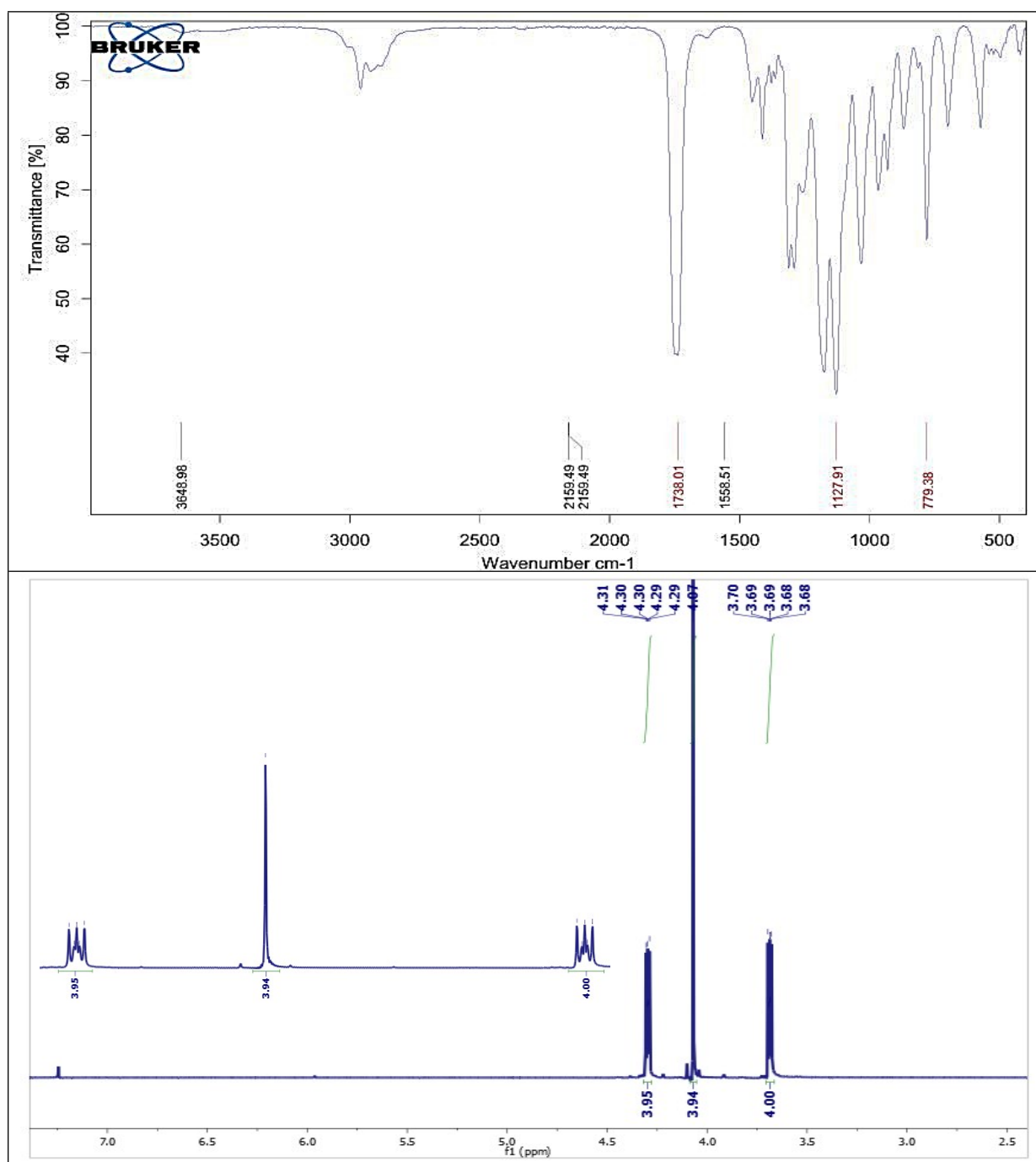


## Supporting information

Figure S1. IR,  $^1\text{H}$ , and  $^{13}\text{C}$  NMR spectra of *Oxybis(ethane-2,1-diyl) bis(2-chloroacetate)* (**2**).



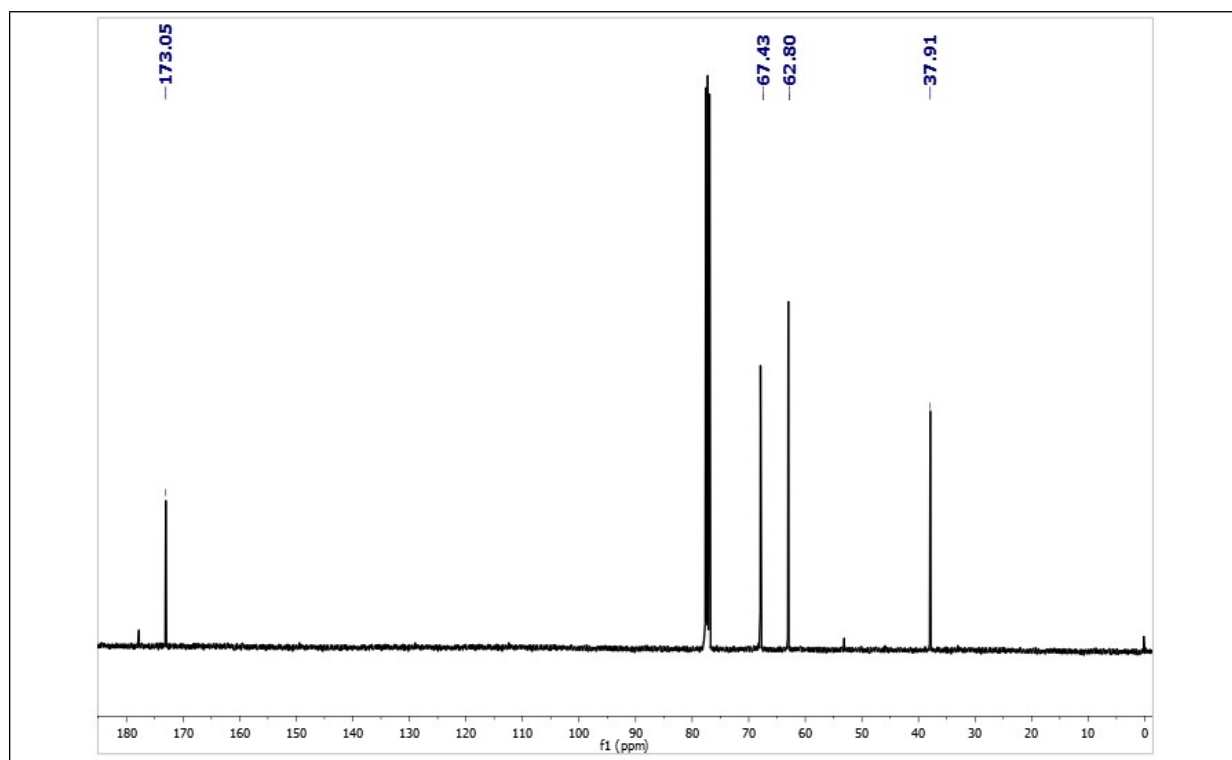
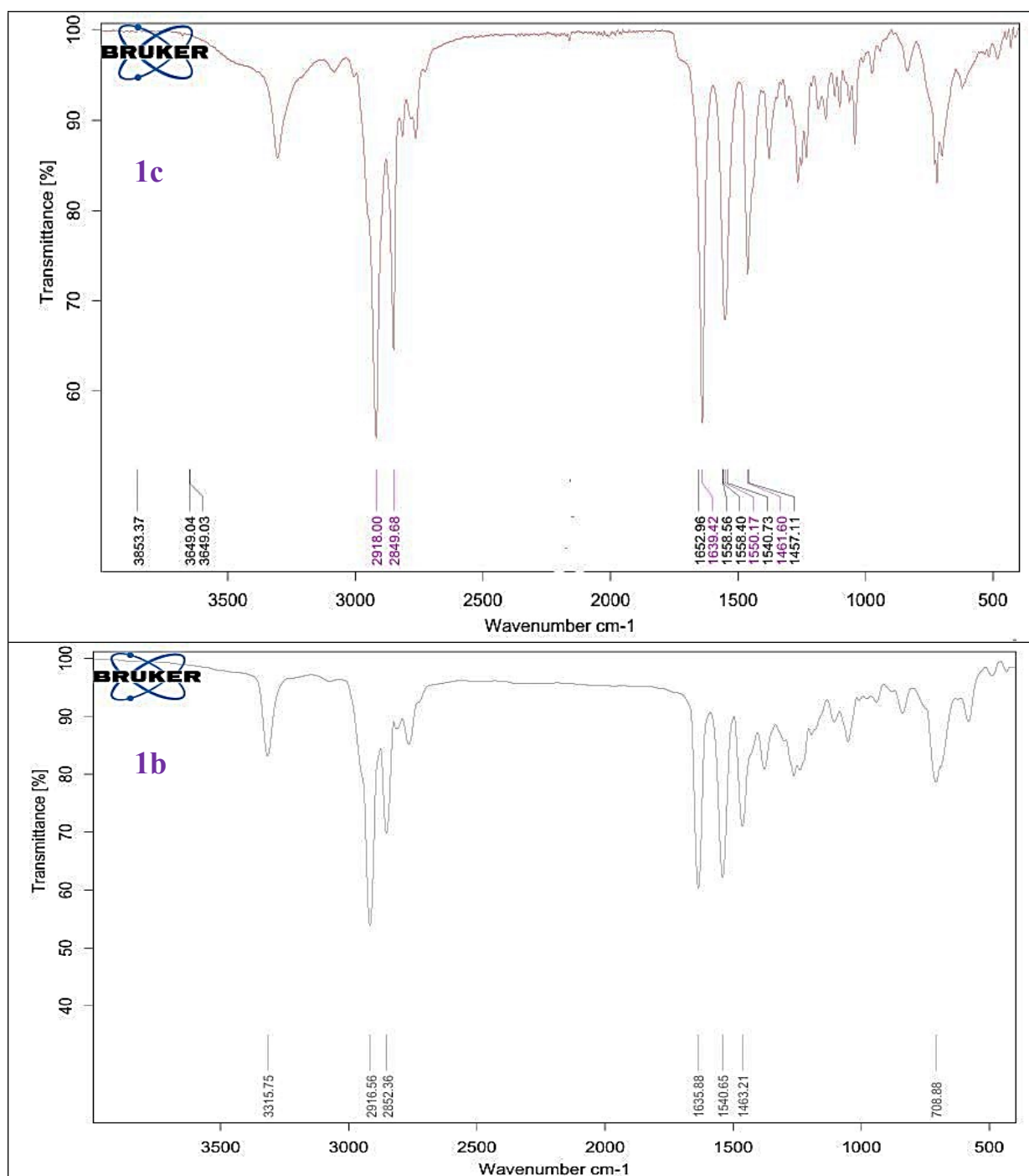
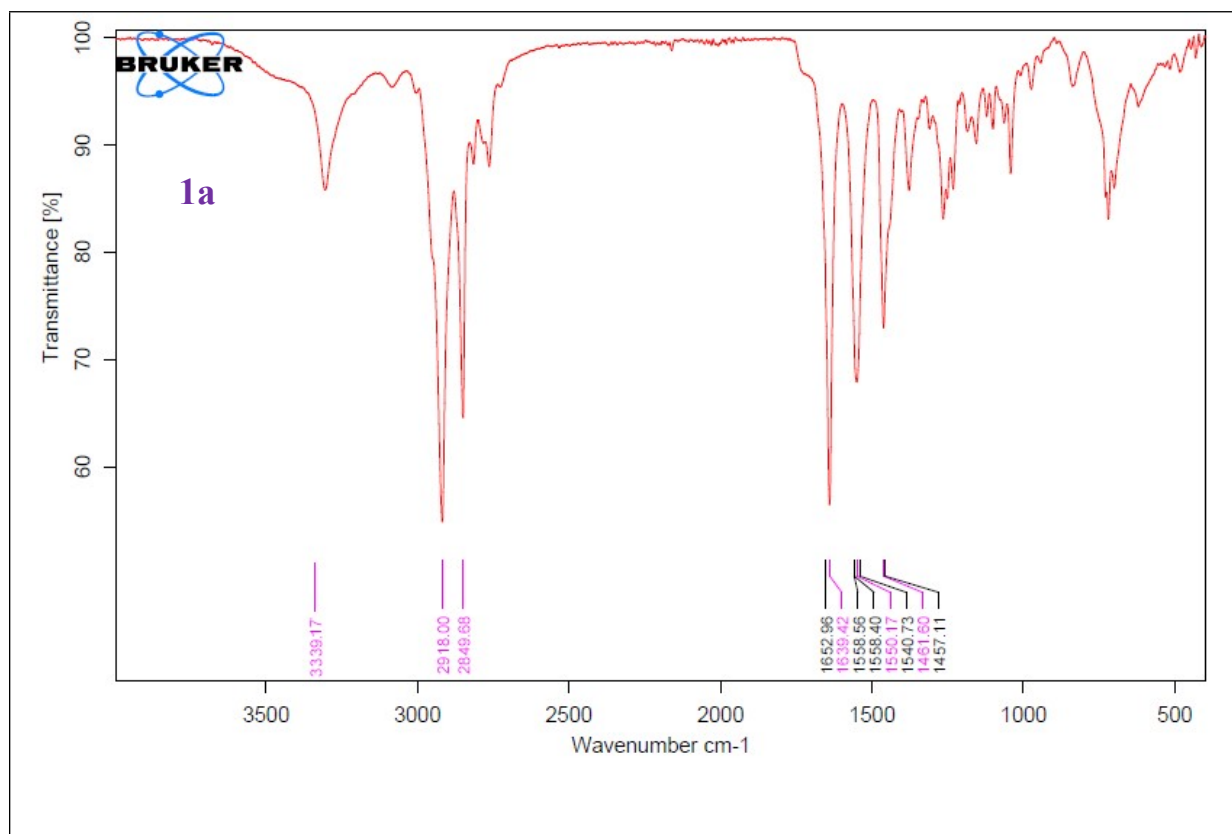
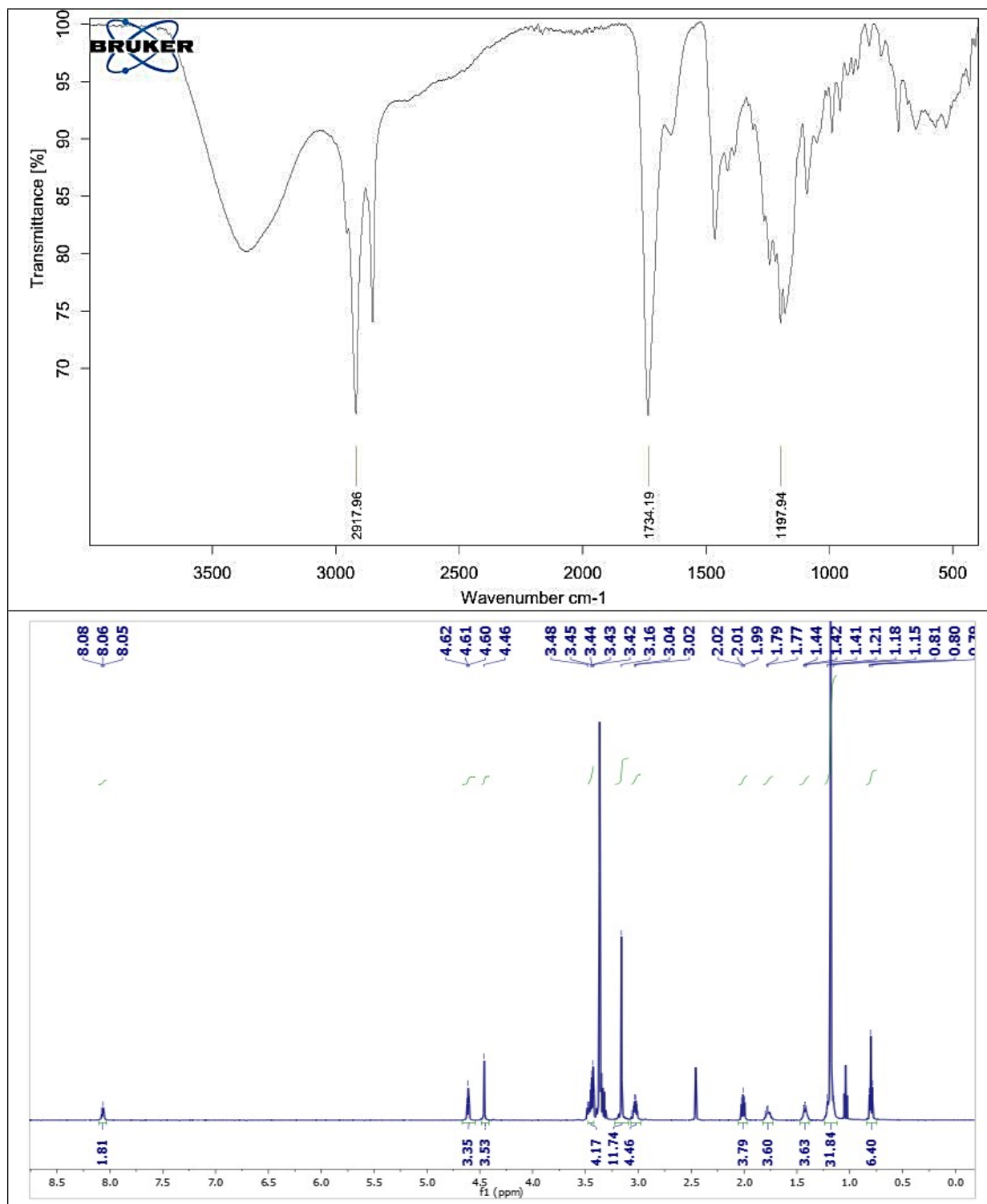


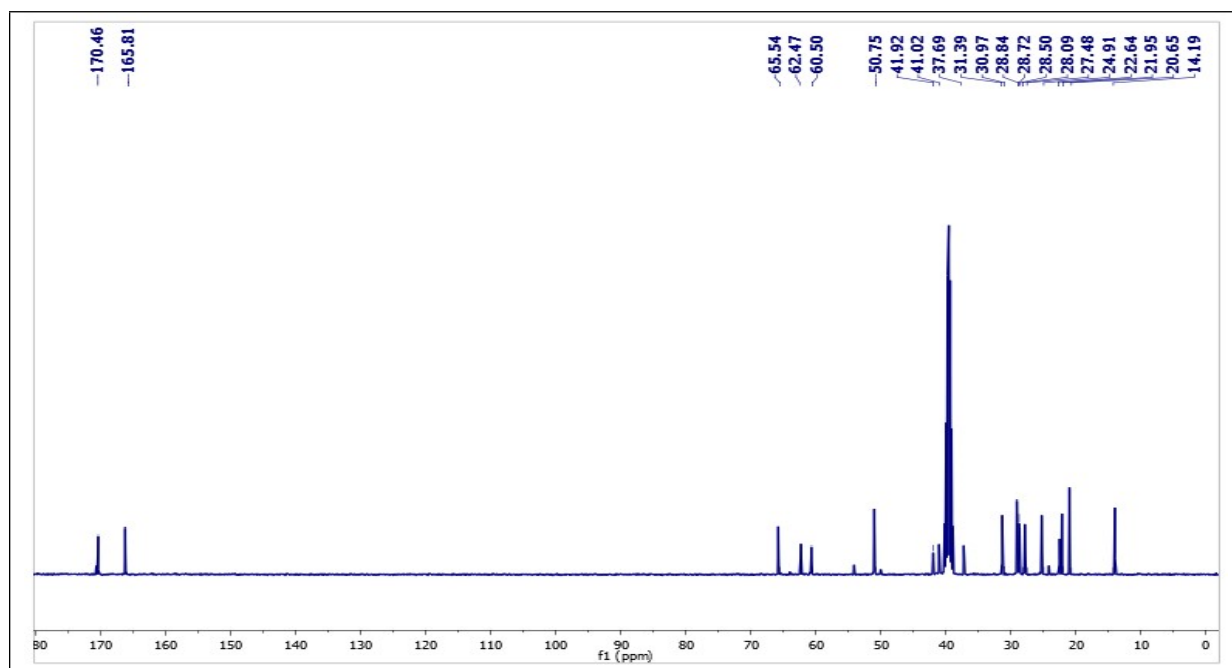
Figure S2. IR spectra of *N*-(3-(dimethylamino)propyl)alkanamide (**1a-c**).



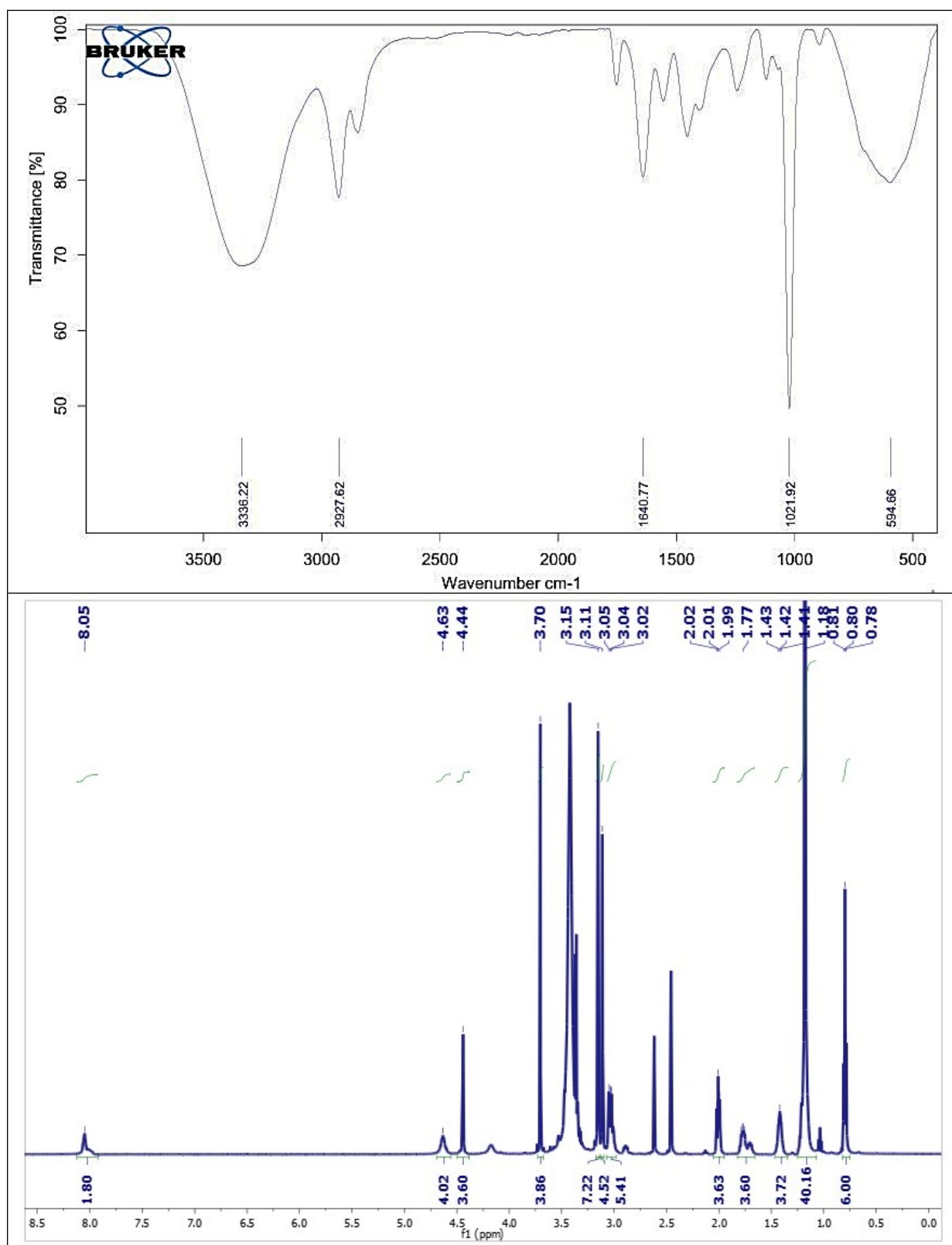


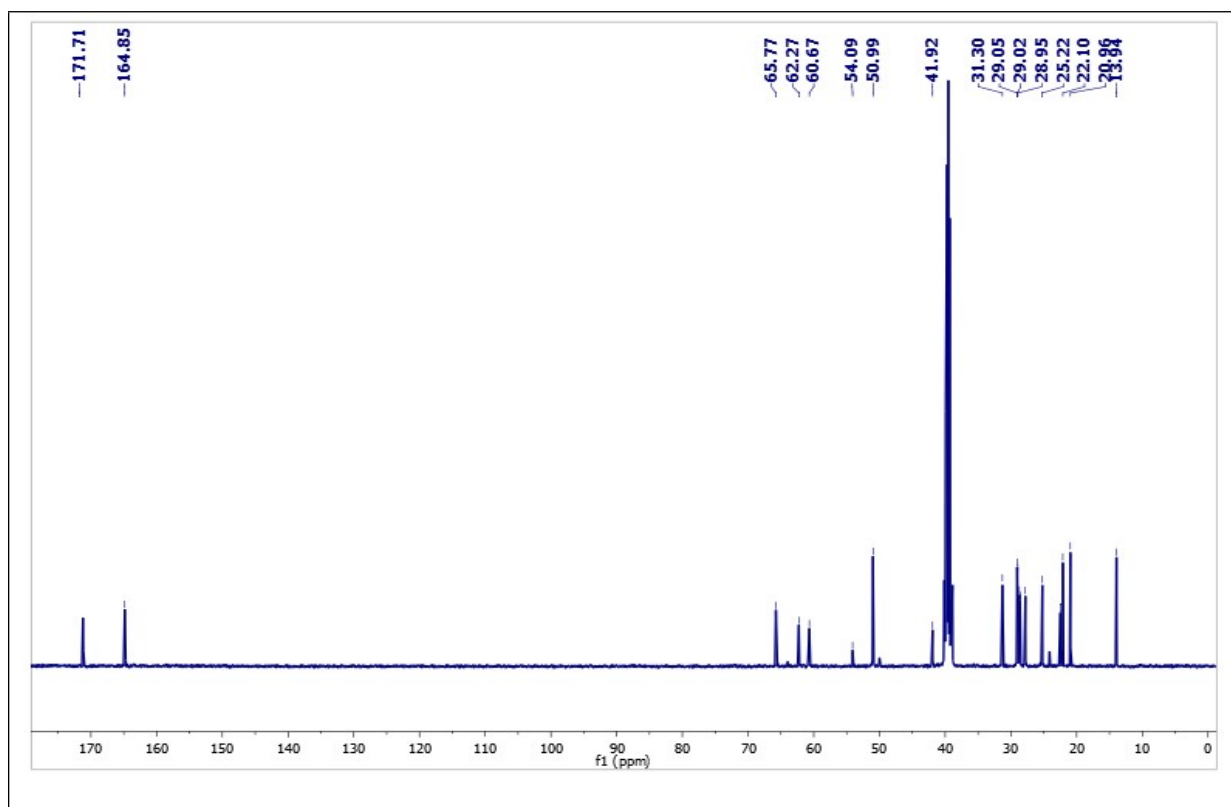
**Figure S3.** IR,  $^1\text{H}$ , and  $^{13}\text{C}$  NMR spectra of *N,N'*-(((oxybis(ethane-2,1-diyl))bis(oxy))bis(2-oxoethane-2,1-diyl))bis(3-dodecanamido-*N,N*-dimethylpropan-1-aminium) chloride(GSE-12).



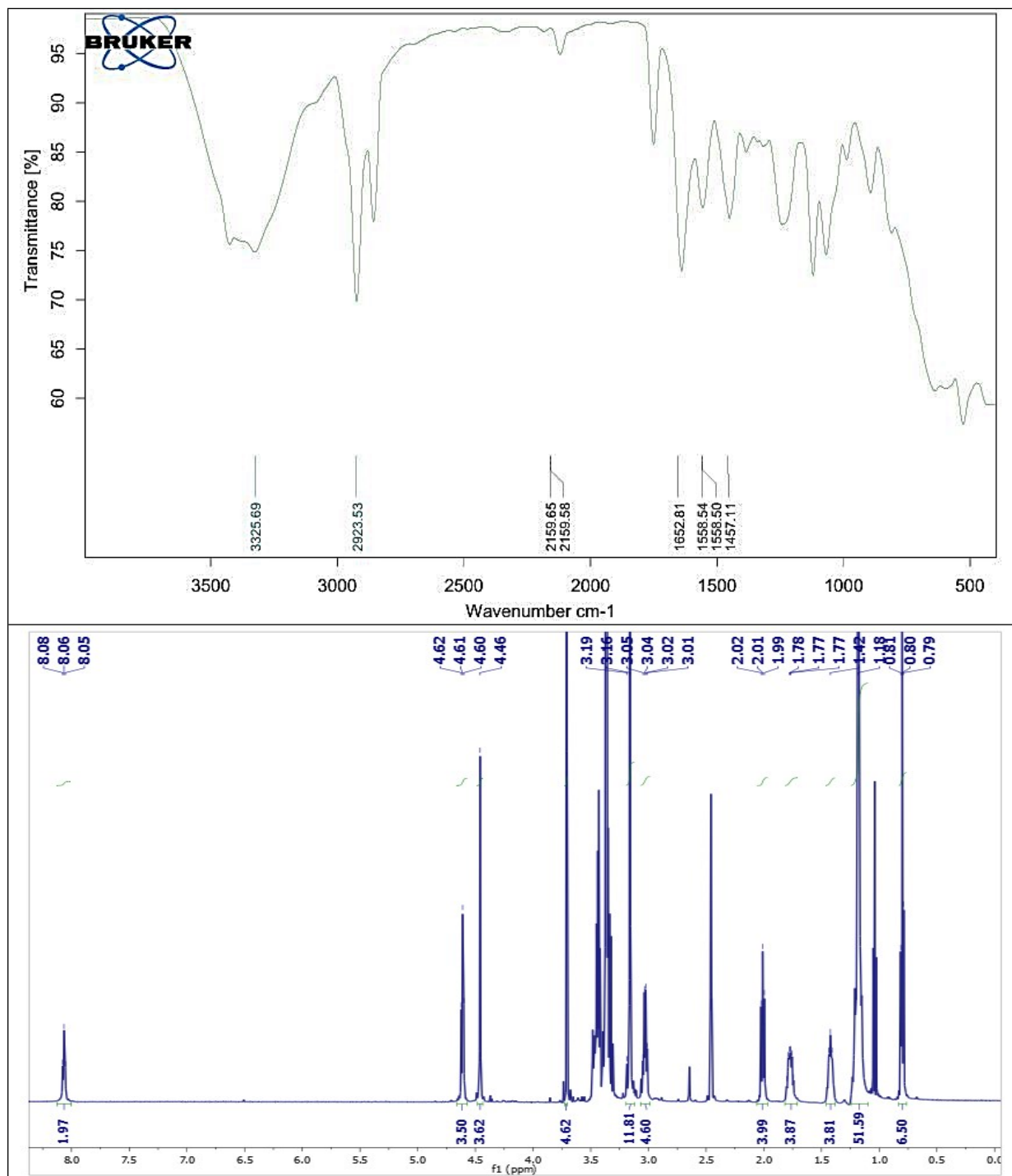


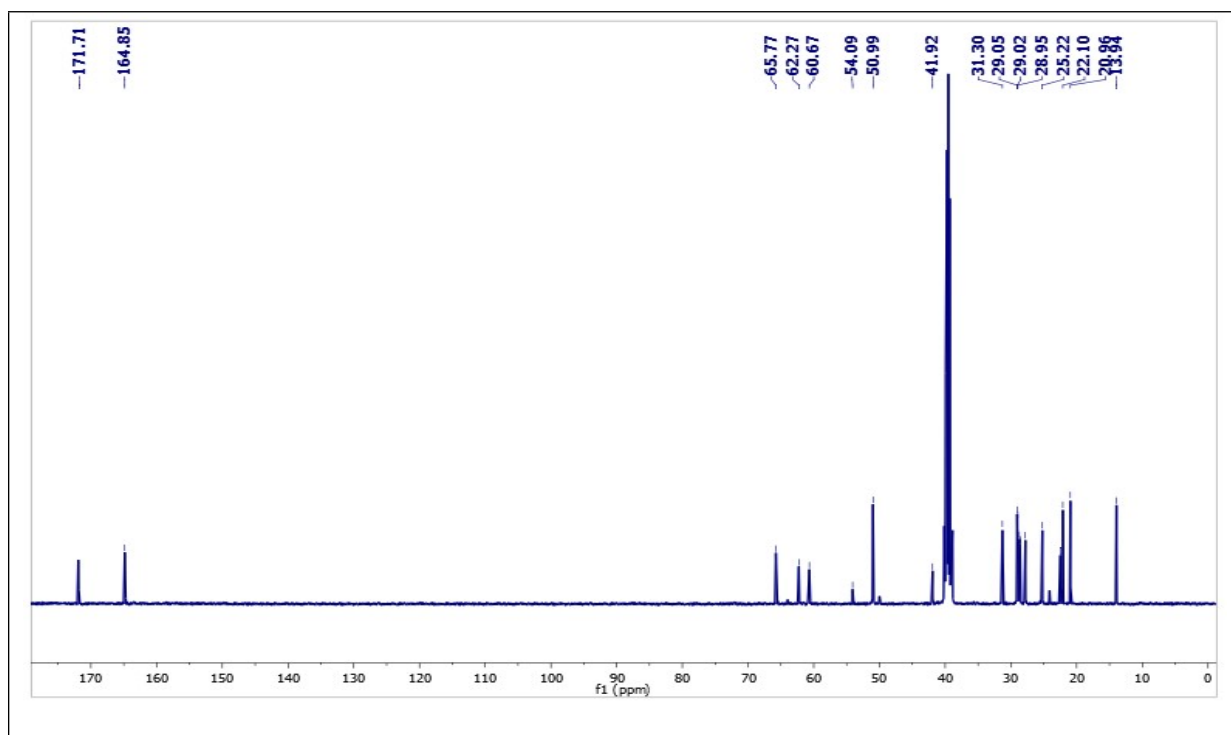
**Figure S4.** IR,  $^1\text{H}$ , and  $^{13}\text{C}$  NMR spectra of *N,N'*-(((oxybis(ethane-2,1-diyl))bis(oxy))bis(2-oxoethane-2,1-diyl))bis(*N,N*-dimethyl-3-tetradecanamidopropan-1-aminium) chloride (GSE-14).



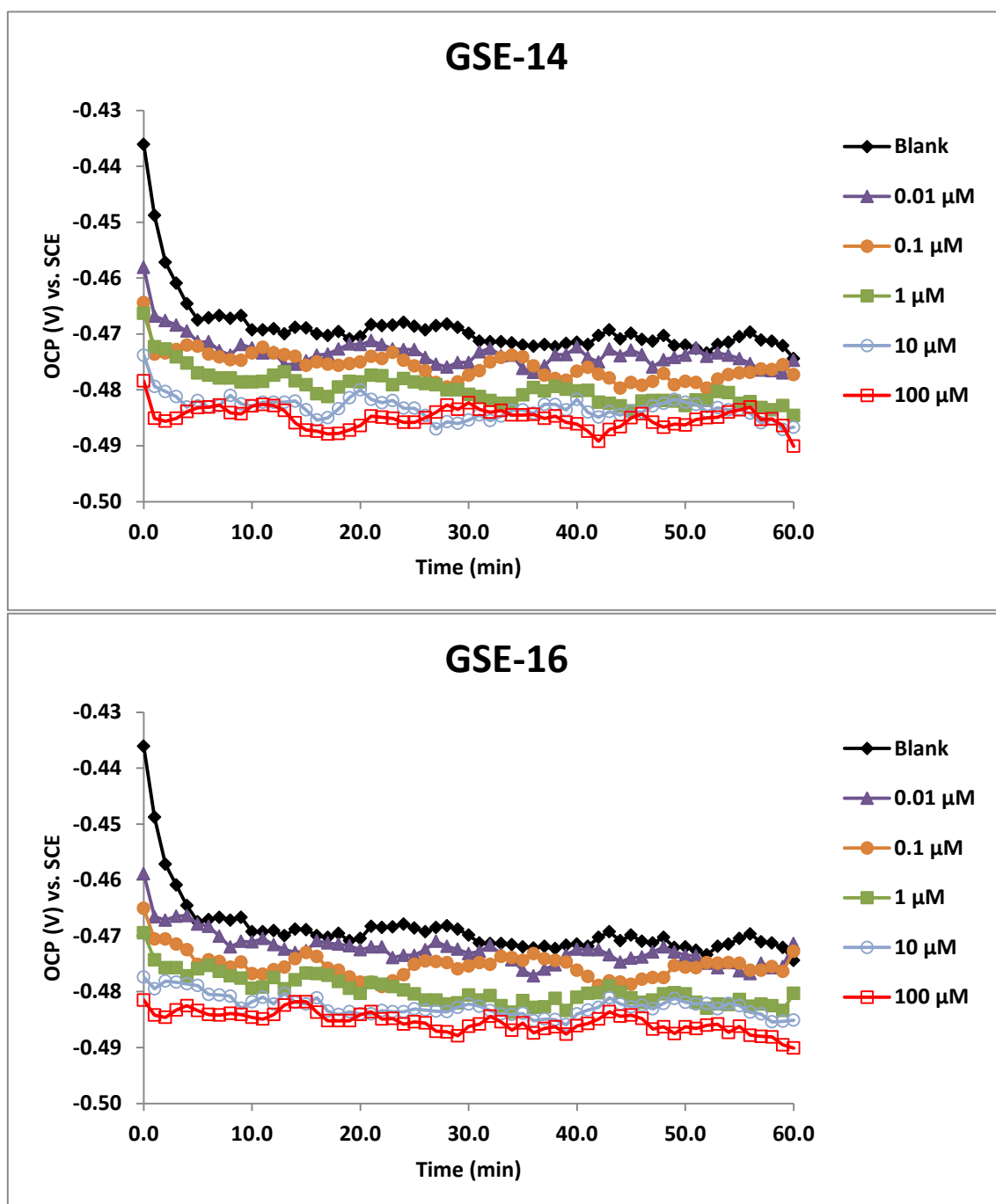


**Figure S5.** IR,  $^1\text{H}$ , and  $^{13}\text{C}$  NMR spectra of *N,N'*-(((oxybis(ethane-2,1-diyl))bis(oxy))bis(2-oxoethane-2,1-diyl))bis(*N,N*-dimethyl-3-palmitamidopropan-1-aminium) chloride (GSE-16).

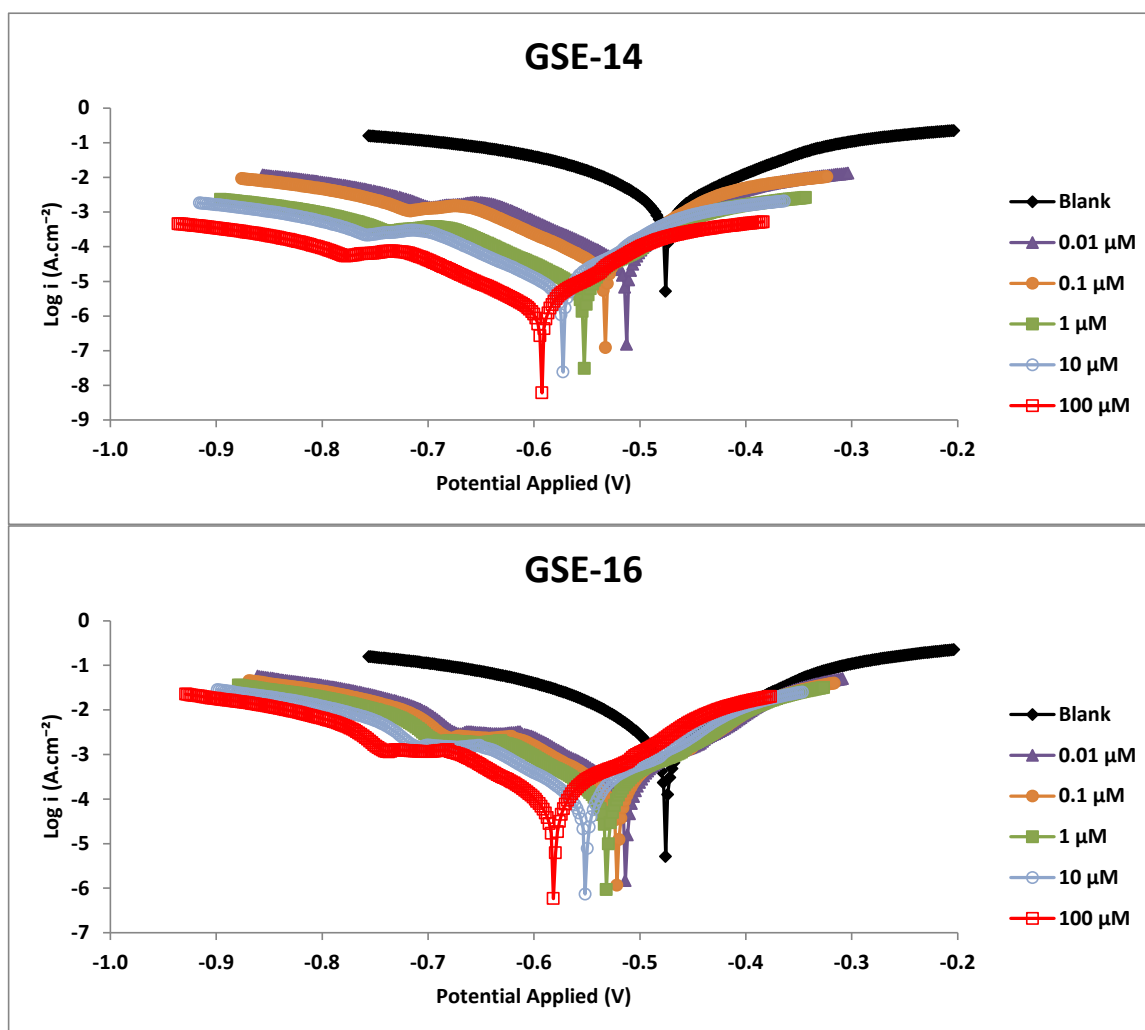




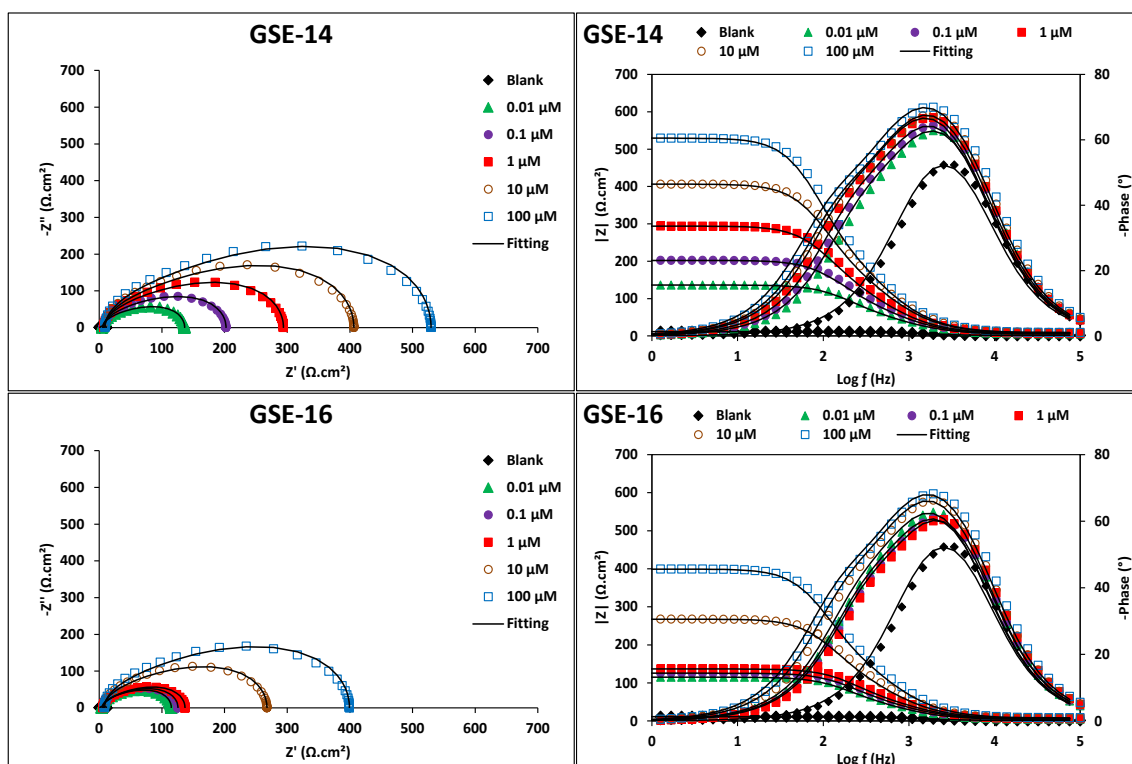
**Figure S6.** OCP of carbon steel in aerated 3M HCl solution free of and in presence of GSE-14 and GSE-16 inhibitors



**Figure S7.** PDP curves of carbon steel in aerated 3M HCl solution free of and in presence of GSE-14 and GSE-16 inhibitors



**Figure S8.** EIS diagrams of carbon steel in aerated 3M HCl solution free of and in presence of GSE-14 and GSE-16 inhibitors



**Figure S9.** EIS-derived adsorption isotherms of GSE-14 and GSE-16 on carbon steel in aerated 3M HCl solution

