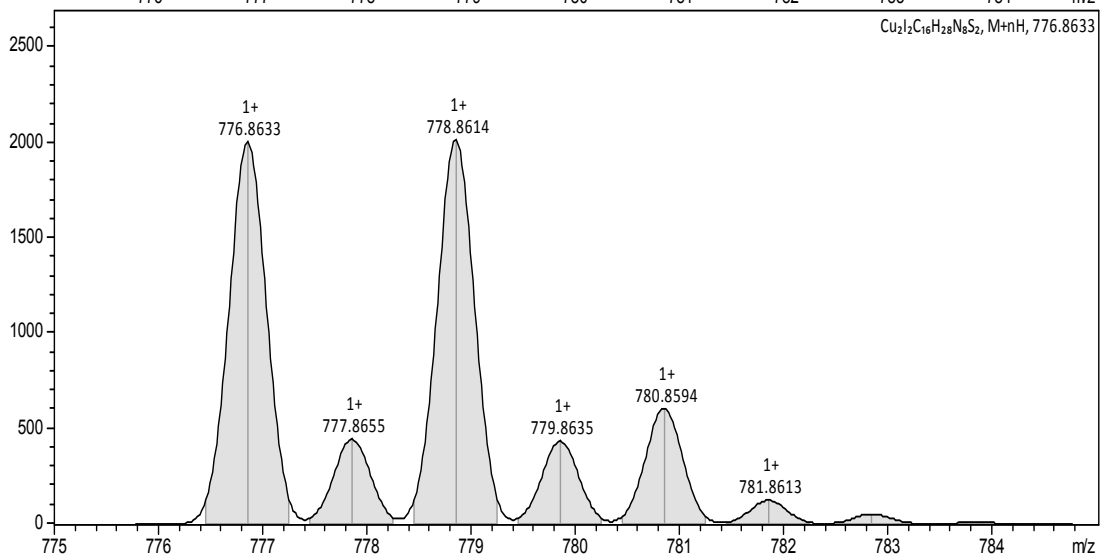
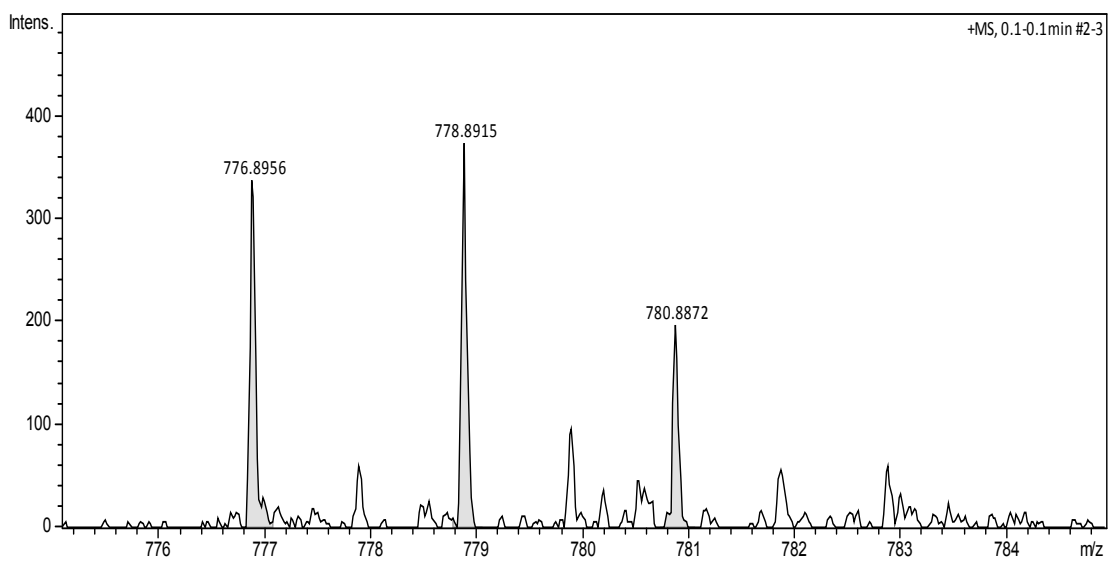
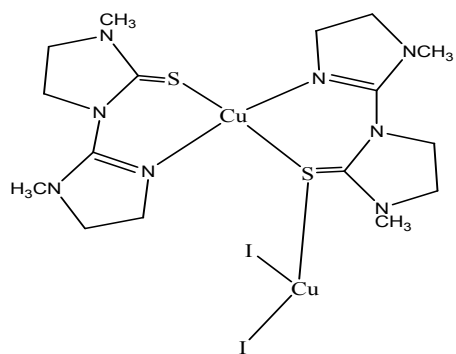


Figure 1S.4. Complex 1, Fragment C.(above experimetal isotopic pattern),

bottom calculated pattern

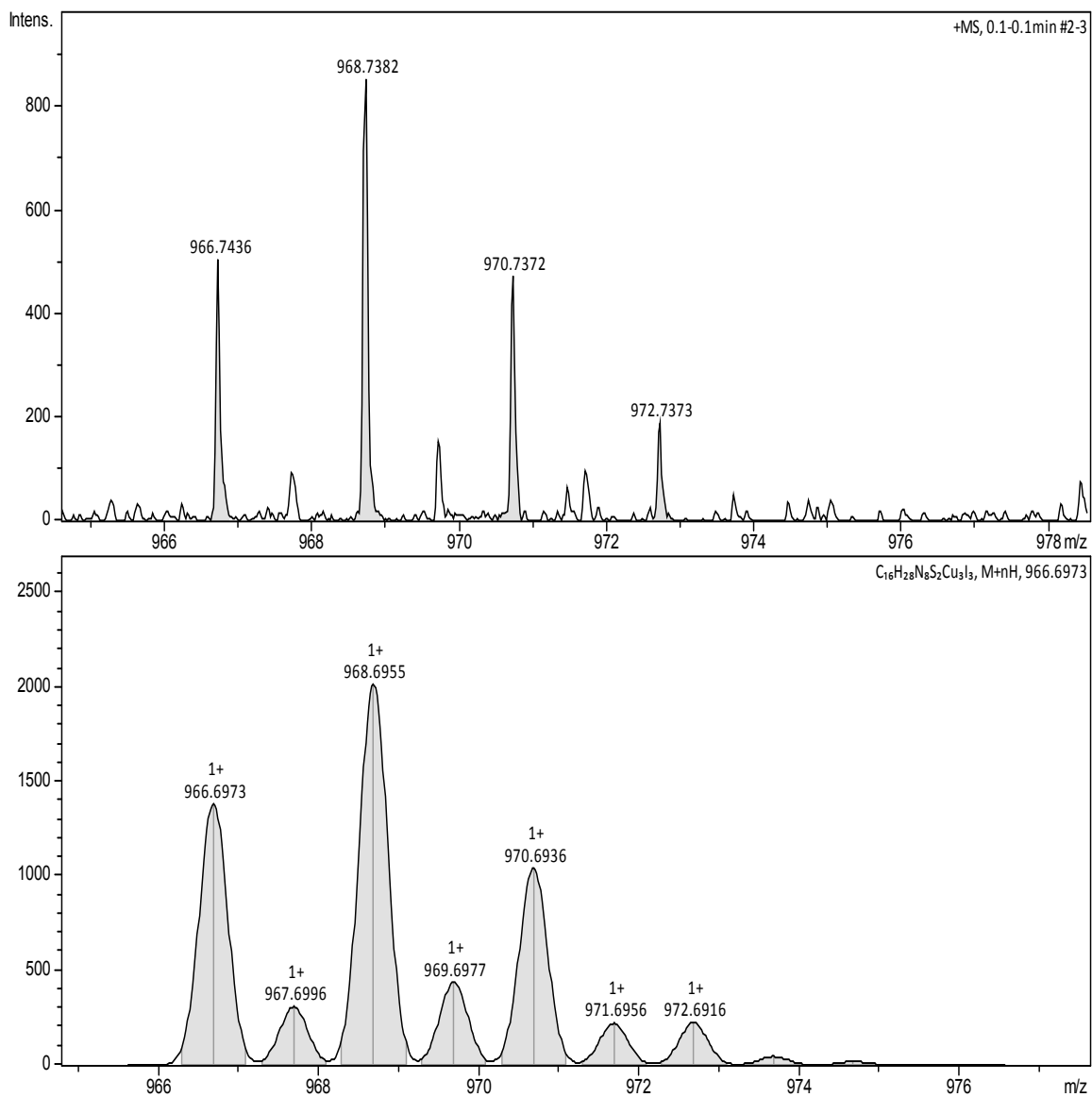
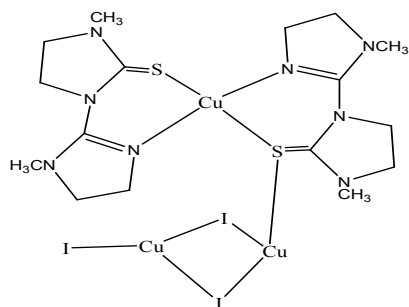
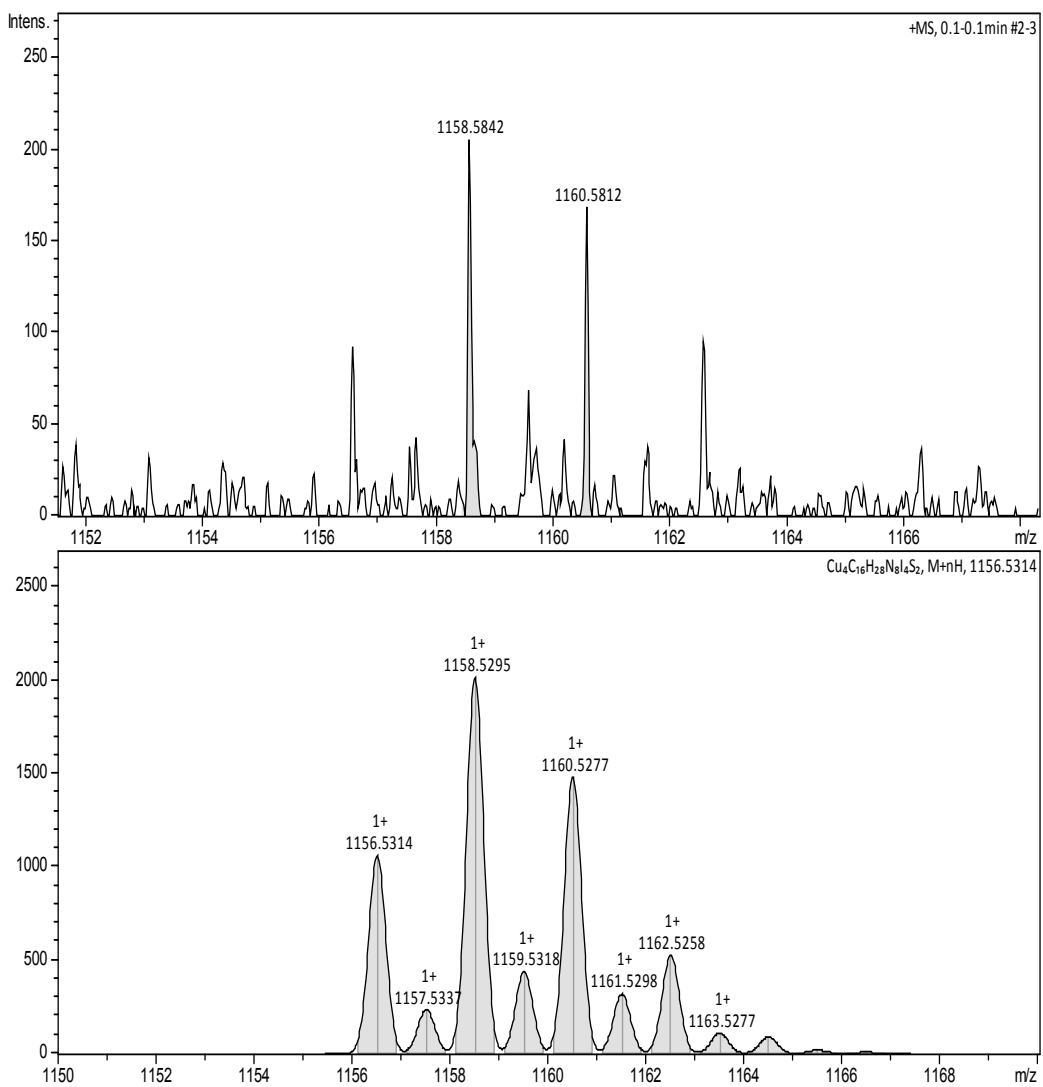
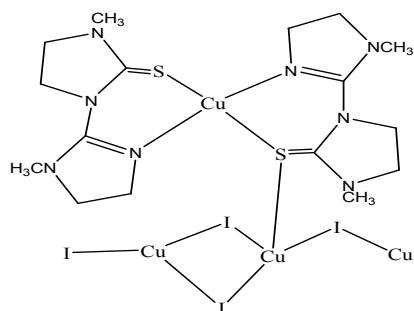


Figure 1S.5. Complex 1, Fragment D.(above experimetal isotopic pattern),

bottom calculated pattern



**Figure 1S.6. Complex 1, Fragment E.(above experimental isotopic pattern),
bottom calculated pattern**

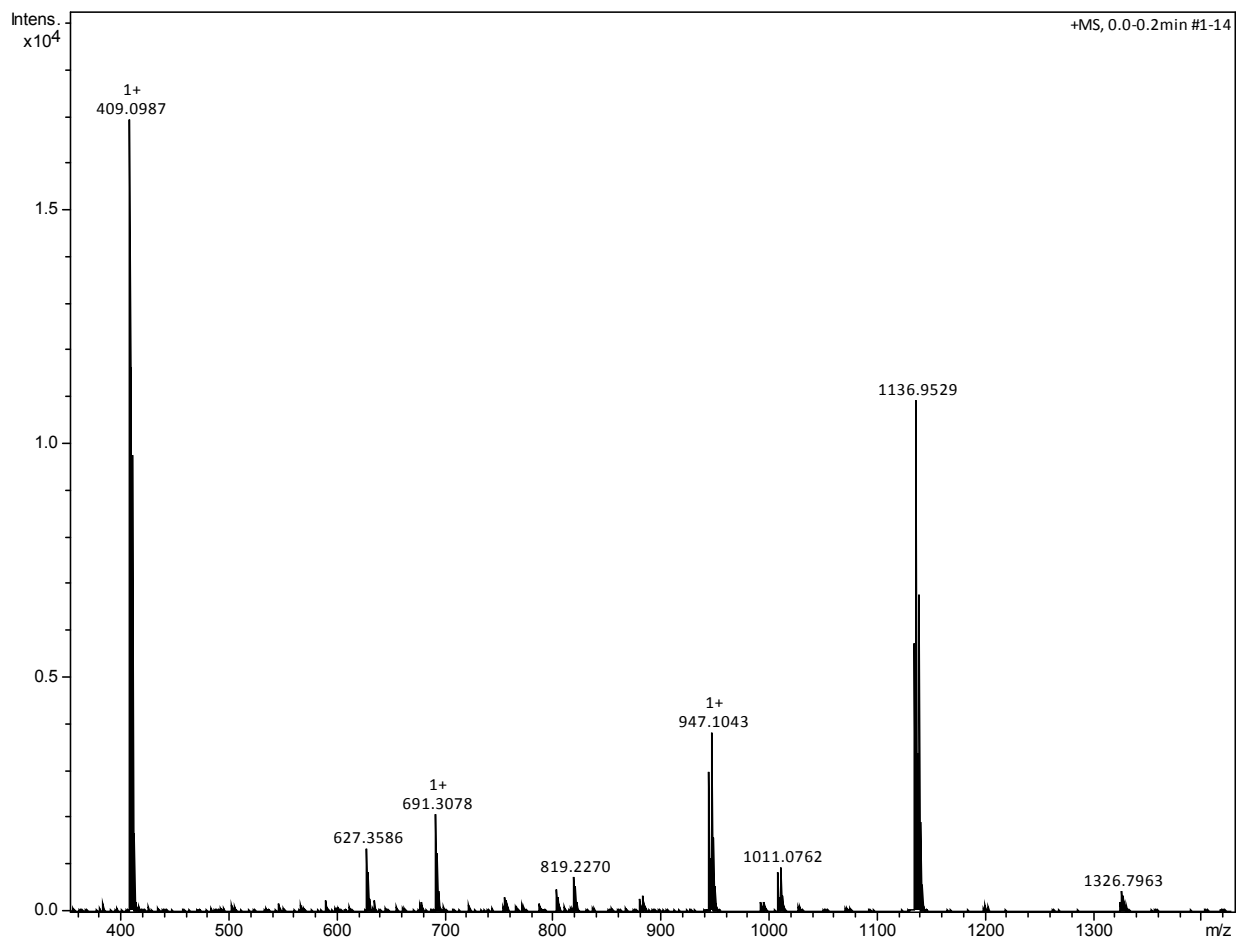


Fig.2S.1. Complete spectrum complex 4

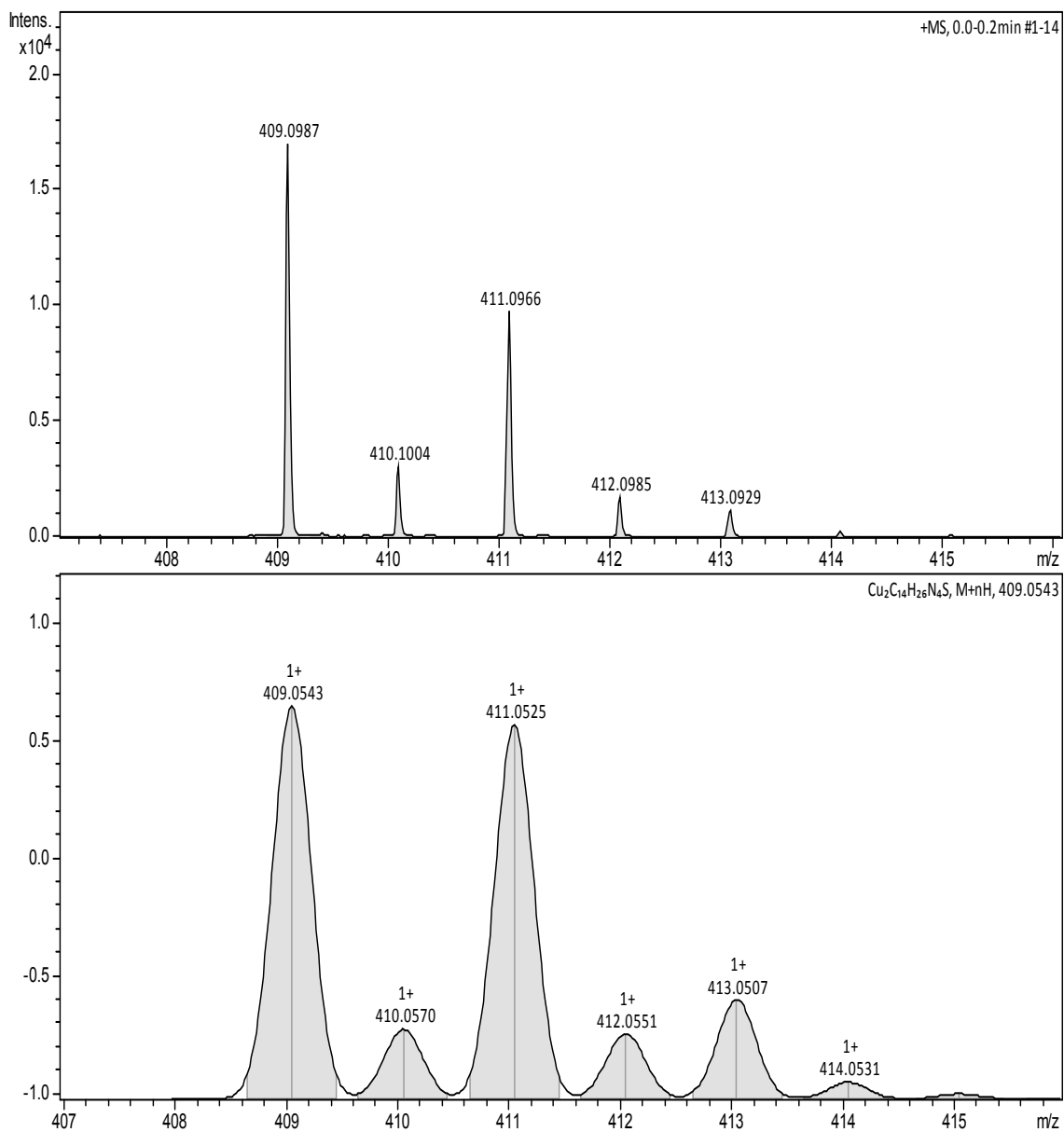
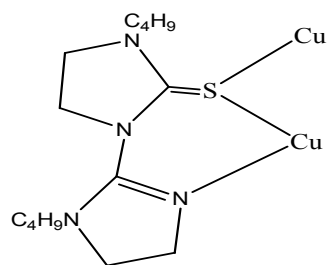


Fig.2S.2. Complex 4, Fragment F.(above experimetal isotopic pattern),

bottom calculated pattern

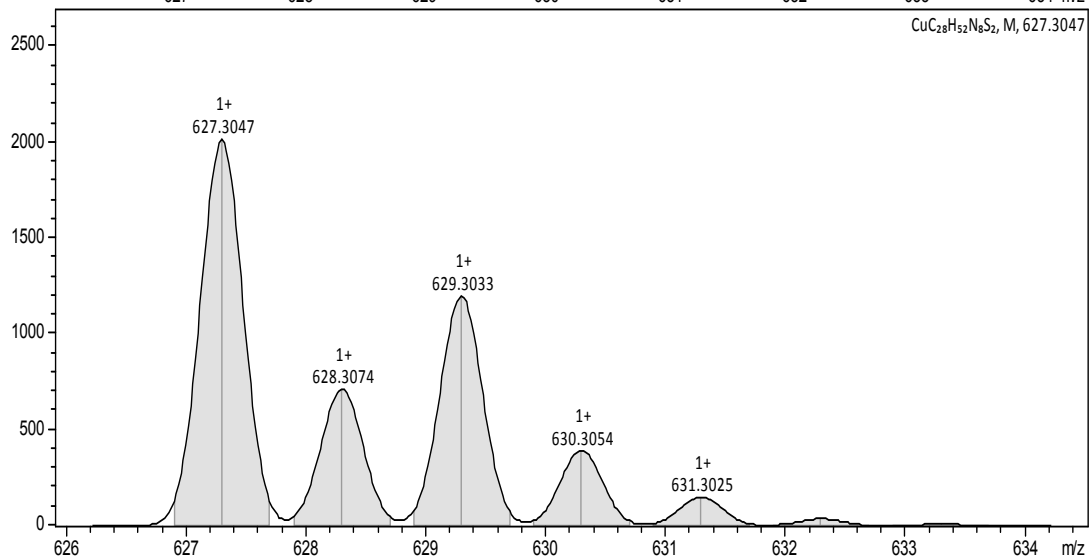
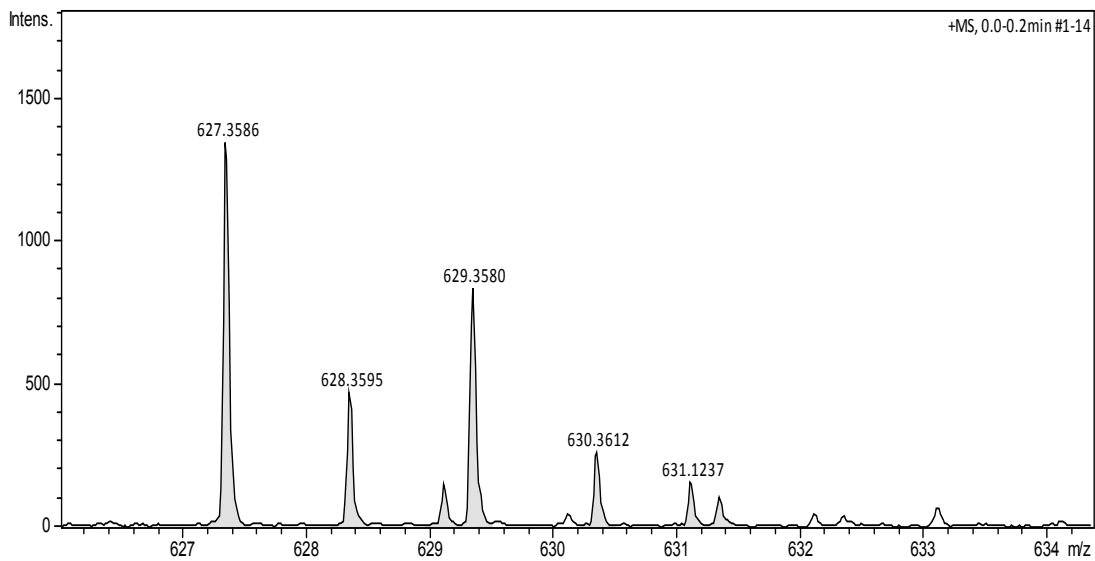
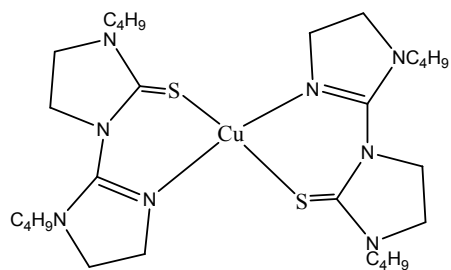


Fig.2S.3. Complex 4, Fragment G.(above experimetal isotopic pattern),

bottom calculated pattern

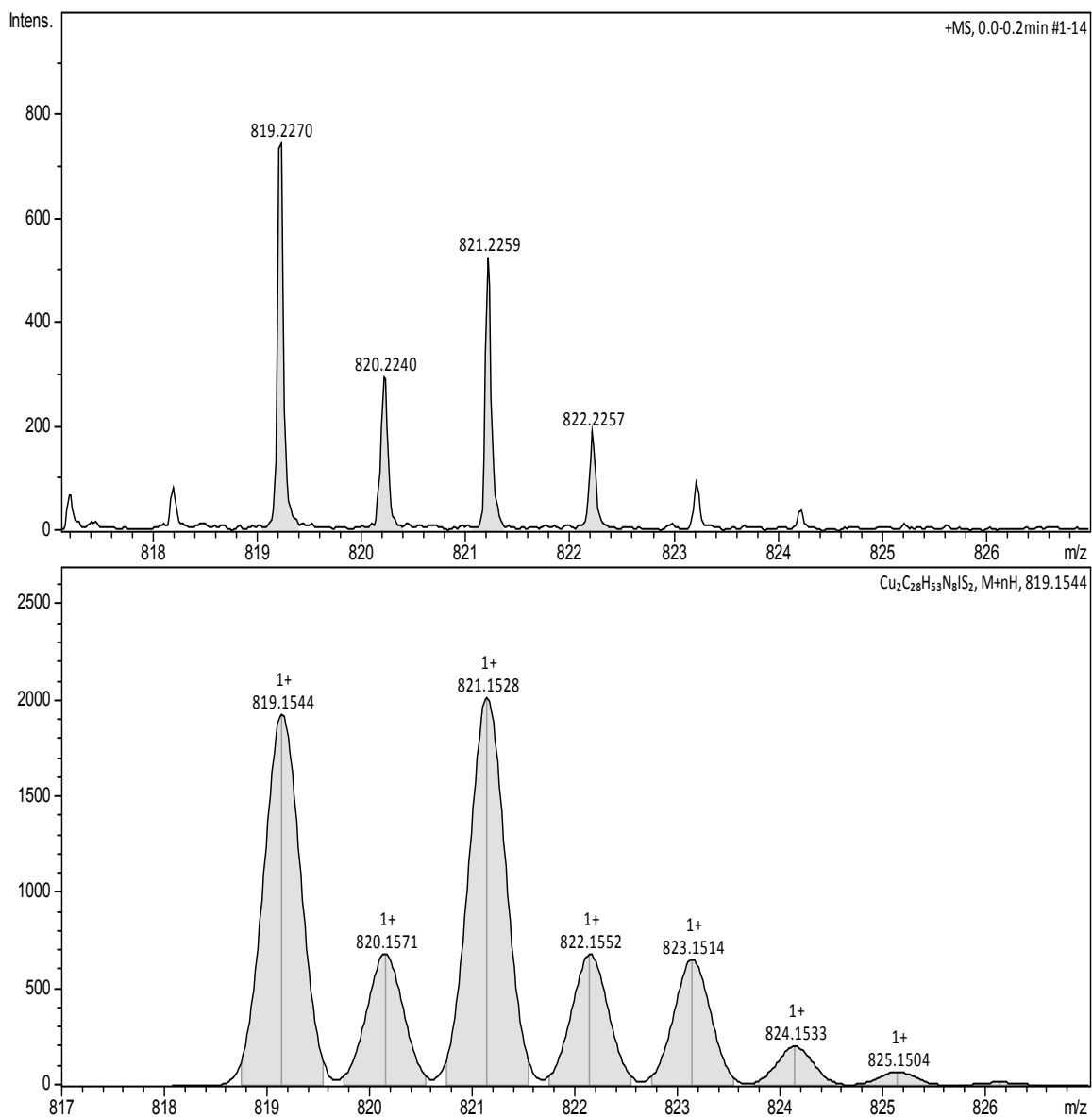
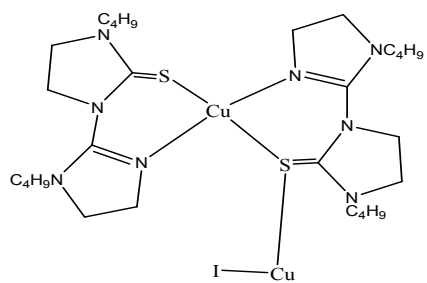


Fig.2S.4. Complex 4, Fragment H.(above experimental isotopic pattern),

bottom calculated pattern

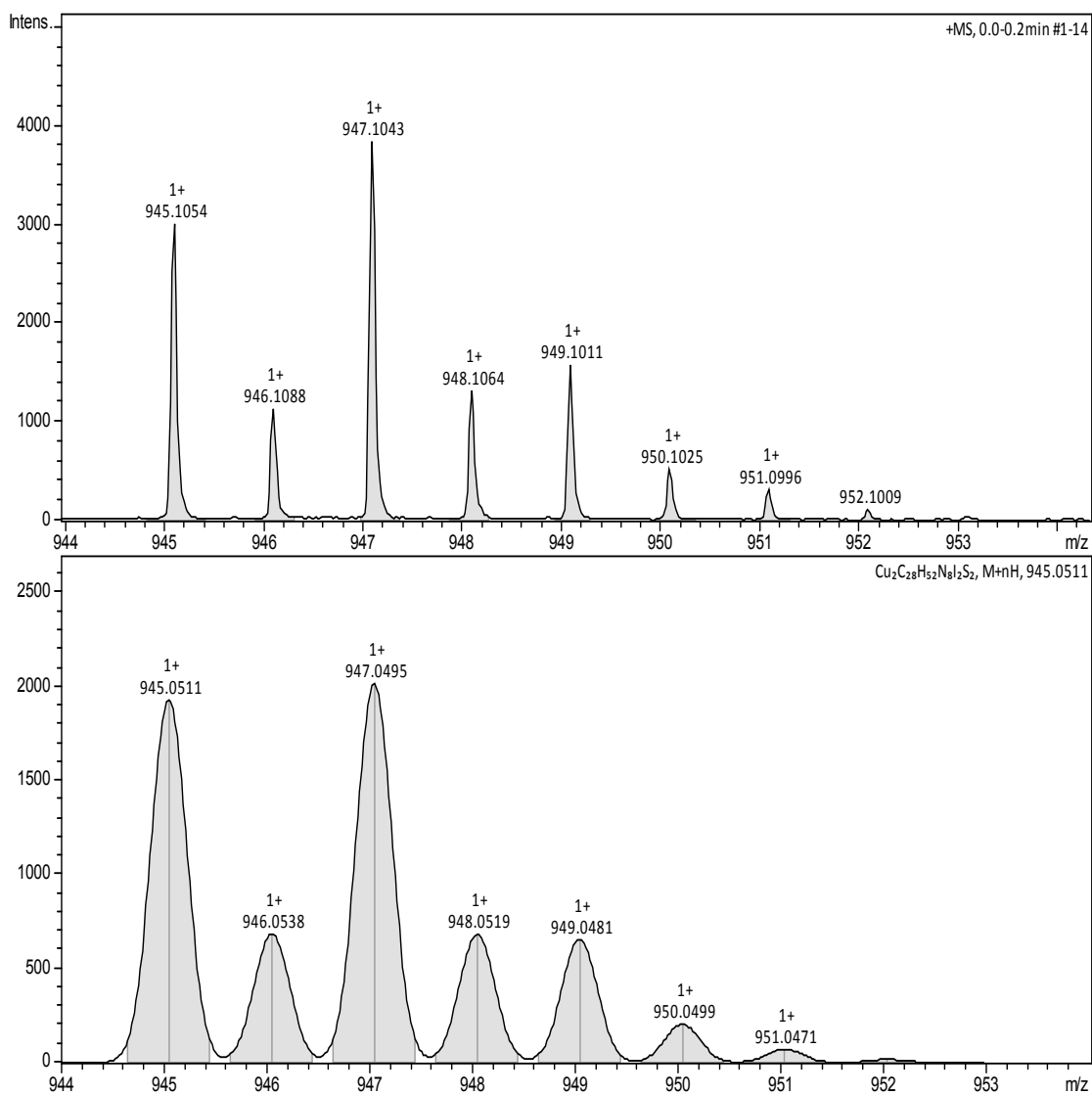
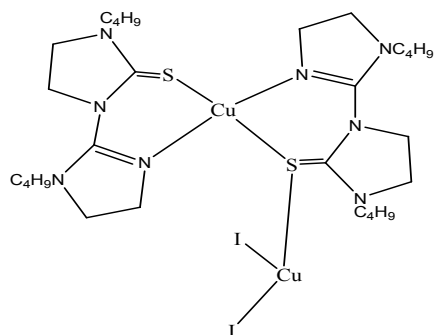


Fig.2S.5. Complex 4, Fragment I (above experimental isotopic pattern),

bottom calculated pattern

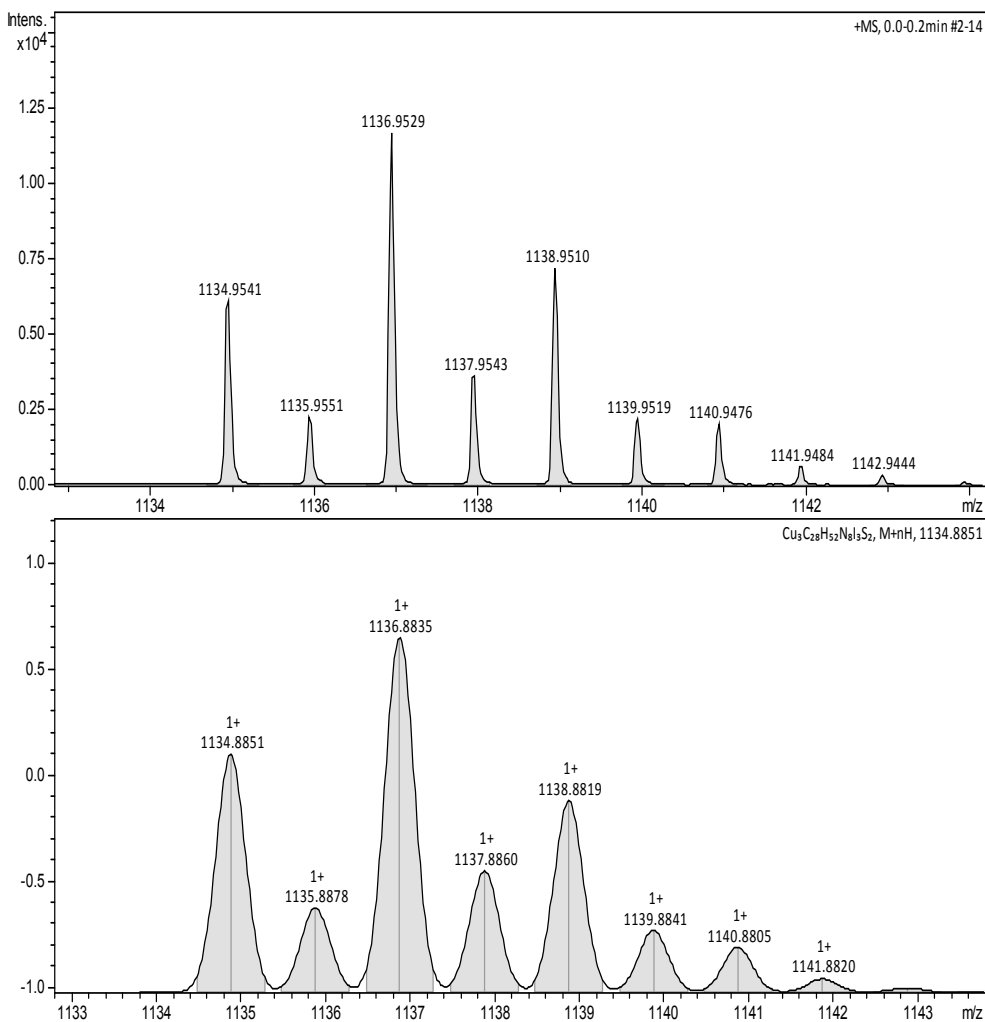
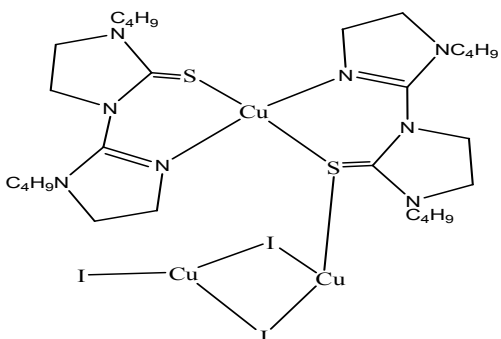


Fig.2S.6. Complex 4, Fragment J (above experimetal isotopic pattern),

bottom calculated pattern

