Electronic Supplementary Material (ESI) for RSC Advances.


Supporting information

# One pot synthesis of tetrasubstituted thiophenes: [3+2] Annulation Strategy

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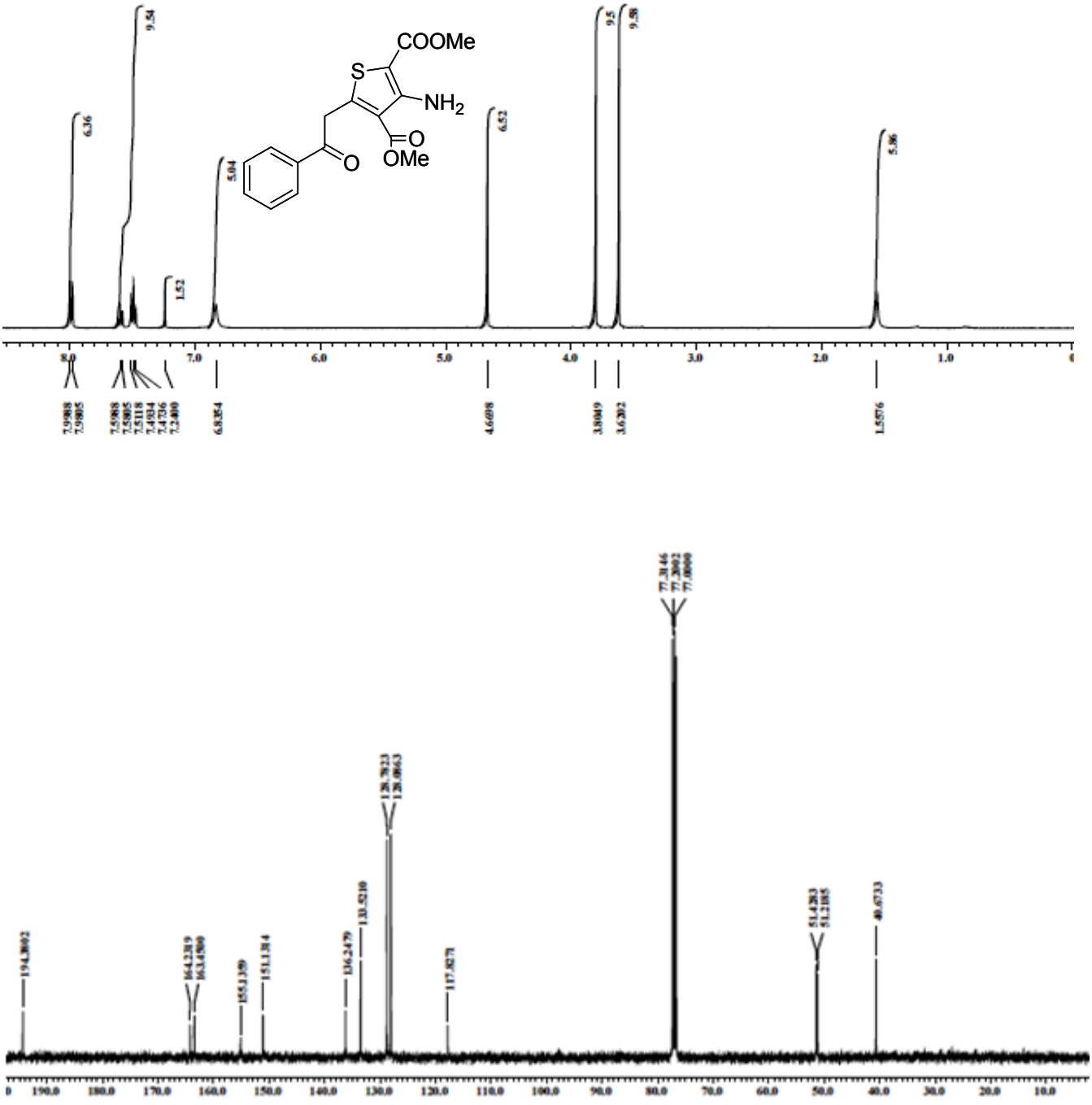
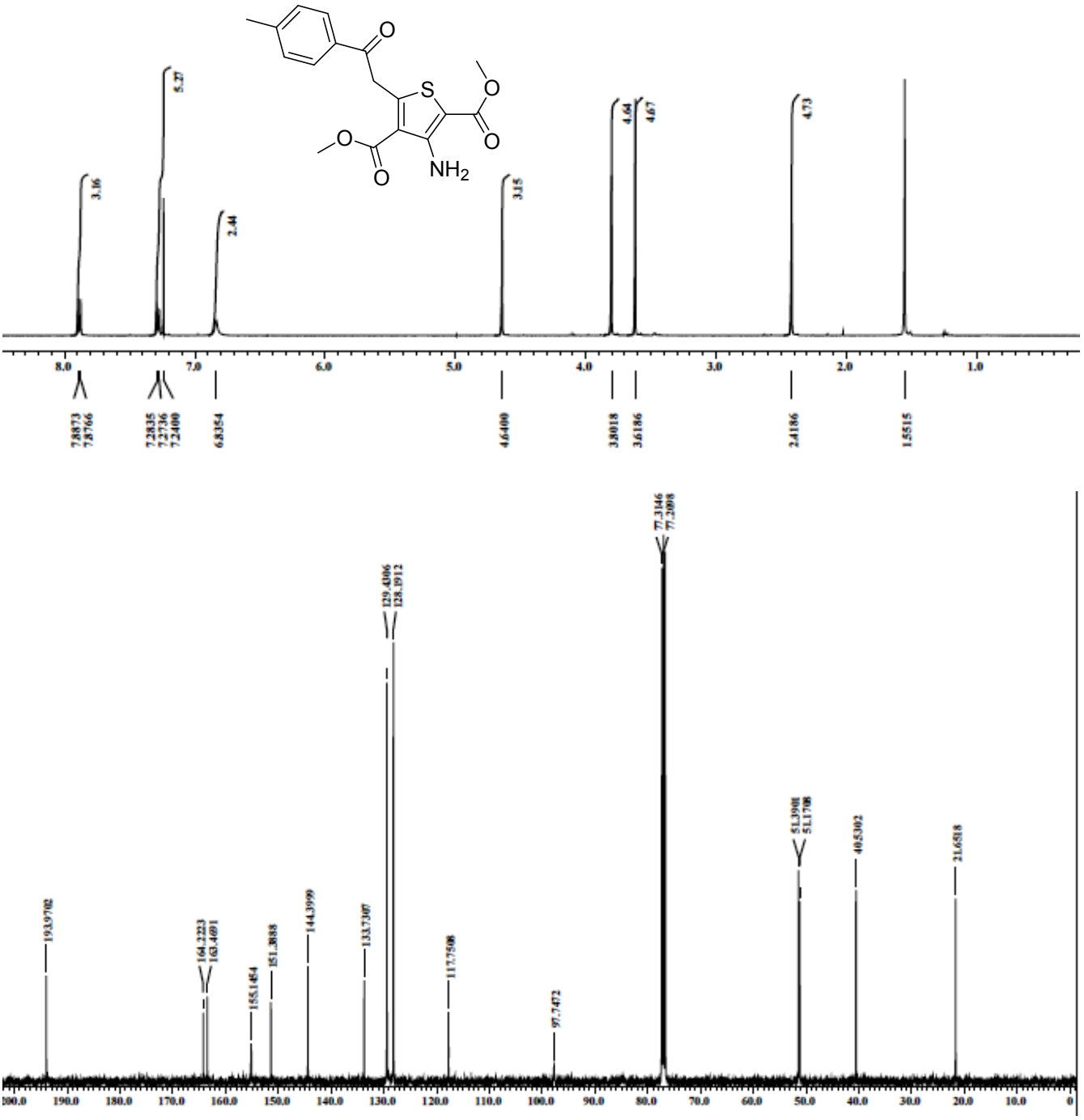
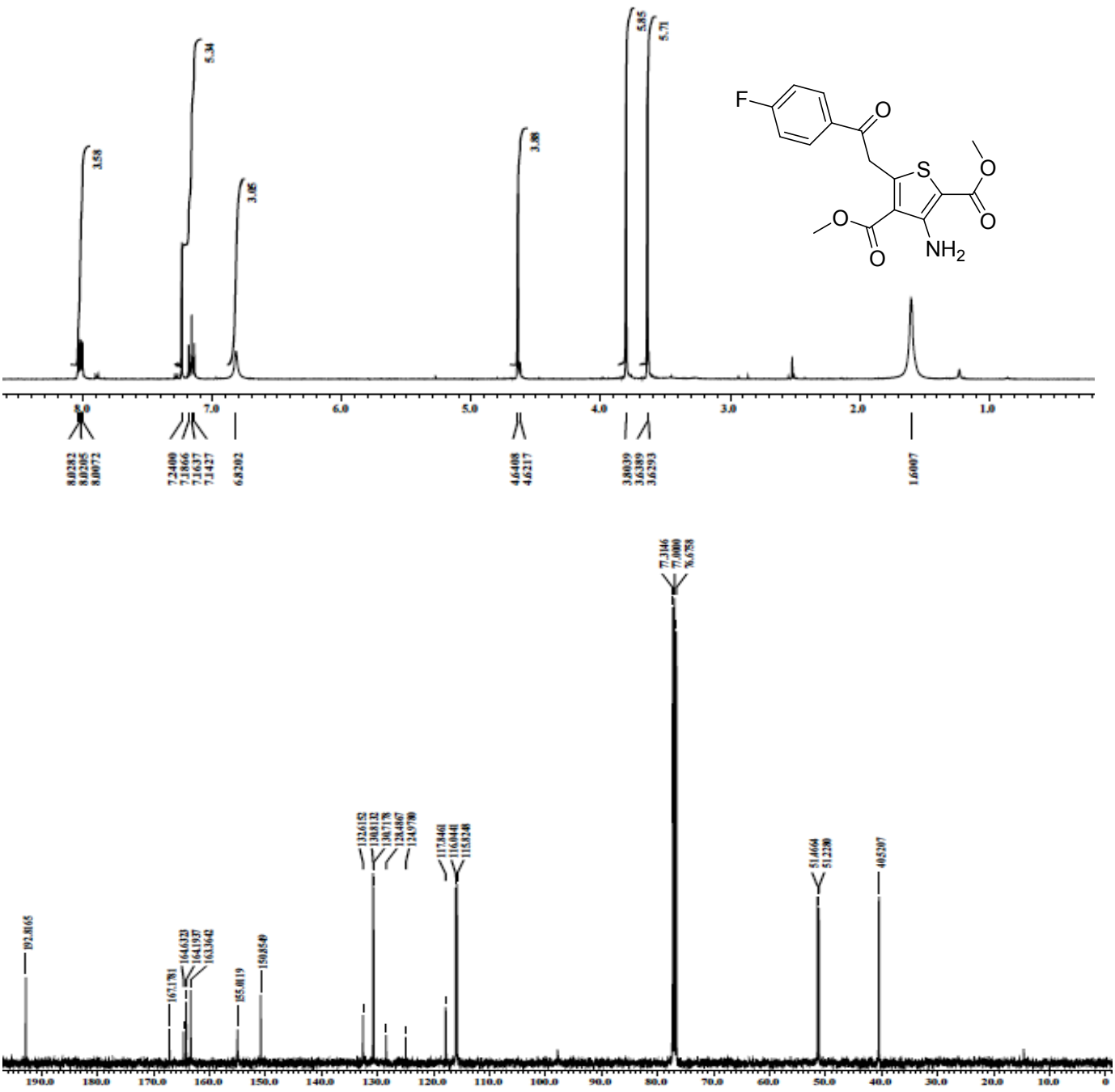
[c]Division of SAIF, Central Drug Research Institute, Lucknow, Uttar Pradesh, India-226001



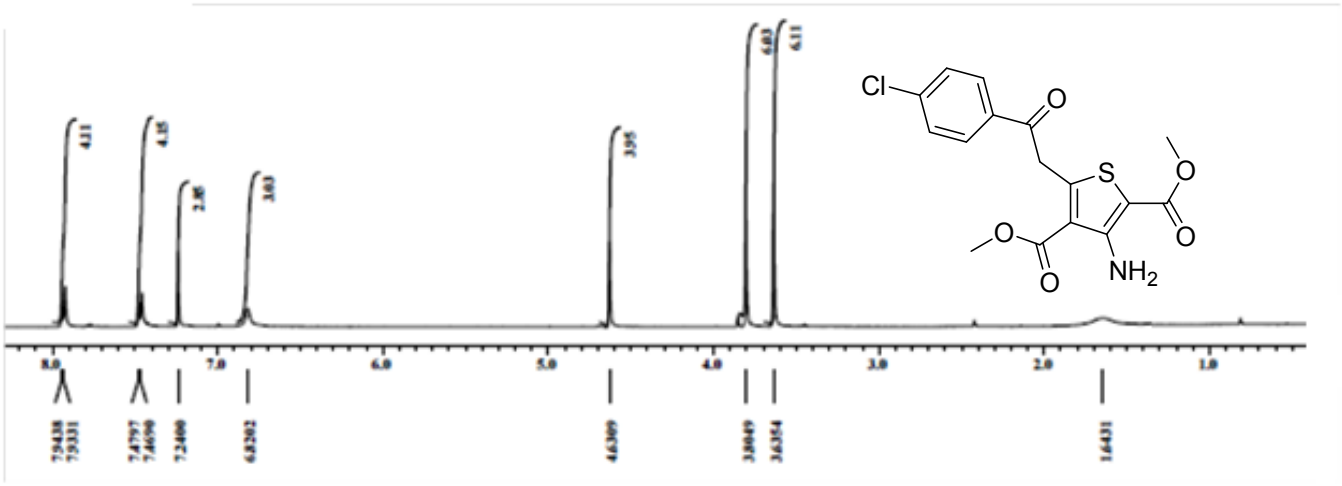

$^{1}H$ and $^{13}C$ spectra of spectra of dimethyl 3-amino-5-(2-oxo-2-phenylethyl)thiophene-2,4-dicarboxylate**(10a)**

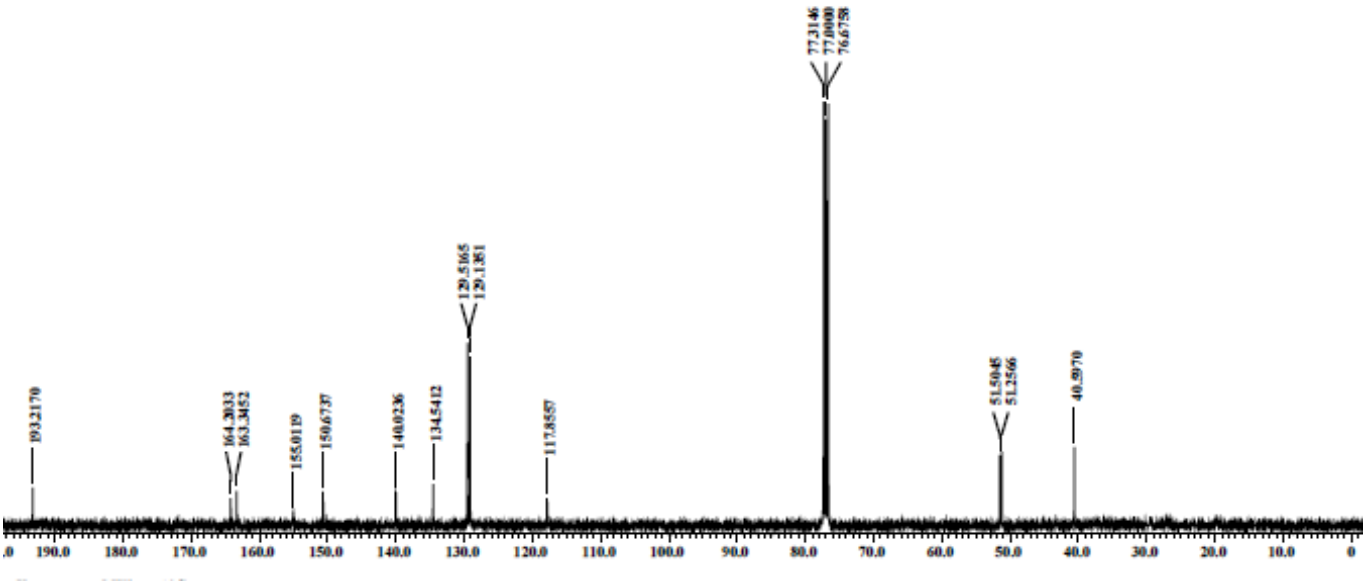



$^{1}H$ and $^{13}C$ spectra of dimethyl 3-amino-5-(2-oxo-2-(*p*-tolyl)ethyl)thiophene-2,4-dicarboxylate **(10b)**

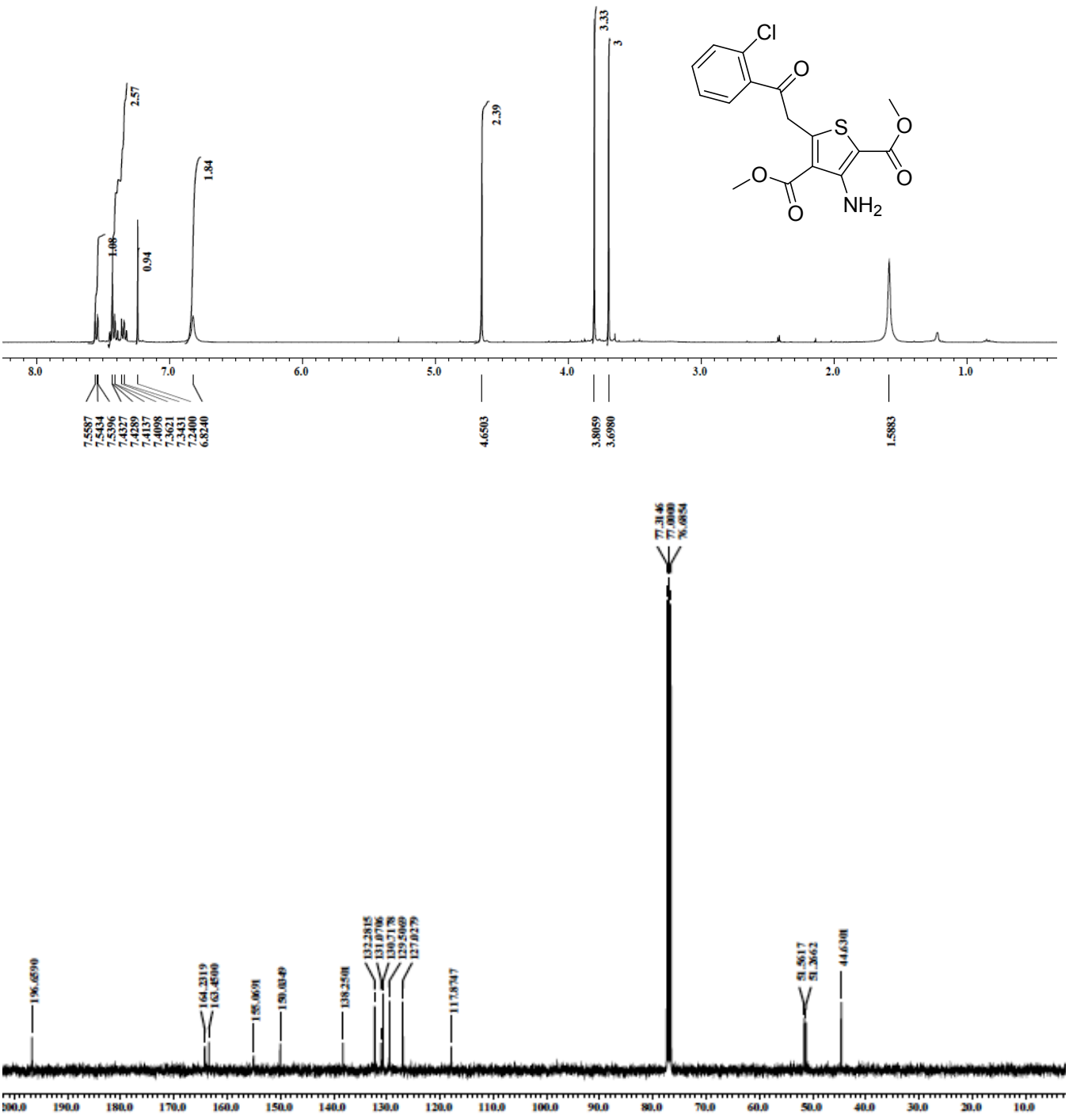



$^{1}H$ and $^{13}C$ spectra of spectra of dimethyl 3-amino-5-(2-(4-fluorophenyl)-2-oxoethyl)thiophene-2,4-dicarboxylate**(10c)**

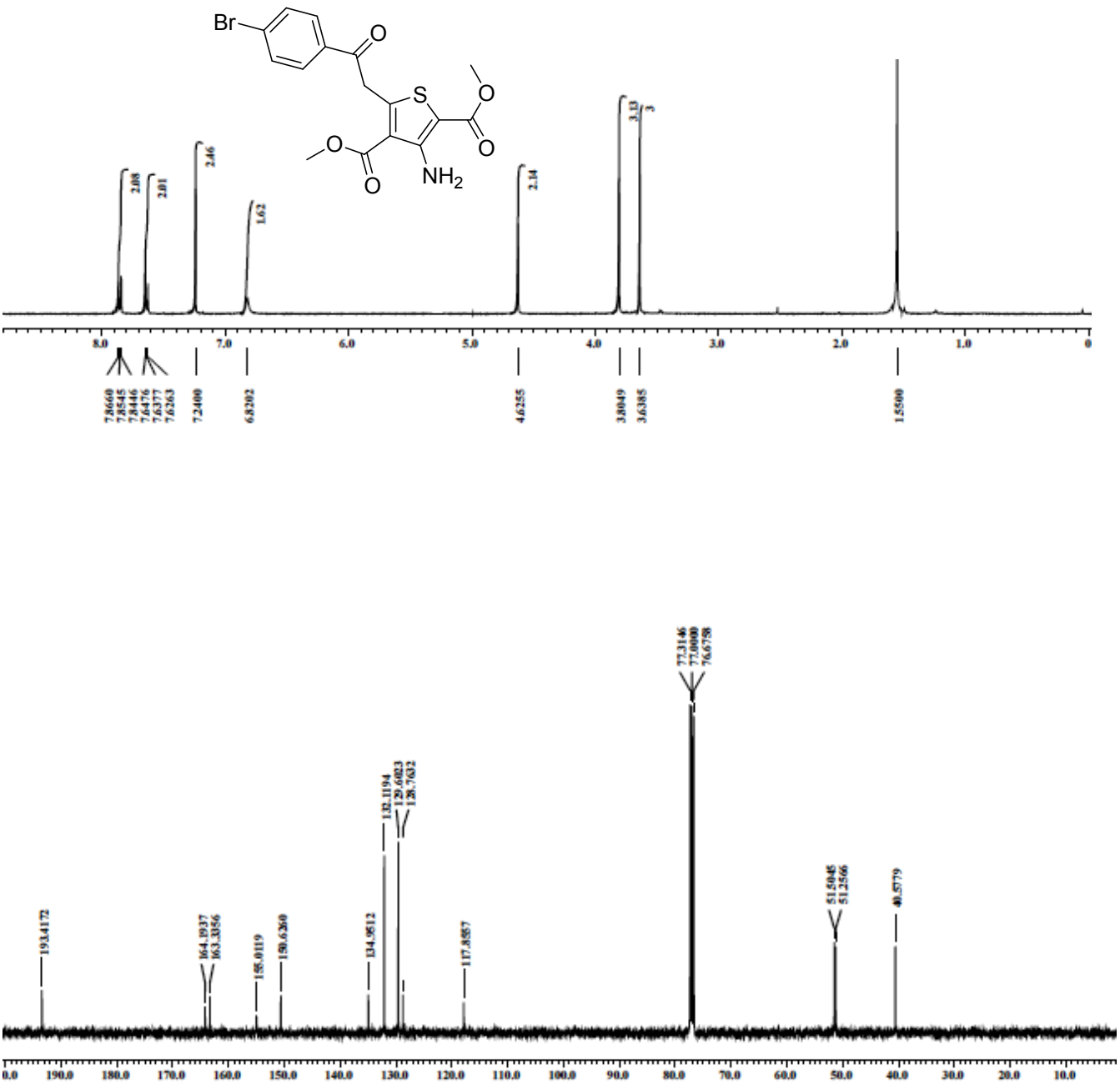


$^{1}H$ and $^{13}C$ spectra of spectra of dimethyl 3-amino-5-(2-(4-chlorophenyl)-2-oxoethyl)thiophene-2,4-dicarboxylate **(10d)**



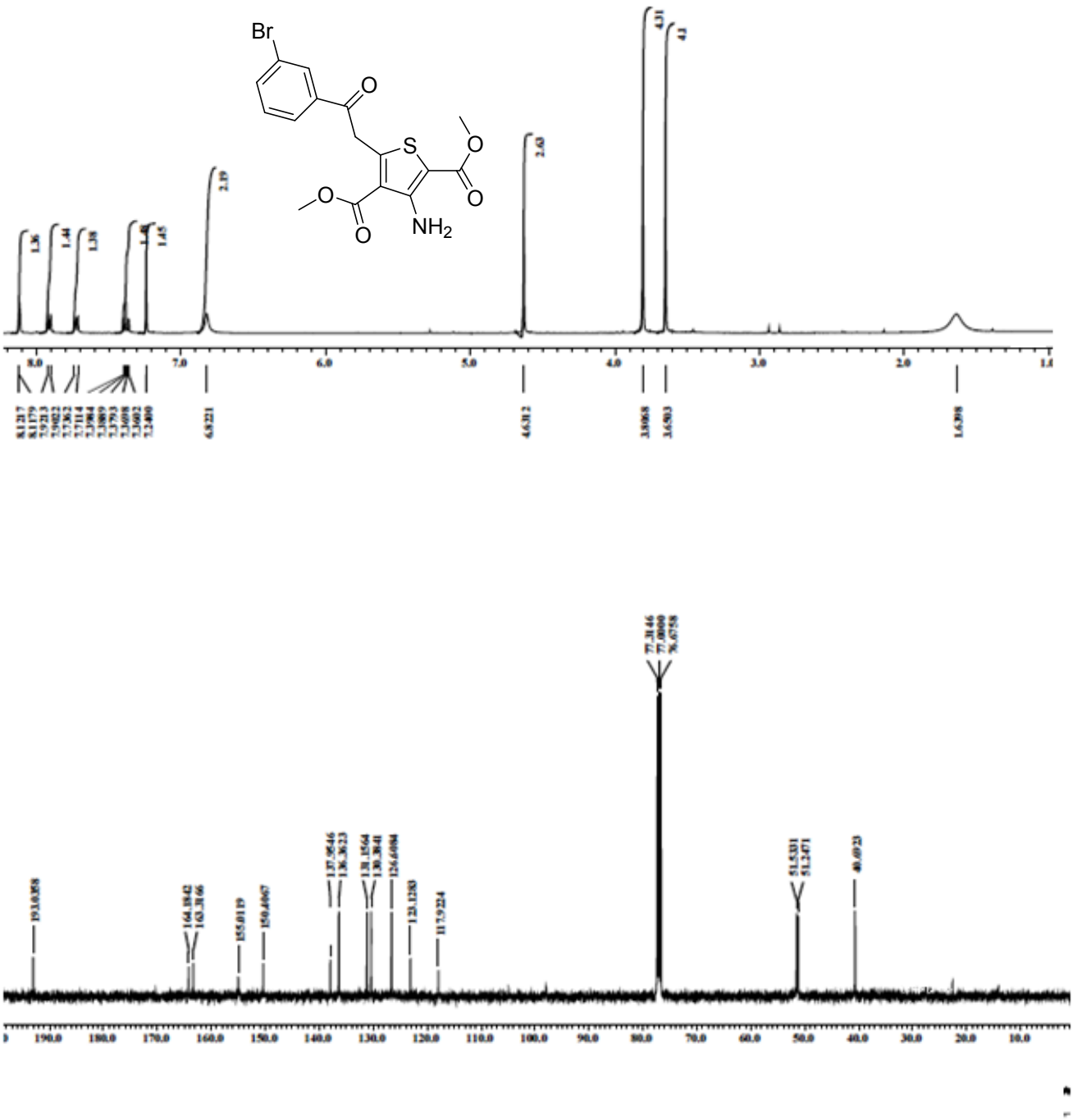

$^{1}H$ and $^{13}C$ spectra of spectra of dimethyl 3-amino-5-(2-(2-chlorophenyl)-2-oxoethyl)thiophene-2,4-dicarboxylate **(10e)**







$^{1}H$ and $^{13}C$ spectra of spectra of dimethyl 3-amino-5-(2-(4-bromophenyl)-2-oxoethyl)thiophene-2,4-dicarboxylate **(10f)**

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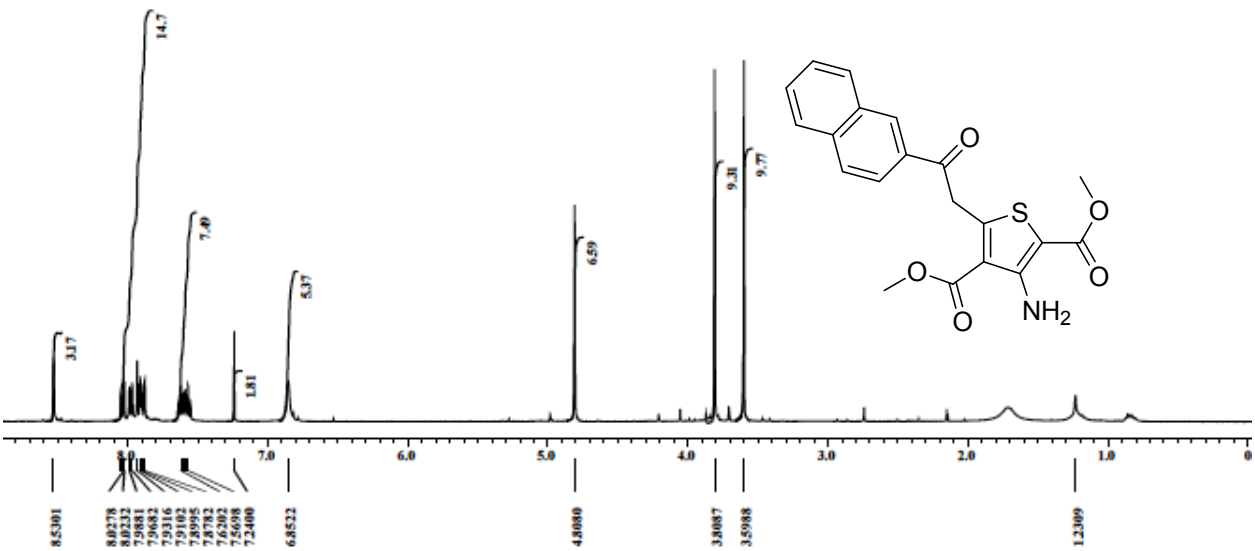
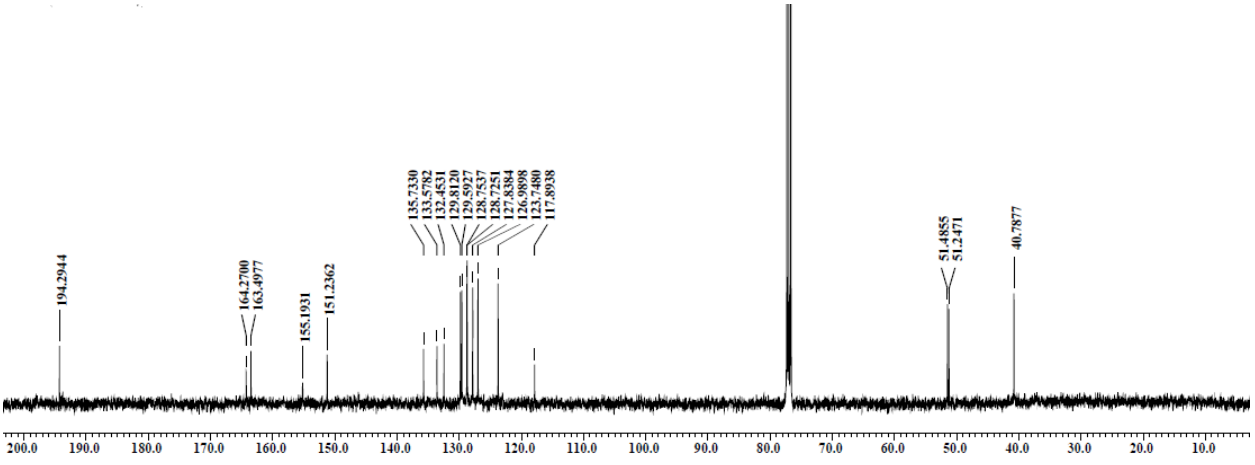
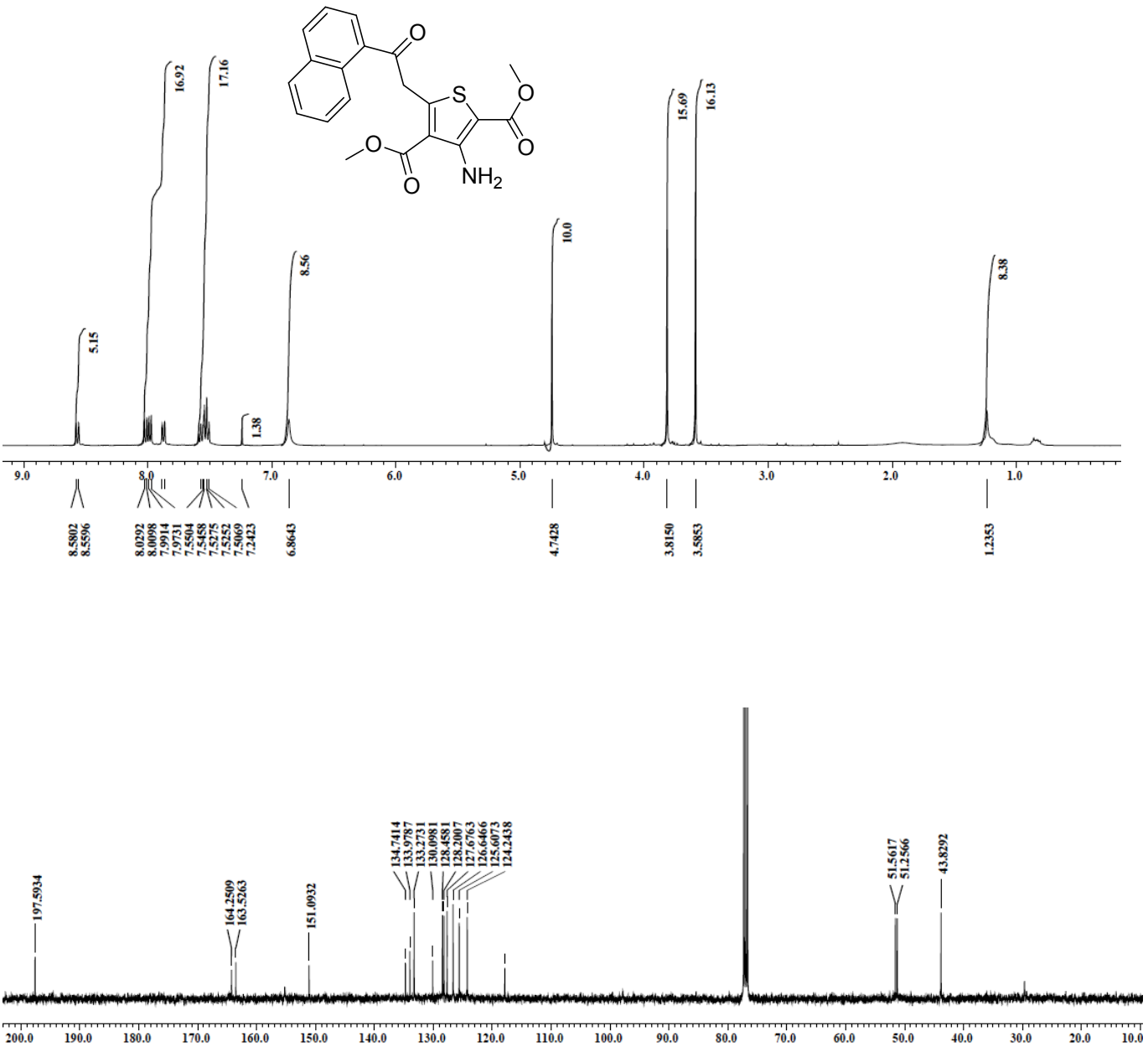


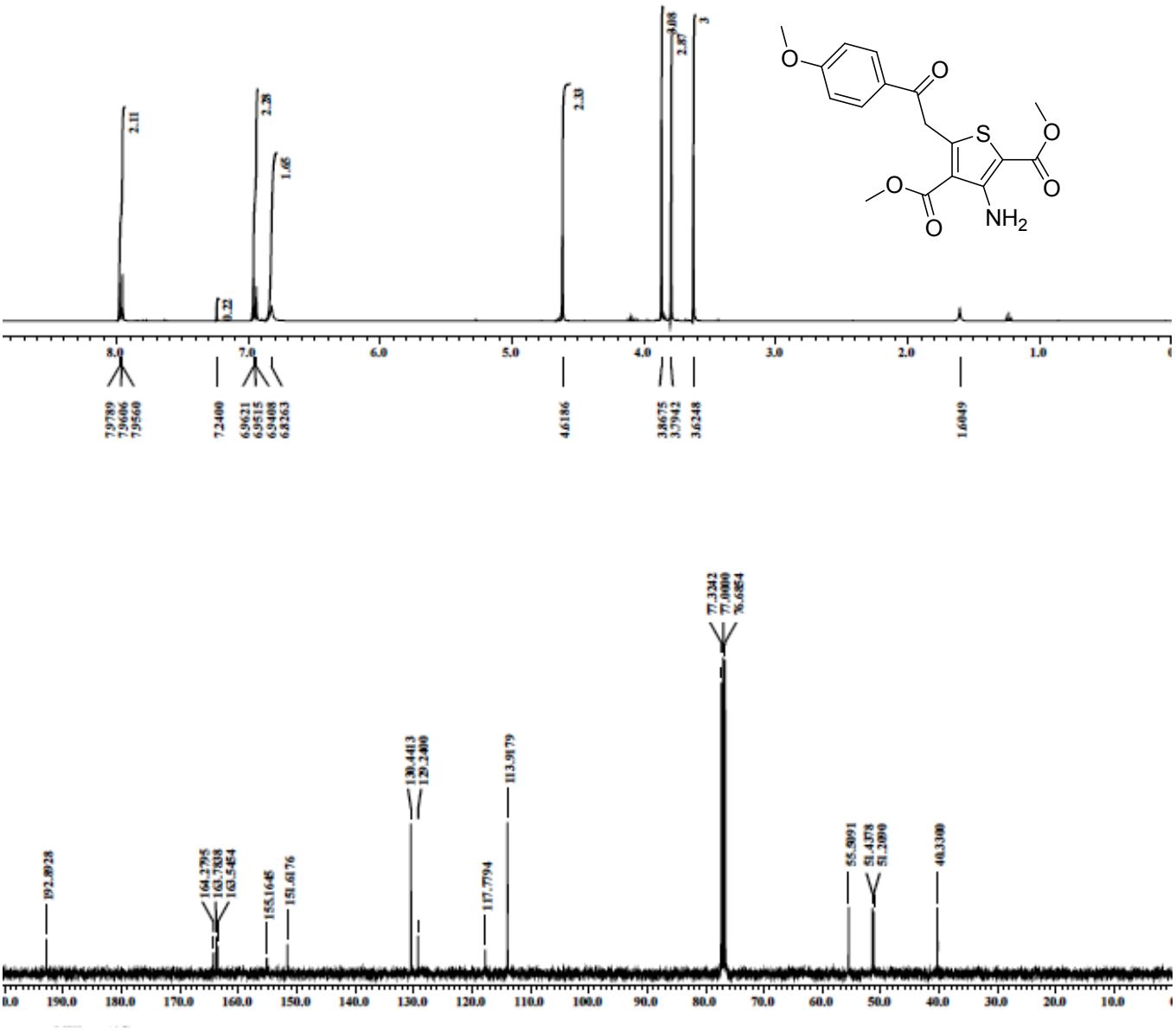

$^{1}H$ and $^{13}C$ spectra of spectra of dimethyl 3-amino-5-(2-(naphthalen-2-yl)-2-oxoethyl)thiophene-2,4-dicarboxylate **(10h)**



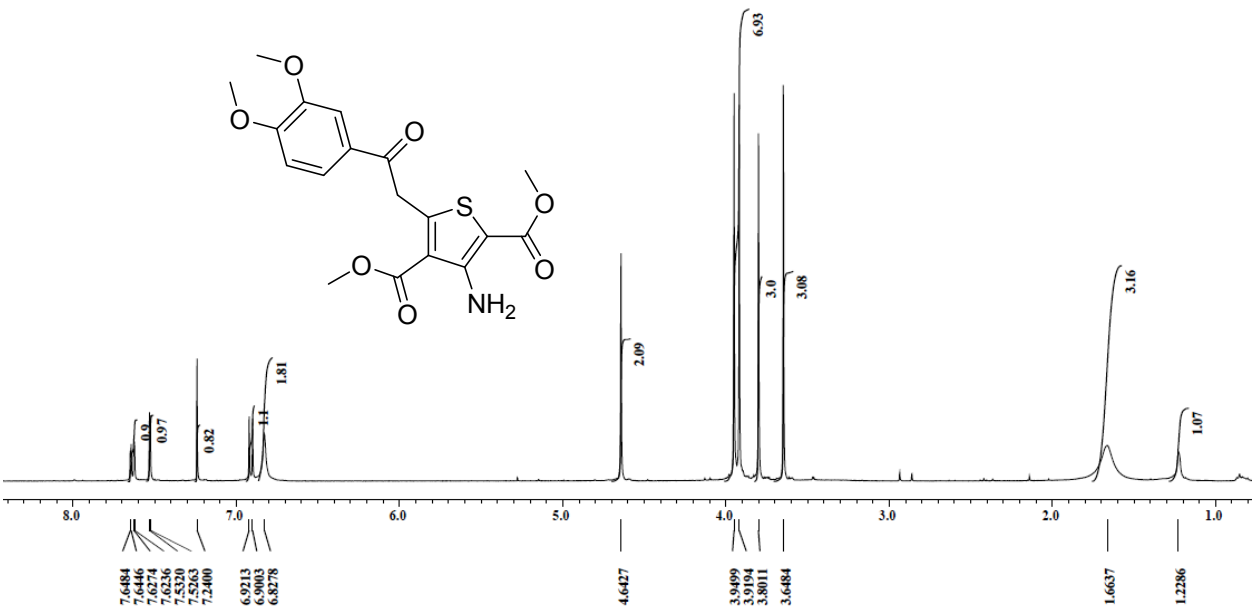


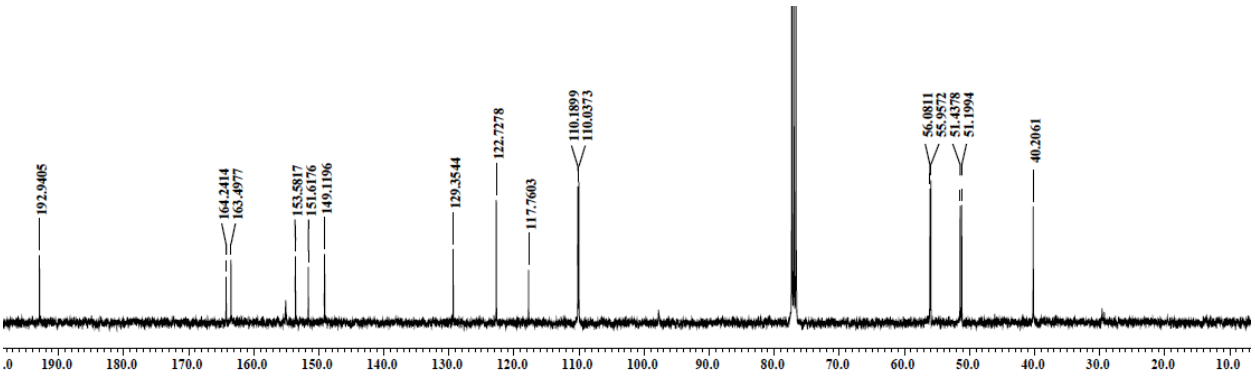


$^{1}H$ and $^{13}C$ spectra of spectra of dimethyl 3-amino-5-(2-(naphthalen-1-yl)-2-oxoethyl)thiophene-2,4-dicarboxylate **(10i)**

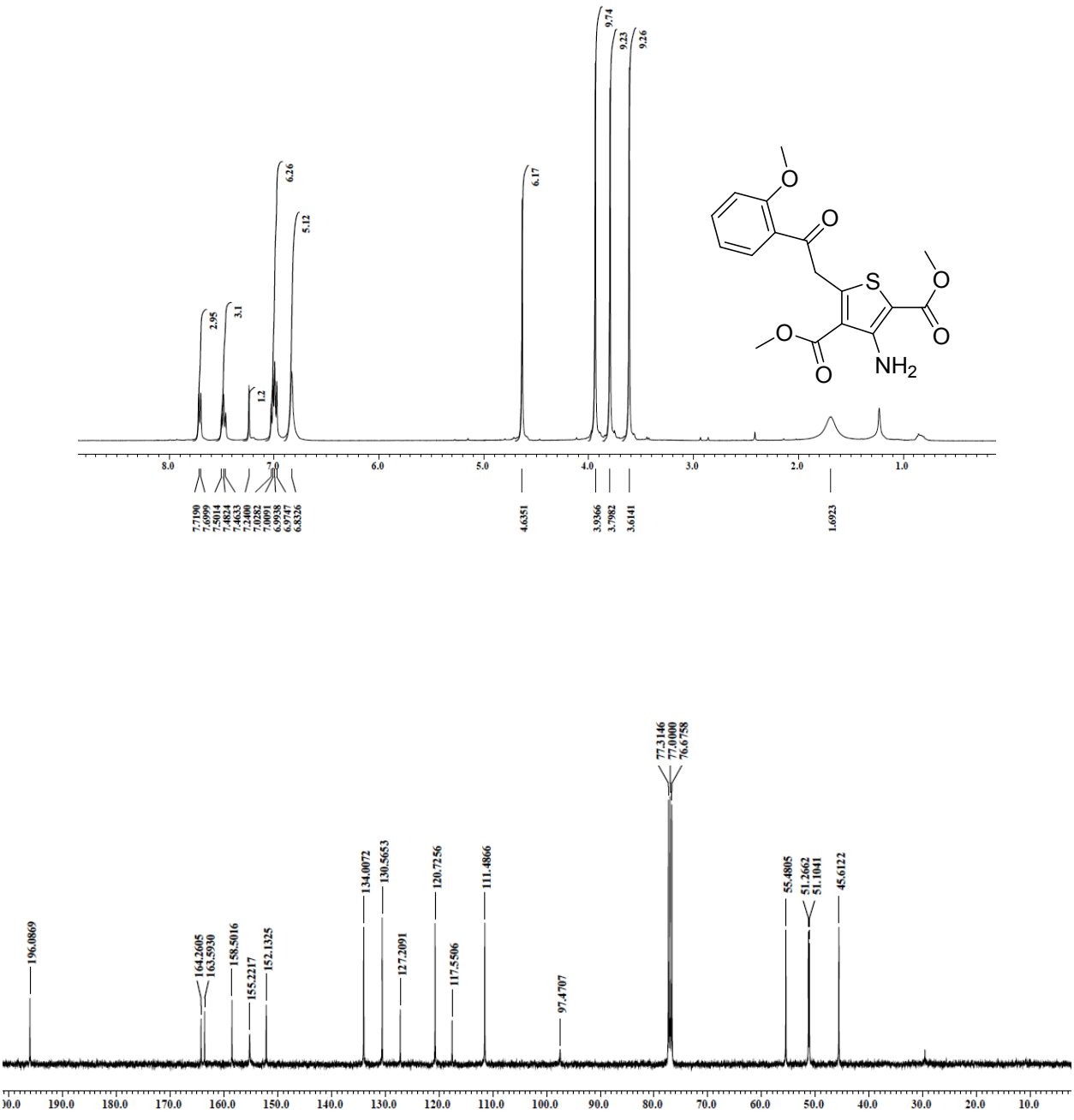


$^{1}H$ and $^{13}C$ spectra of spectra of dimethyl 3-amino-5-(2-(4- methoxyphenyl)acetyl)thiophene-2,4-dicarboxylate **(10j)**

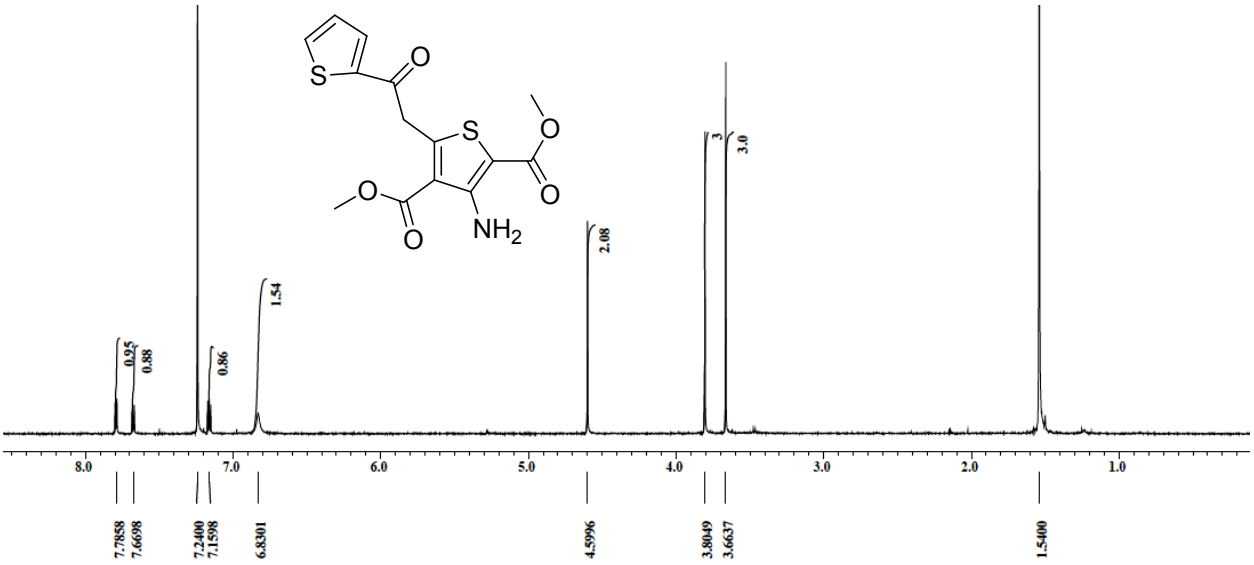


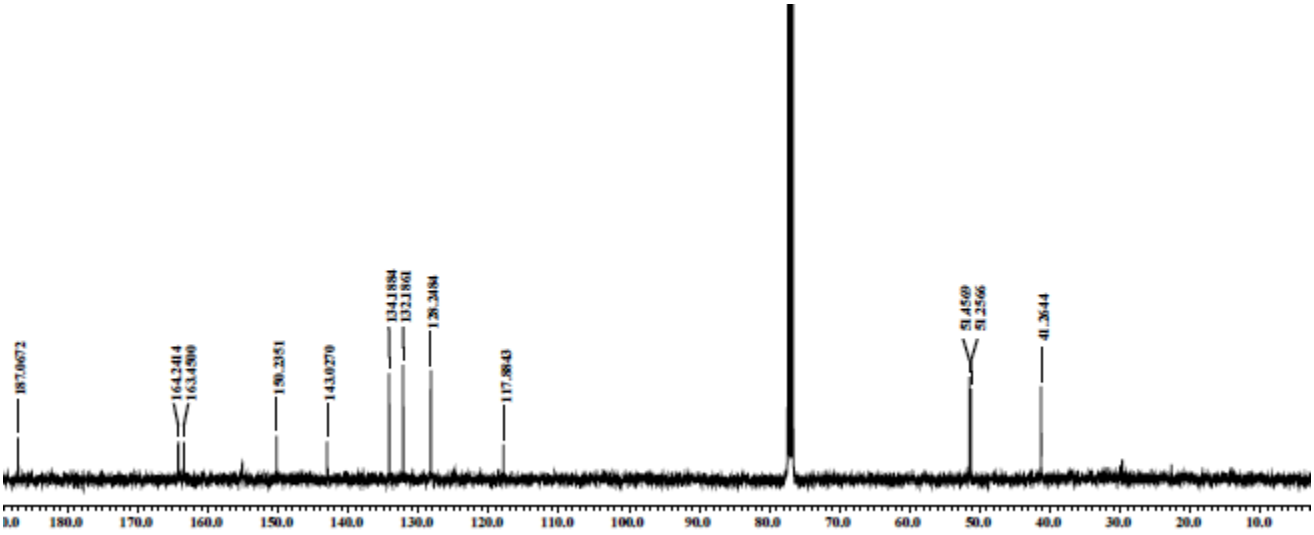




$^{1}H$ and $^{13}C$ spectra of dimethyl 3-amino-5-(2-(3,4-dimethoxyphenyl)-2-oxoethyl)thiophene-2,4-dicarboxylate **(10k)**

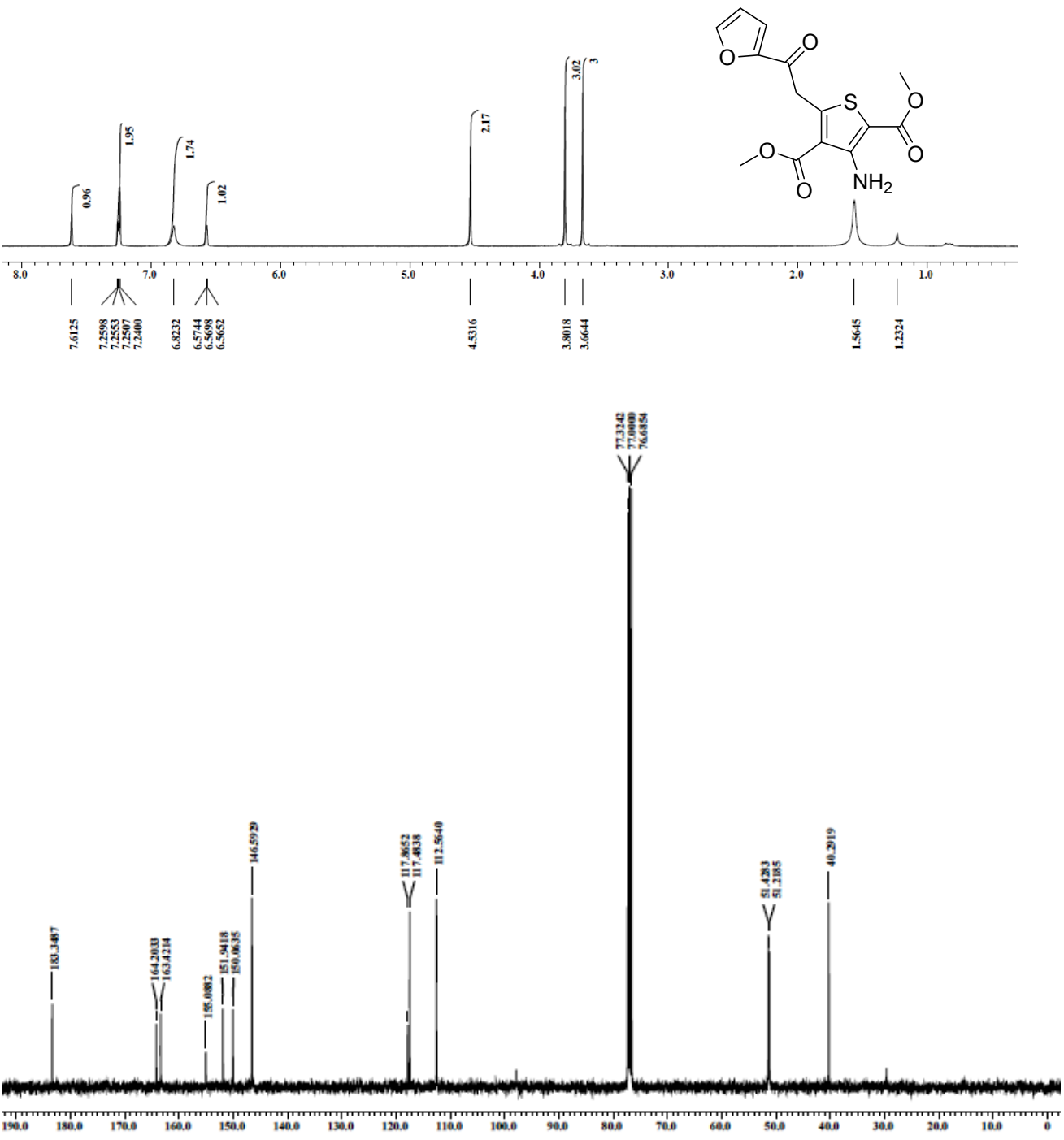



$^{1}H$ and $^{13}C$ spectra of dimethyl 3-amino-5-(2-(2-methoxyphenyl)-2-oxoethyl)thiophene-2,4-dicarboxylate **(10l)**

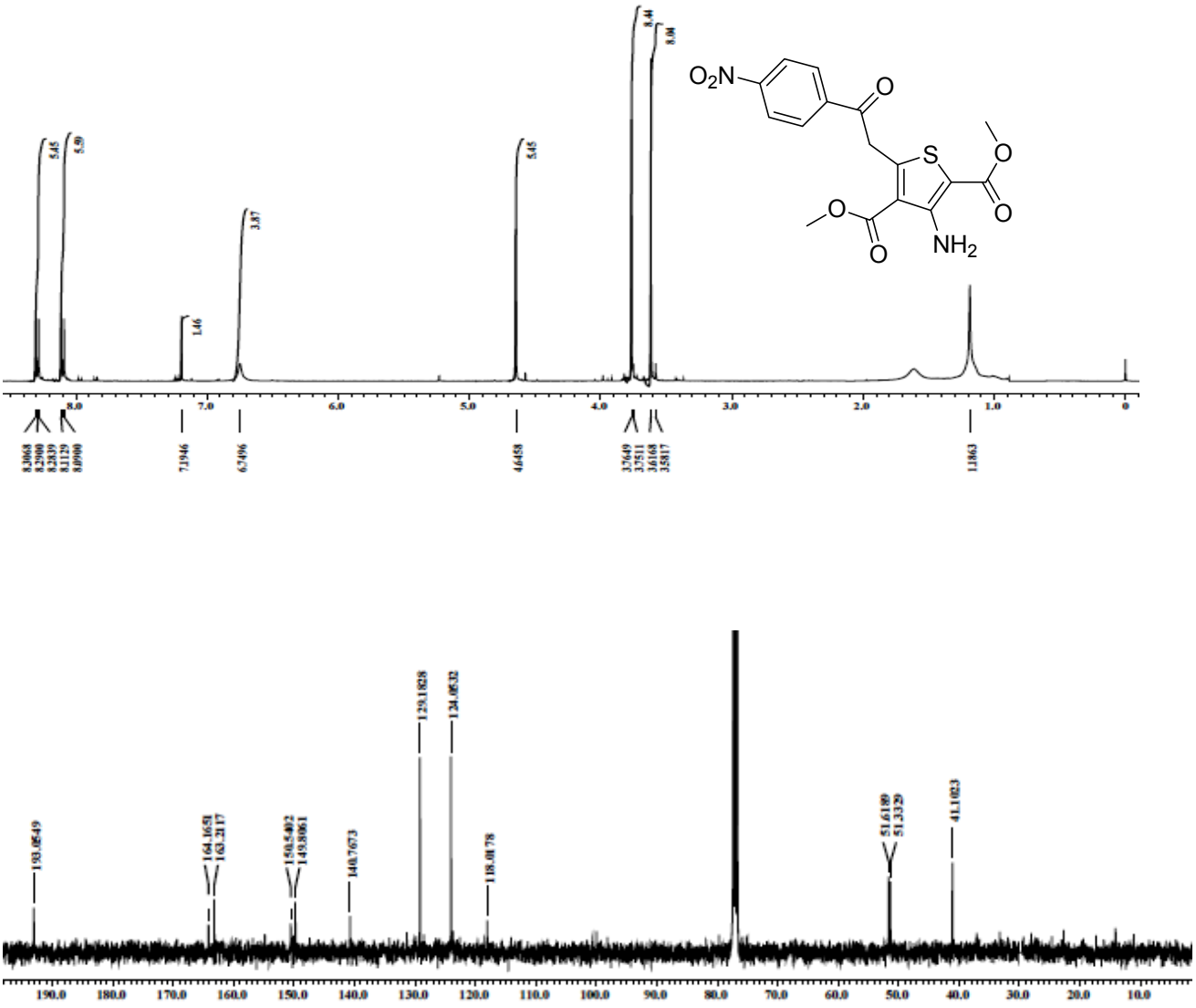



$^{1}H$ and $^{13}C$ spectra of dimethyl 3-amino-5-(2-oxo-2-(thiophen-2-yl)ethyl)thiophene-2,4-dicarboxylate **(10m)**




$^{1}H$ and $^{13}C$ spectra of dimethyl 3-amino-5-(2-(furan-2-yl)-2-oxoethyl)thiophene-2,4-dicarboxylate **(10n)**




$^{1}H$ and $^{13}C$ spectra of dimethyl 3-amino-5-(2-(4-nitrophenyl)-2-oxoethyl)thiophene-2,4-dicarboxylate **(10o)**

XYZ Coordinates Monomer

E = -1447.8510683

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| 3 | 8 | 0 | 1.482311 | -0.346821 | 1.537224 |
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| | | | | | |
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| 37 | 1 | 0 | -4.101516 | 1.908035 | 0.523967 |
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XYZ Coordinates Dimer

E = -2895.7100653

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| Center | Atomic | Atomic | Coordinates (Angstroms) |
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| | | | | | |
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