Electronic Supplementary Material (ESI) for New Journal of Chemistry.

SUPPORTING INFORMATION

Blaise Reaction: Synthesis, skeletal diversification of C(4) substituted 5-ylidenepyrrol-(5*H*)-ones and the role of the strategically located ester on the reactivity of the nitriles

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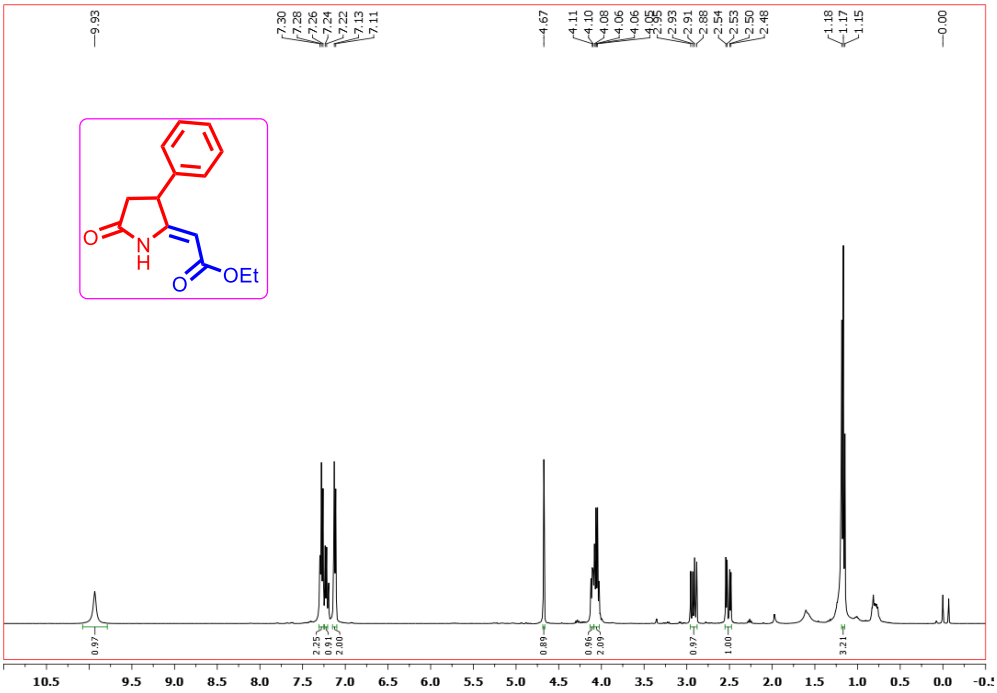
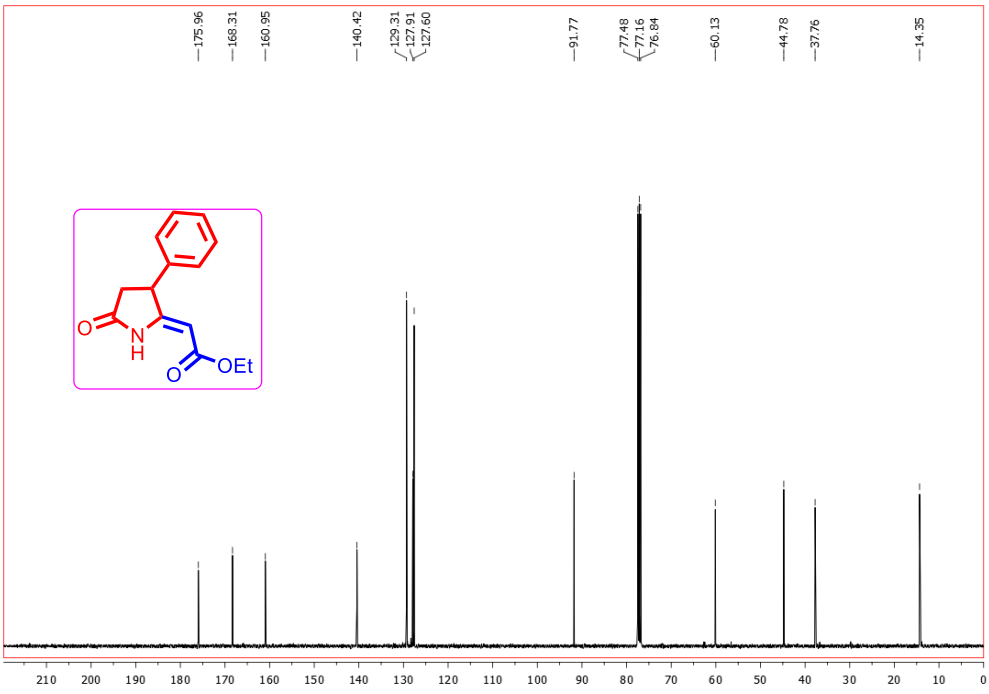
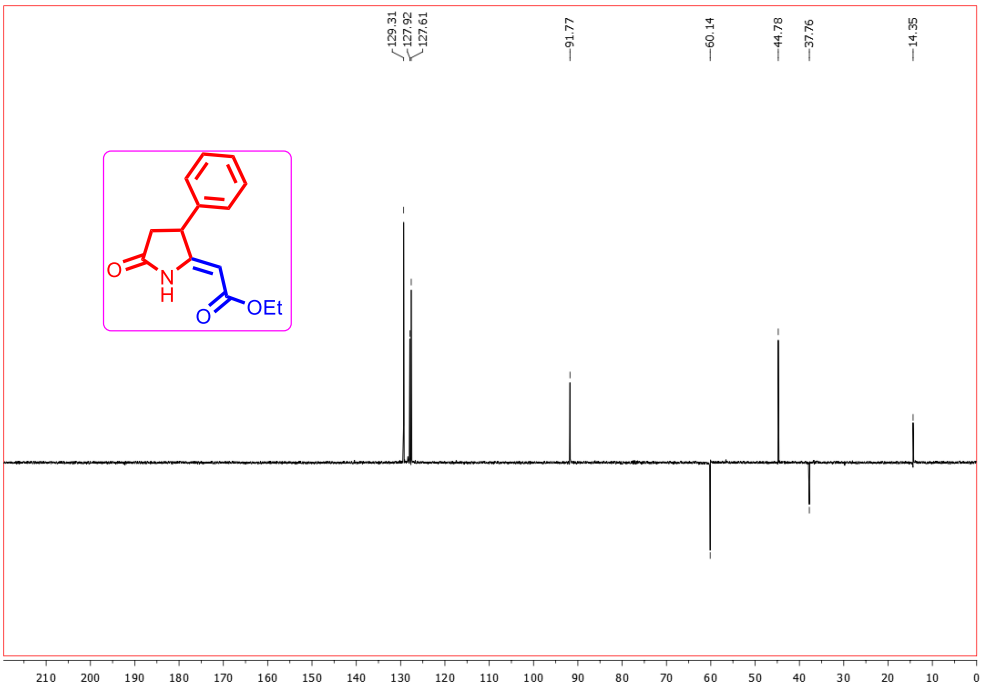


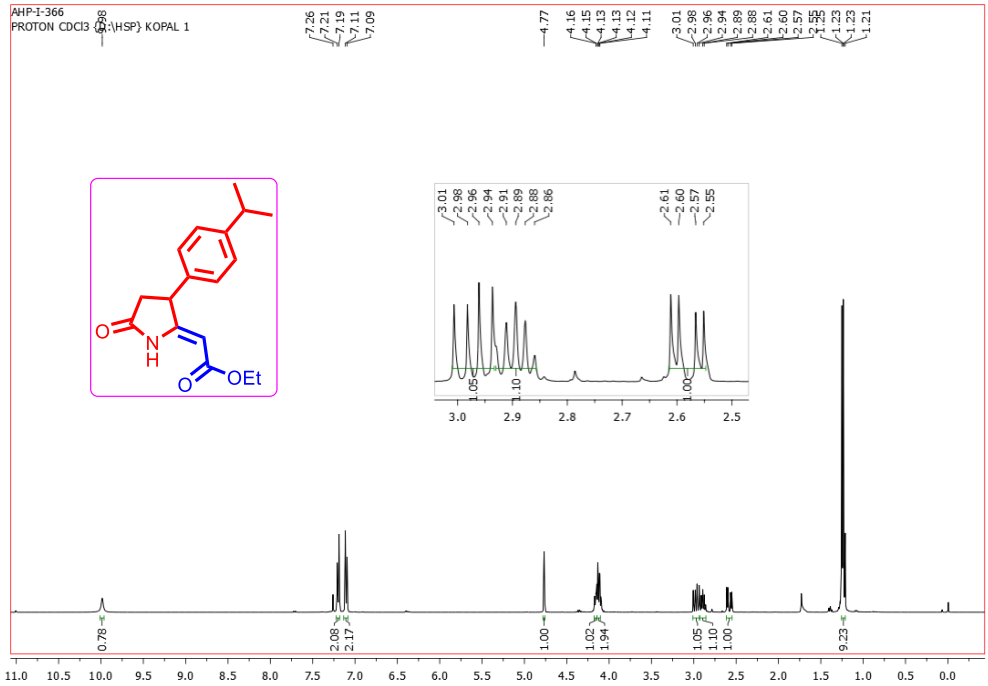
^{1}H (400 MHz, $CDCl_3$) NMR spectrum of Ethyl (*Z*)-2-(5-oxo-3-phenylpyrrolidin-2-ylidene)acetate **12a.**



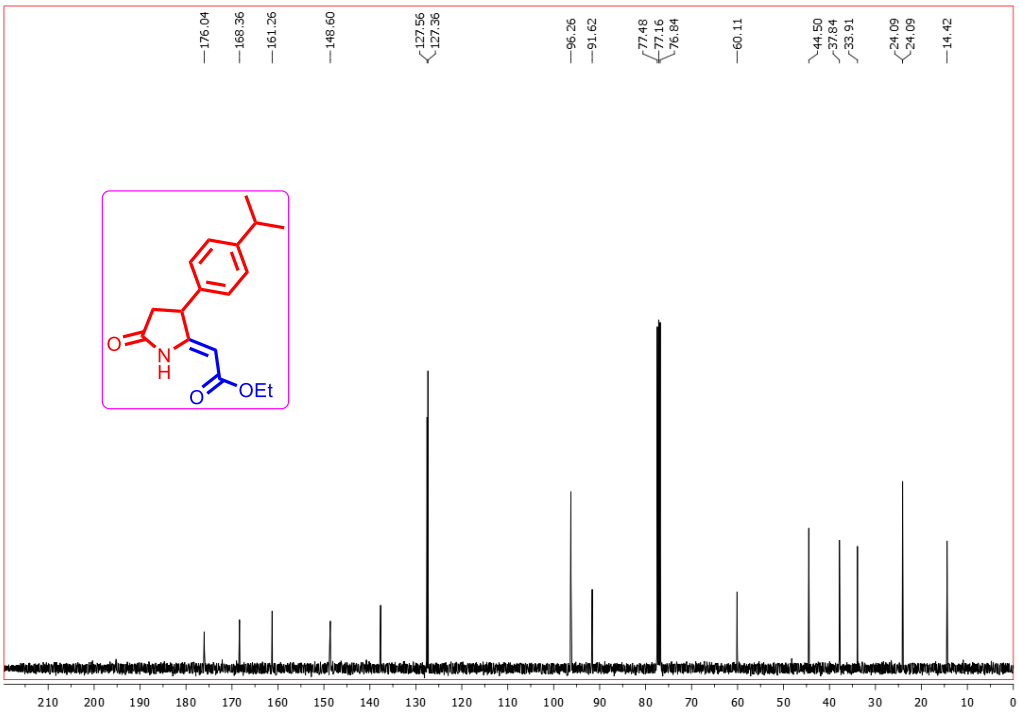
^{13}C (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (*Z*)-2-(5-oxo-3-phenylpyrrolidin-2-ylidene)acetate **12a.**



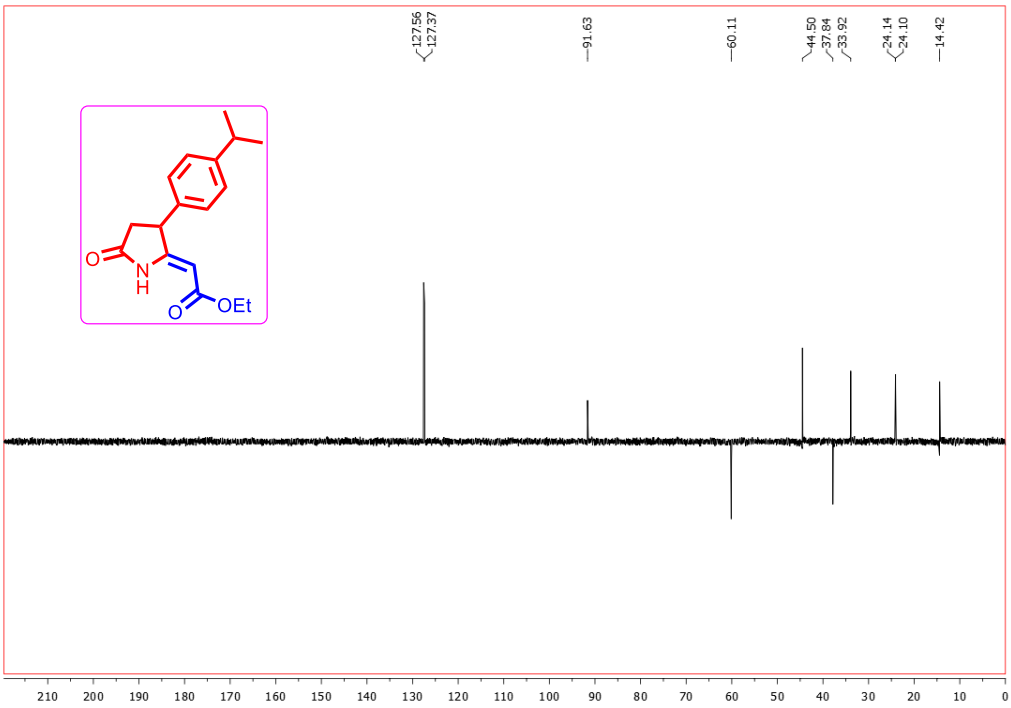
DEPT-135 (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (*Z*)-2-(5-oxo-3-phenylpyrrolidin-2-ylidene)acetate **12a.**



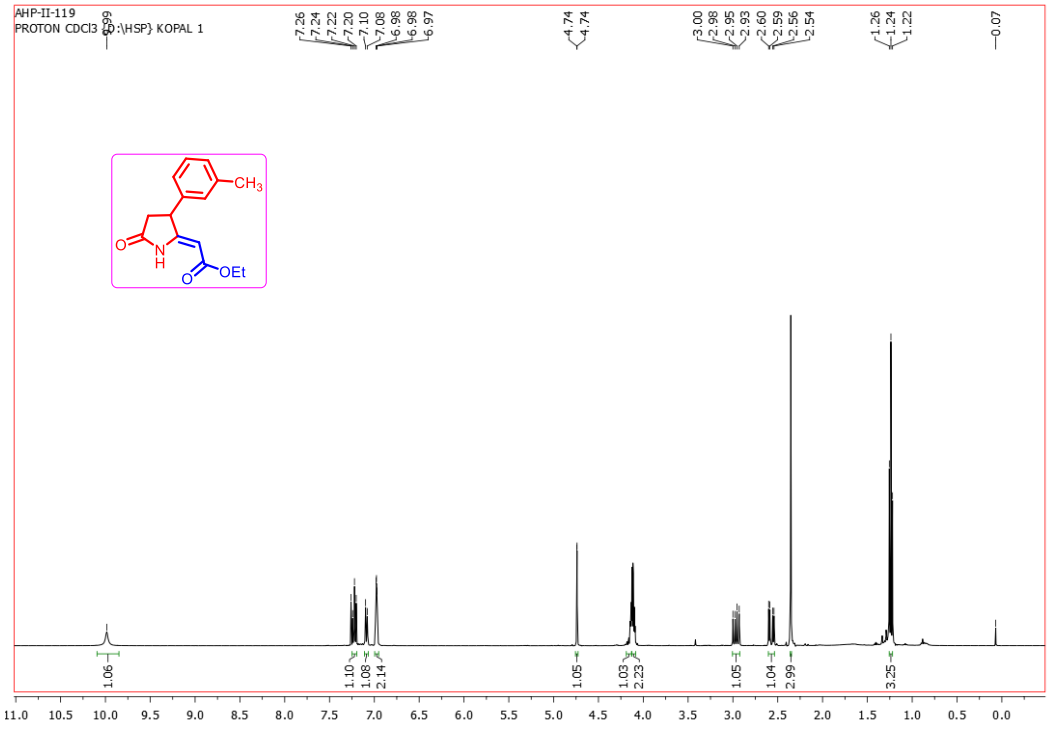
^1H (400 MHz, $CDCl_3$) NMR spectrum of Ethyl (*Z*)-2-(3-(4-isopropylphenyl)-5-oxopyrrolidin-2-ylidene)acetate **12b.**



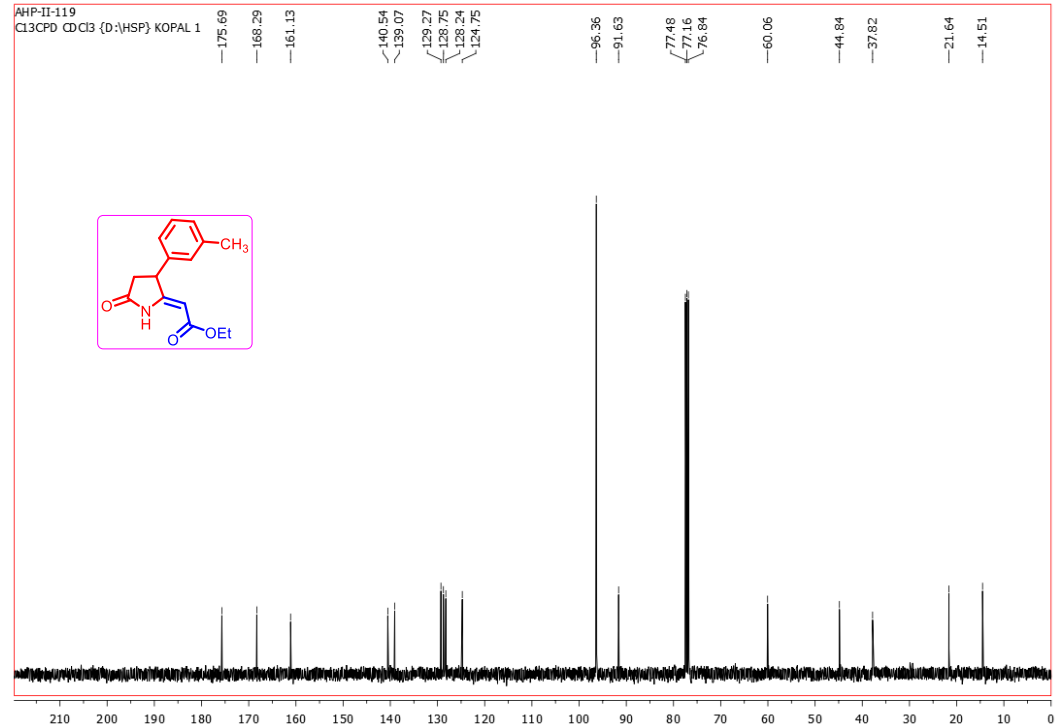
^{13}C (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (Z)-2-(3-(4-isopropylphenyl)-5-oxopyrrolidin-2-ylidene)acetate **12b.**



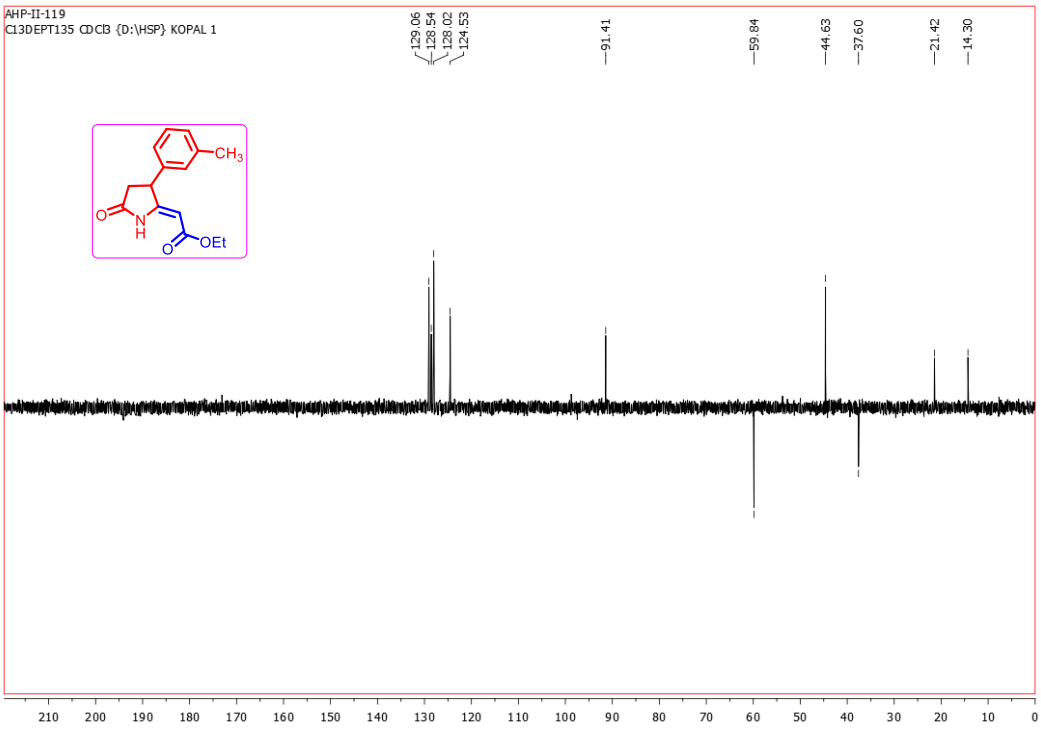
DEPT-135 (100 MHz, $CDCl_{3+}$) NMR spectrum of Ethyl (Z)-2-(3-(4-isopropylphenyl)-5-oxopyrrolidin-2-ylidene)acetate **12b.**



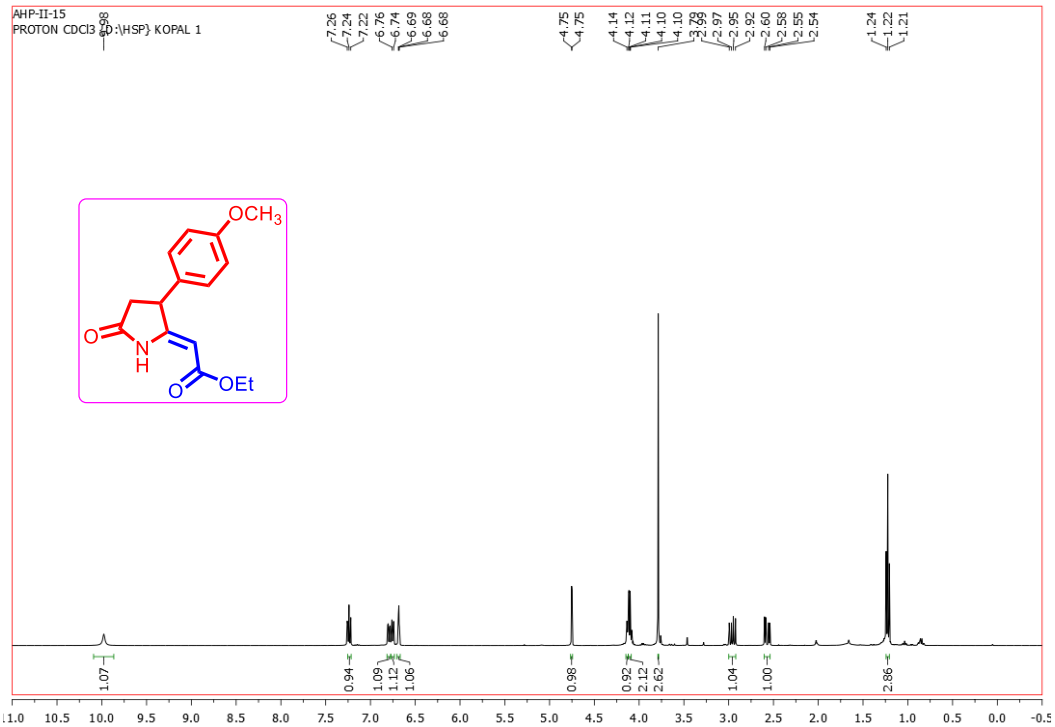
^{1}H (400 MHz, $CDCl_3$) NMR spectrum of Ethyl (Z)-2-(5-oxo-3-(m-tolyl)pyrrolidin-2-ylidene)acetate **12c.**



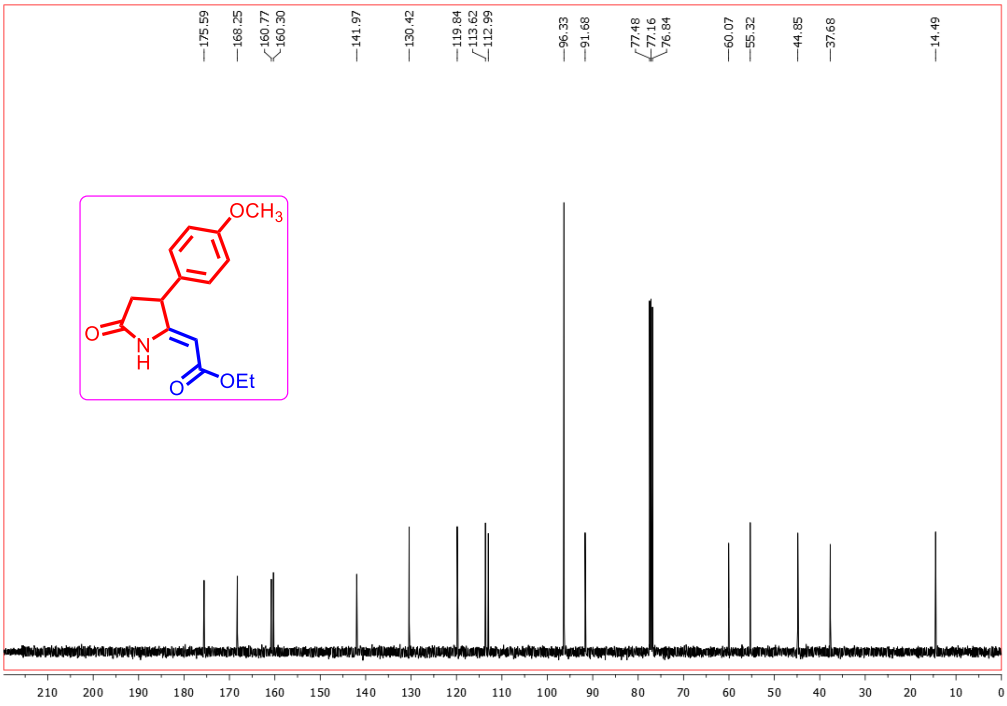
^{13}C (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (Z)-2-(5-oxo-3-(m-tolyl)pyrrolidin-2-ylidene)acetate **12c.**



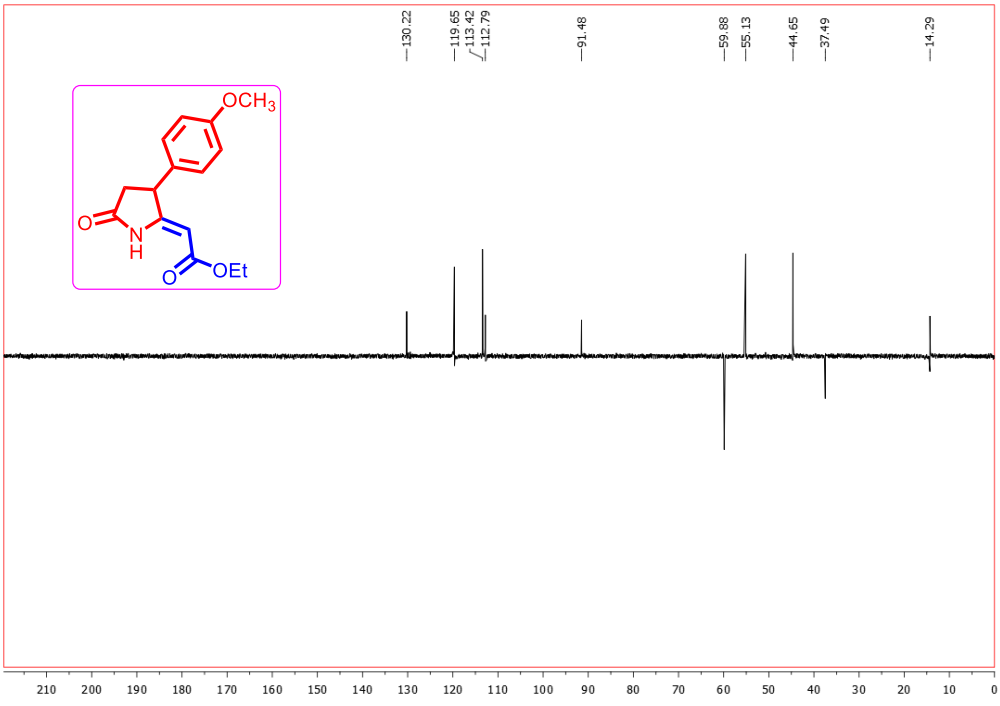
DEPT-135 (100 MHz, $CDCl_{3+}$) NMR spectrum of Ethyl (Z)-2-(5-oxo-3-(m-tolyl)pyrrolidin-2-ylidene)acetate **12c.**



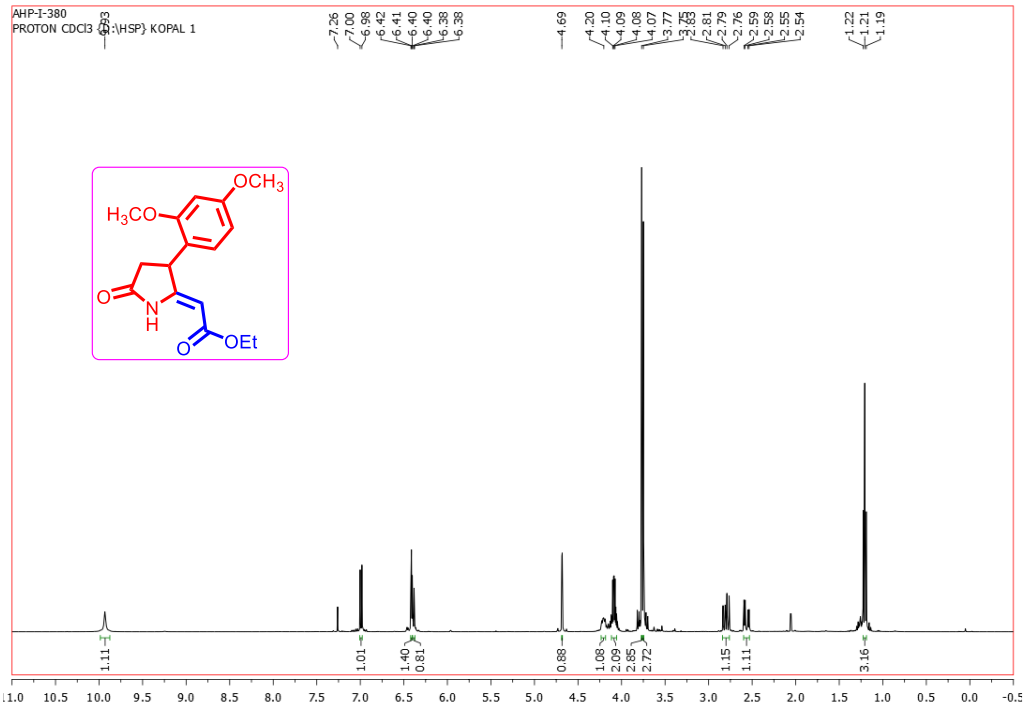
^{1}H (400 MHz, $CDCl_3$) NMR spectrum of Ethyl (*Z*)-2-(3-(4-methoxyphenyl)-5-oxopyrrolidin-2-ylidene)acetate **12d.**



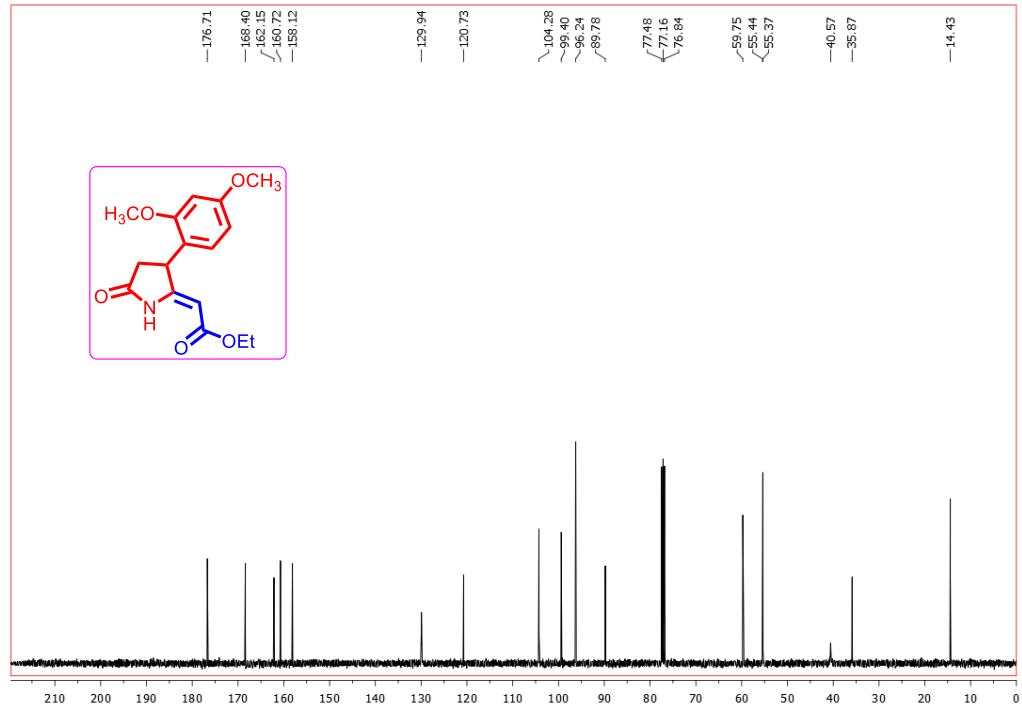
^{13}C (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (*Z*)-2-(3-(4-methoxyphenyl)-5-oxopyrrolidin-2-ylidene)acetate **12d.**



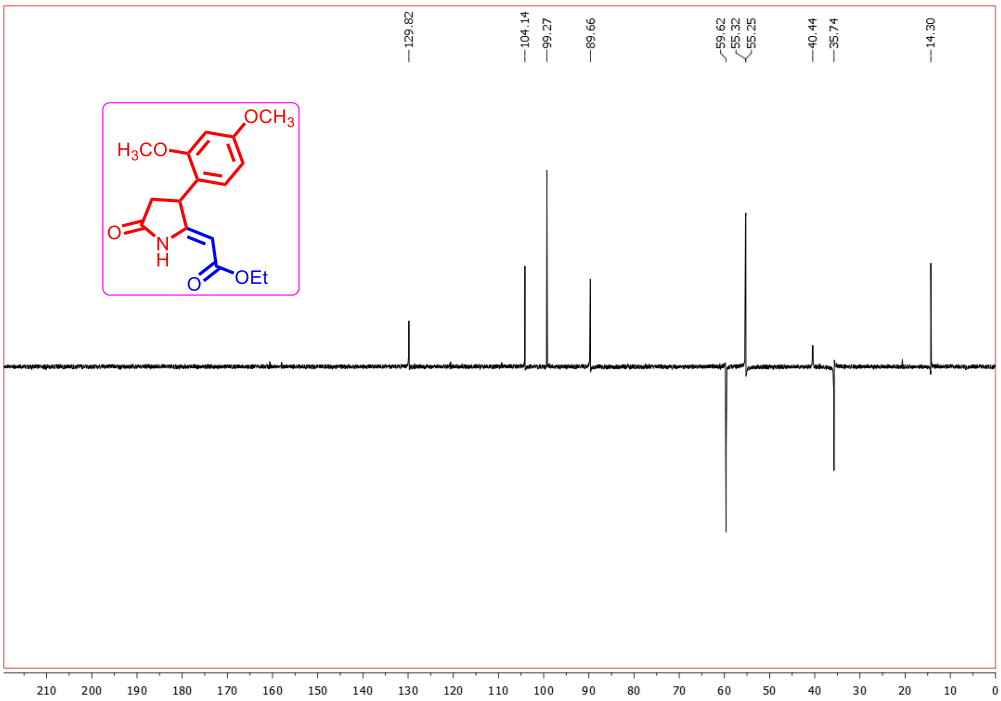
DEPT-135 (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (Z)-2-(3-(4-methoxyphenyl)-5-oxopyrrolidin-2-ylidene)acetate **12d.**



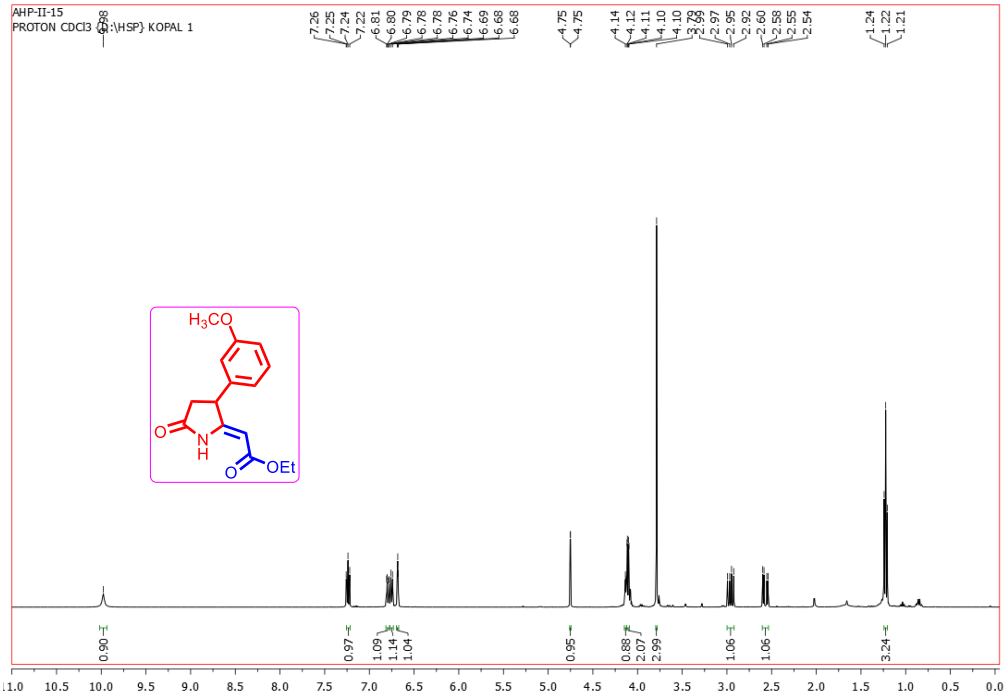
^{1}H (400 MHz, $CDCl_3$) NMR spectrum of Ethyl (*Z*)-2-(3-(2,4-dimethoxyphenyl)-5-oxopyrrolidin-2-ylidene)acetate **12e.**



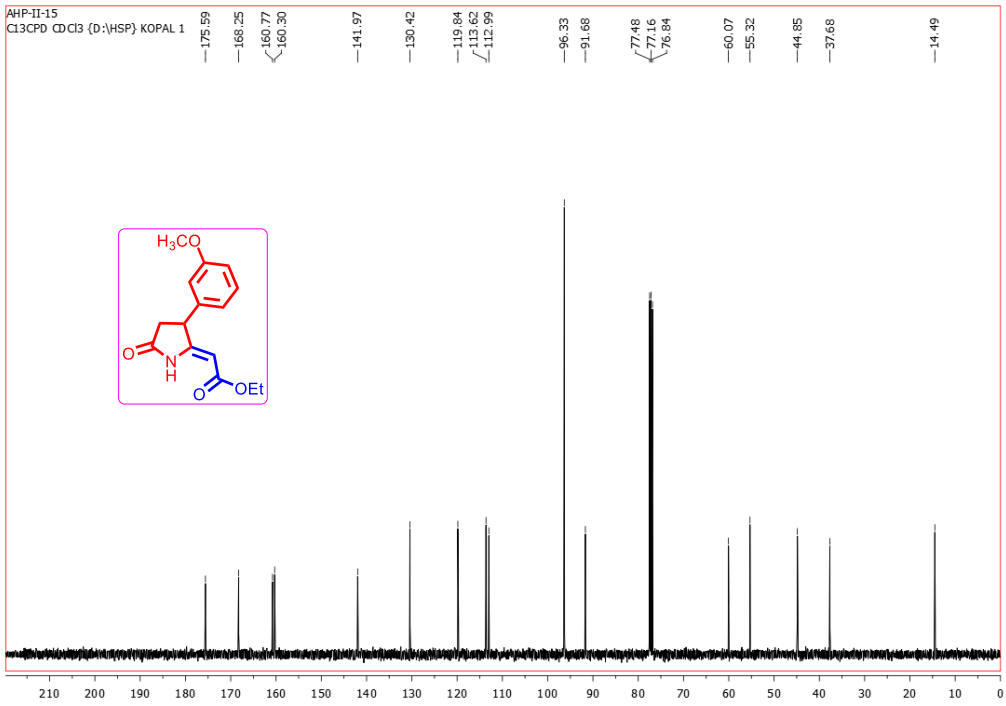
^{13}C (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (*Z*)-2-(3-(2,4-dimethoxyphenyl)-5-oxopyrrolidin-2-ylidene)acetate **12e.**



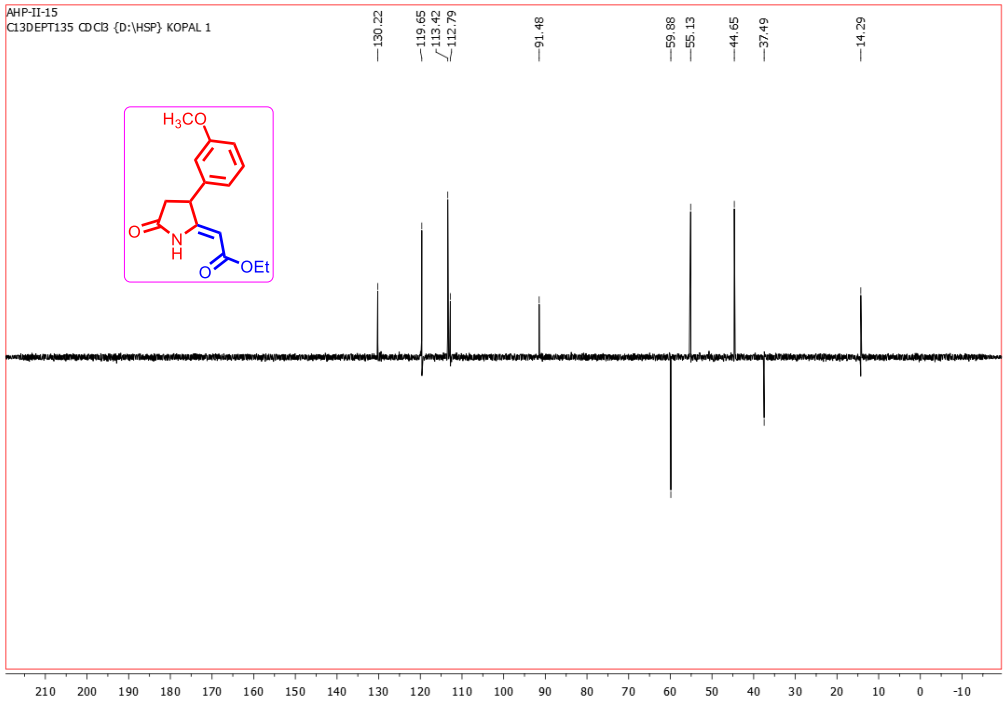
DEPT-135 (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (*Z*)-2-(3-(2,4-dimethoxyphenyl)-5-oxopyrrolidin-2-ylidene)acetat **12e.**



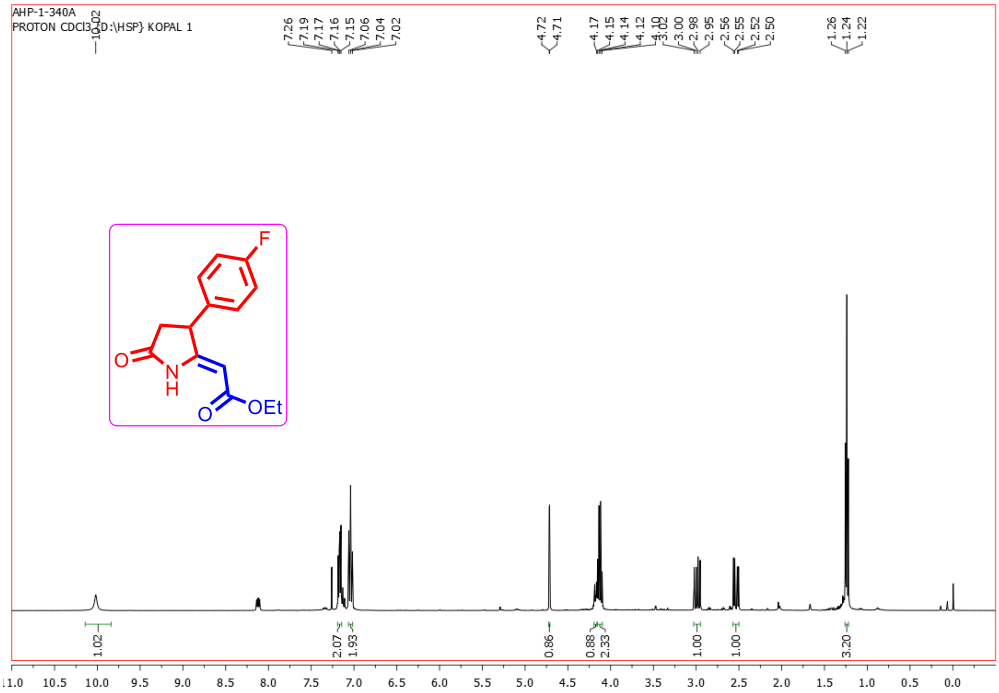
^{1}H (400 MHz, $CDCl_3$) NMR spectrum of Ethyl (Z)-2-(3-(3-methoxyphenyl)-5-oxopyrrolidin-2-ylidene)acetate **12f.**



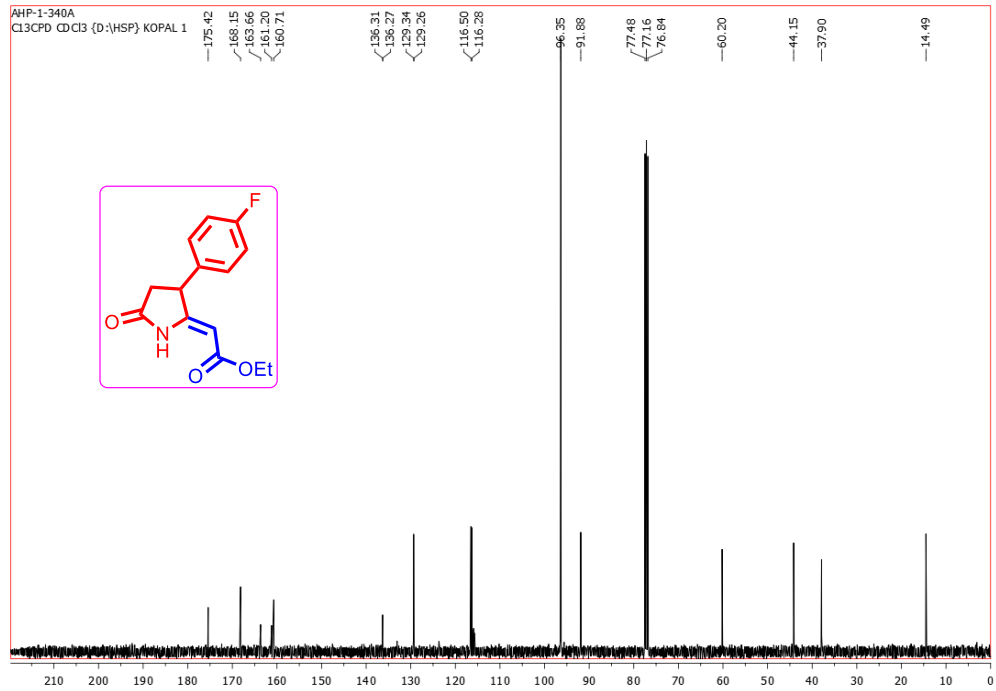
^{13}C (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (*Z*)-2-(3-(3-methoxyphenyl)-5-oxopyrrolidin-2-ylidene)acetate **12f.**



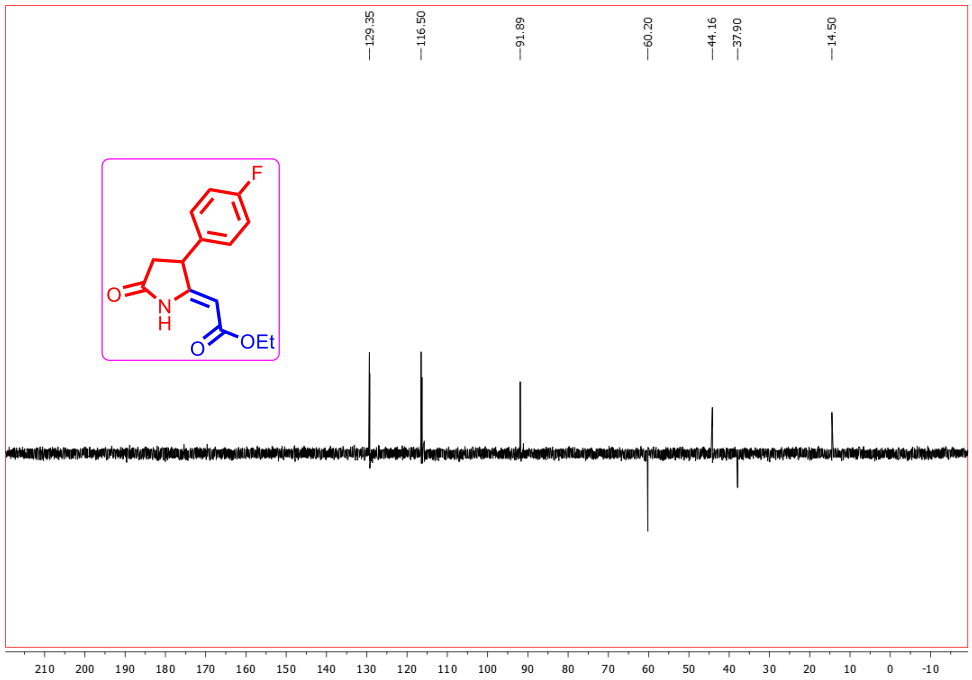
DEPT-135 (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (*Z*)-2-(3-(3-methoxyphenyl)-5-oxopyrrolidin-2-ylidene)acetate **12f.**



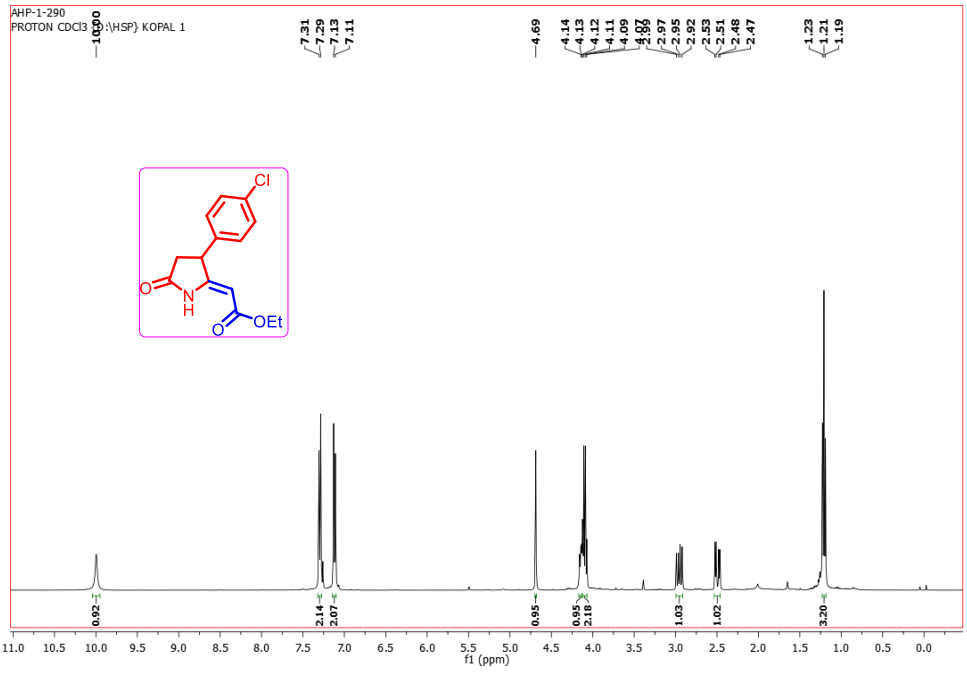
^{1}H (400 MHz, $CDCl_3$) NMR spectrum of Ethyl (Z)-2-(3-(4-fluorophenyl)-5-oxopyrrolidin-2-ylidene)acetate **12g.**



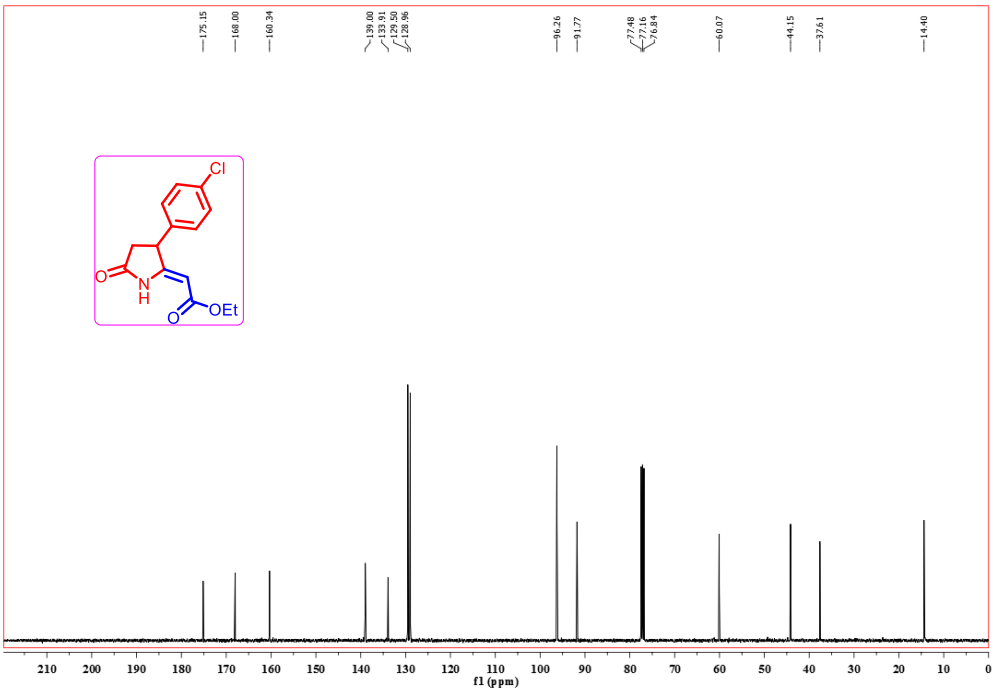
^{13}C (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (Z)-2-(3-(4-fluorophenyl)-5-oxopyrrolidin-2-ylidene)acetate **12g.**



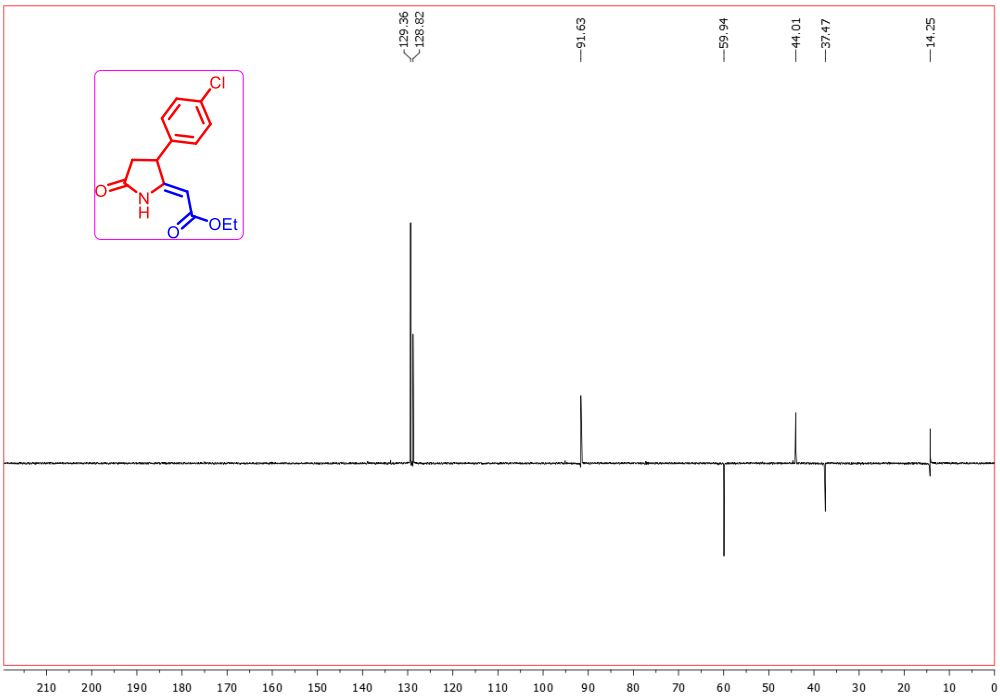
DEPT-135 (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (Z)-2-(3-(4-fluorophenyl)-5-oxopyrrolidin-2-ylidene)acetate **12g.**



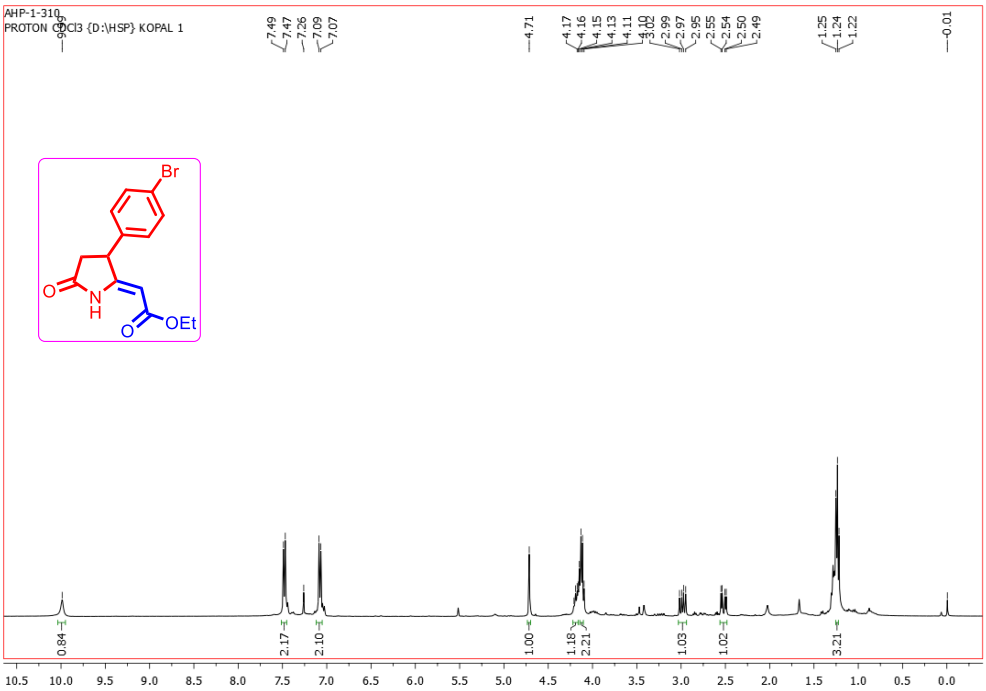
^1H (400 MHz, $CDCl_3$) NMR spectrum of Ethyl (Z)-2-(3-(4-chlorophenyl)-5-oxopyrrolidin-2-ylidene)acetate **12h.**



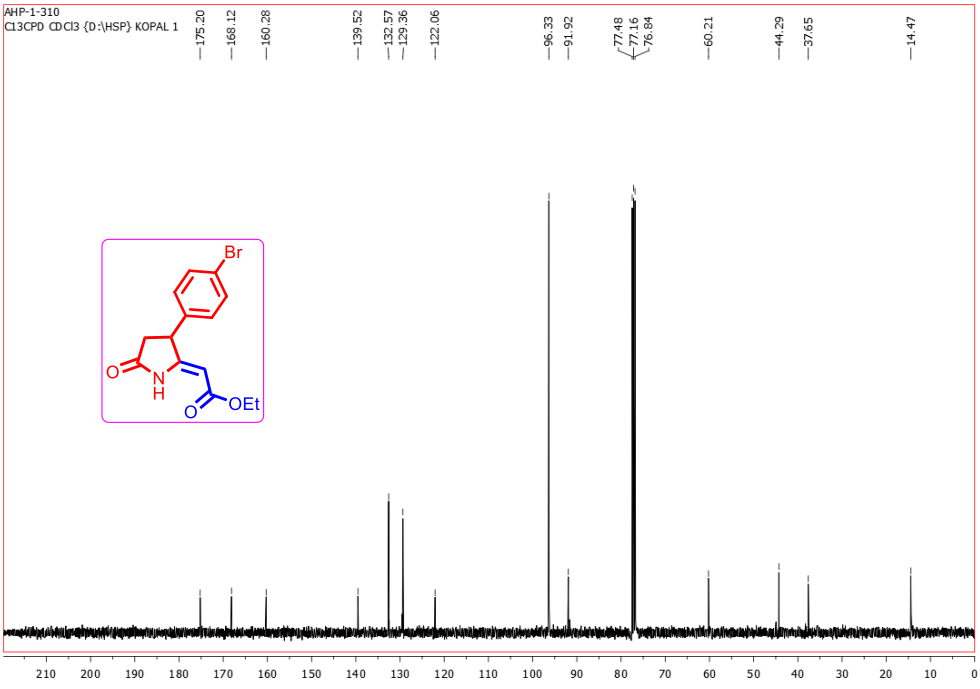
^{13}C (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (Z)-2-(3-(4-chlorophenyl)-5-oxopyrrolidin-2-ylidene)acetate **12h.**



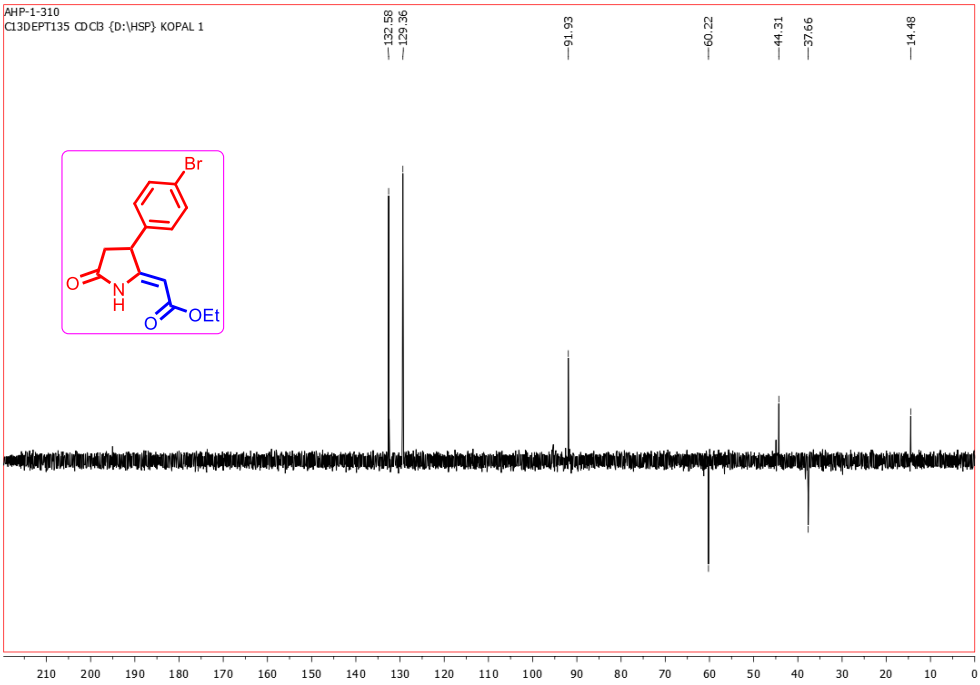
DEPT-135 (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (Z)-2-(3-(4-chlorophenyl)-5-oxopyrrolidin-2-ylidene)acetate **12h.**



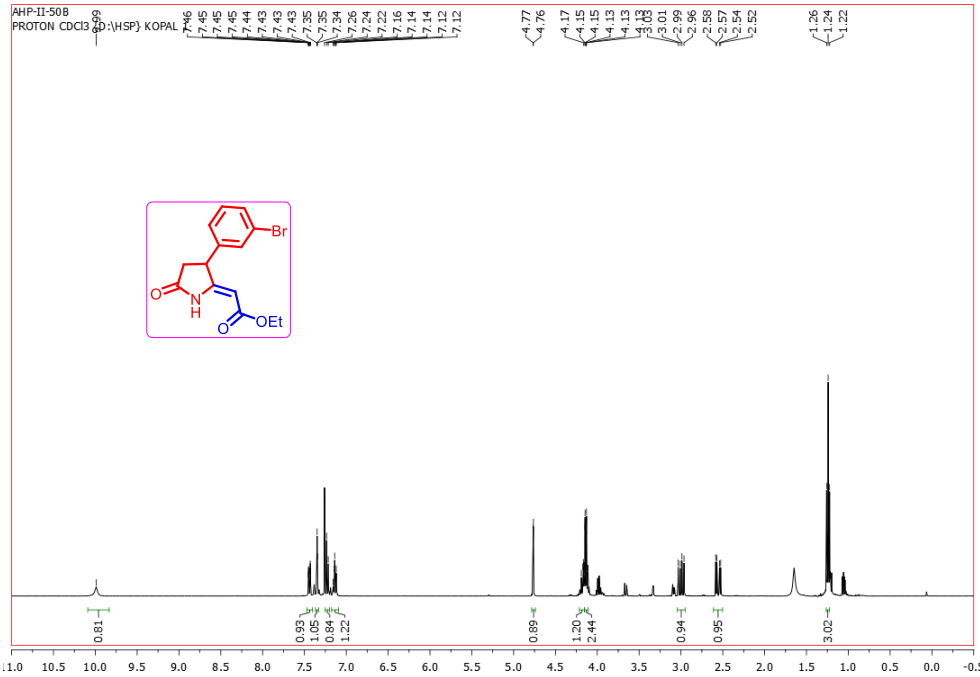
^{1}H (400 MHz, $CDCl_3$) NMR spectrum of ethyl (Z)-2-(3-(4-bromophenyl)-5-oxopyrrolidin-2-ylidene)acetate **12i.**



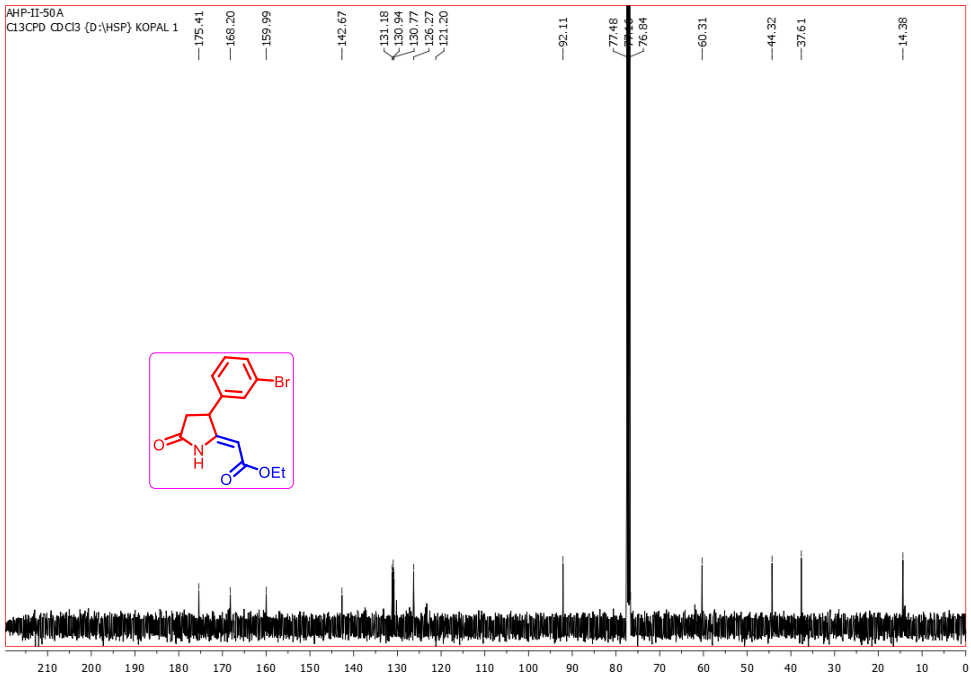
^{13}C (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (*Z*)-2-(3-(4-bromophenyl)-5-oxopyrrolidin-2-ylidene)acetate **12i.**



DEPT-135 (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (Z)-2-(3-(4-bromophenyl)-5-oxopyrrolidin-2-ylidene)acetate **12i.**



^1H (400 MHz, $CDCl_3$) NMR spectrum of Ethyl (Z)-2-(3-(3-bromophenyl)-5-oxopyrrolidin-2-ylidene)acetate **12j.**



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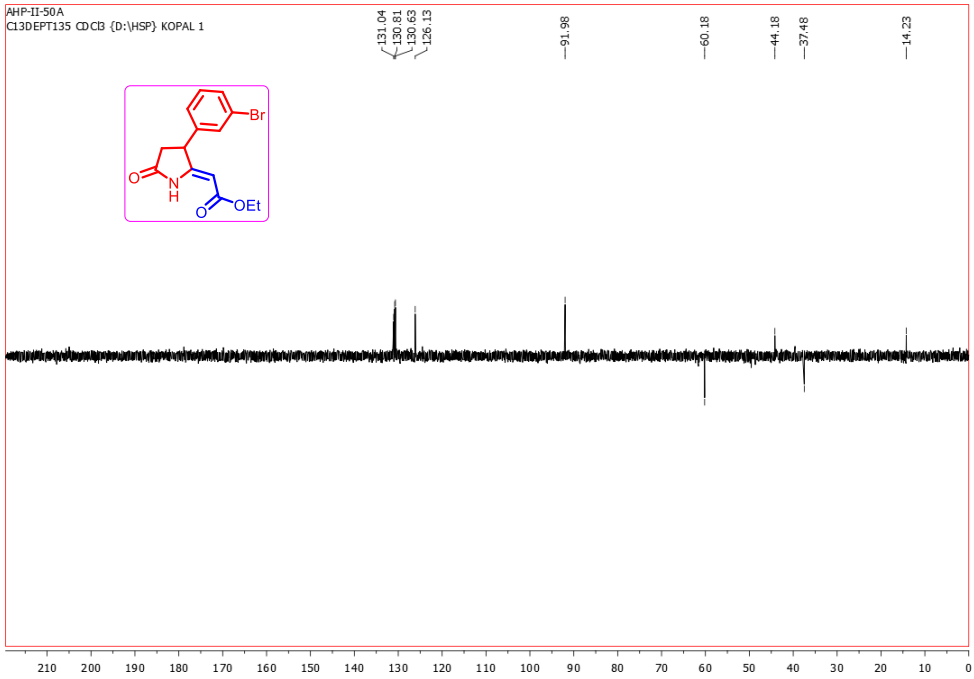
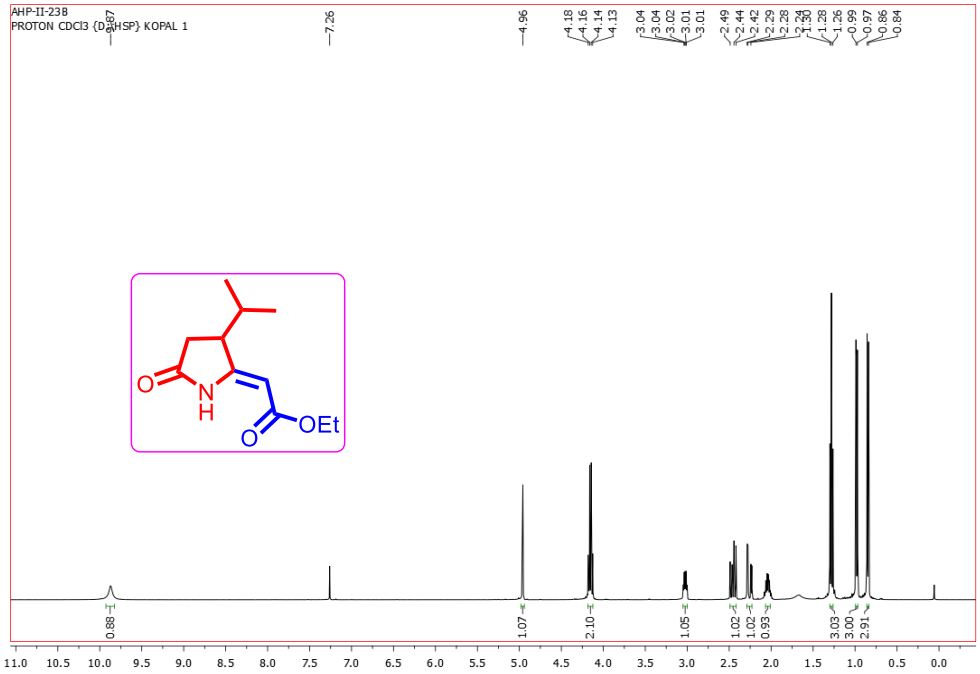
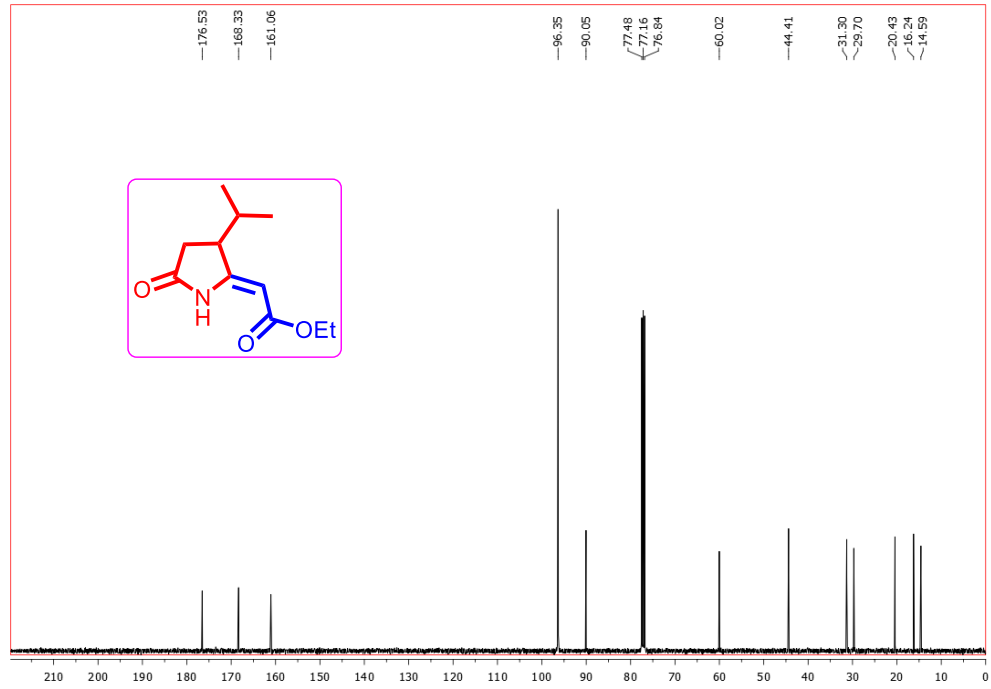


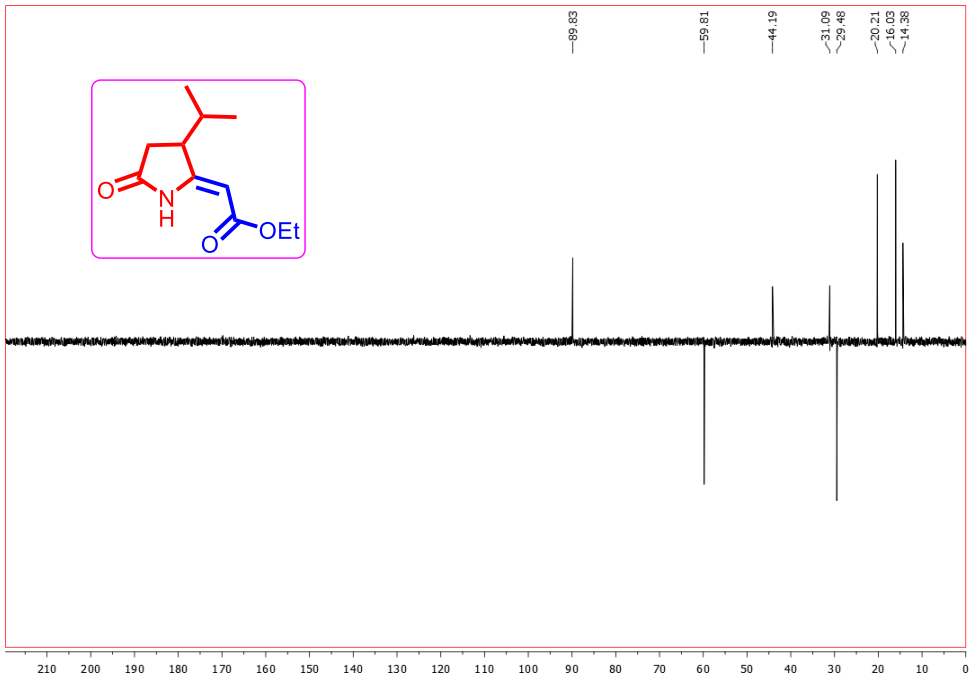
DEPT-135 (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (*Z*)-2-(3-(3-bromophenyl)-5-oxopyrrolidin-2-ylidene)acetate **12j.**



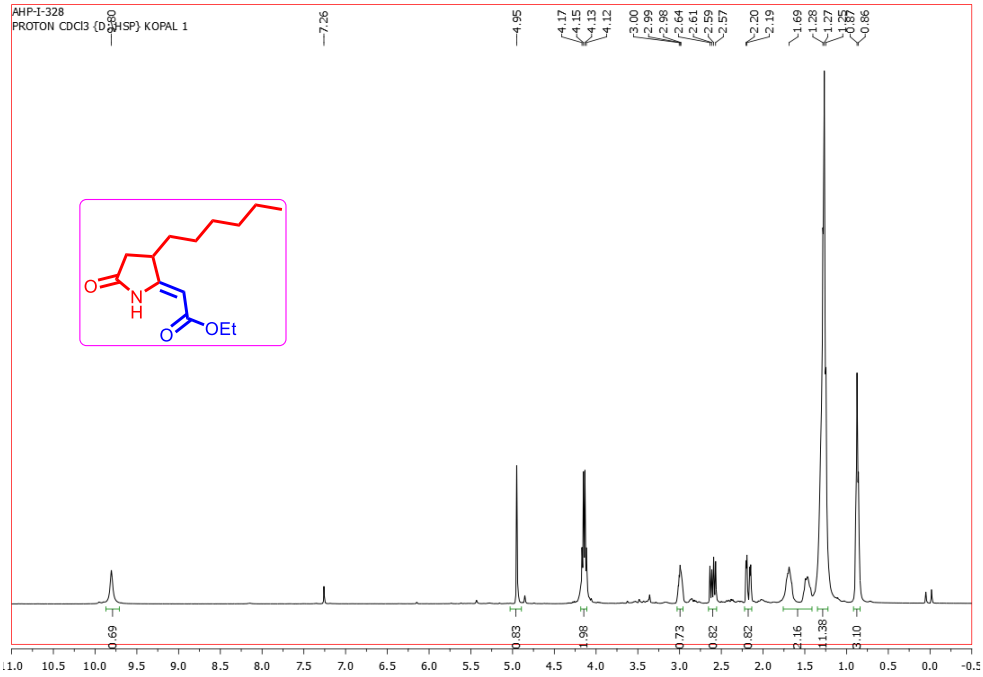
^{1}H (400 MHz, $CDCl_3$) NMR spectrum of ethyl (Z)-2-(3-isopropyl-5-oxopyrrolidin-2-ylidene)acetate **12l.**



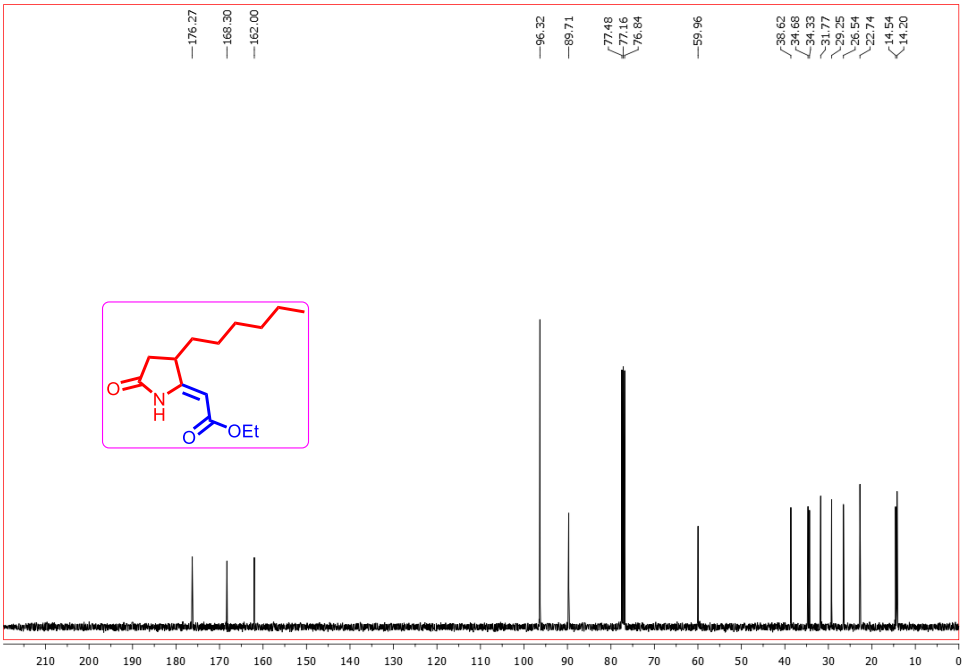
^{13}C (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (Z)-2-(3-isopropyl-5-oxopyrrolidin-2-ylidene)acetate **12l.**



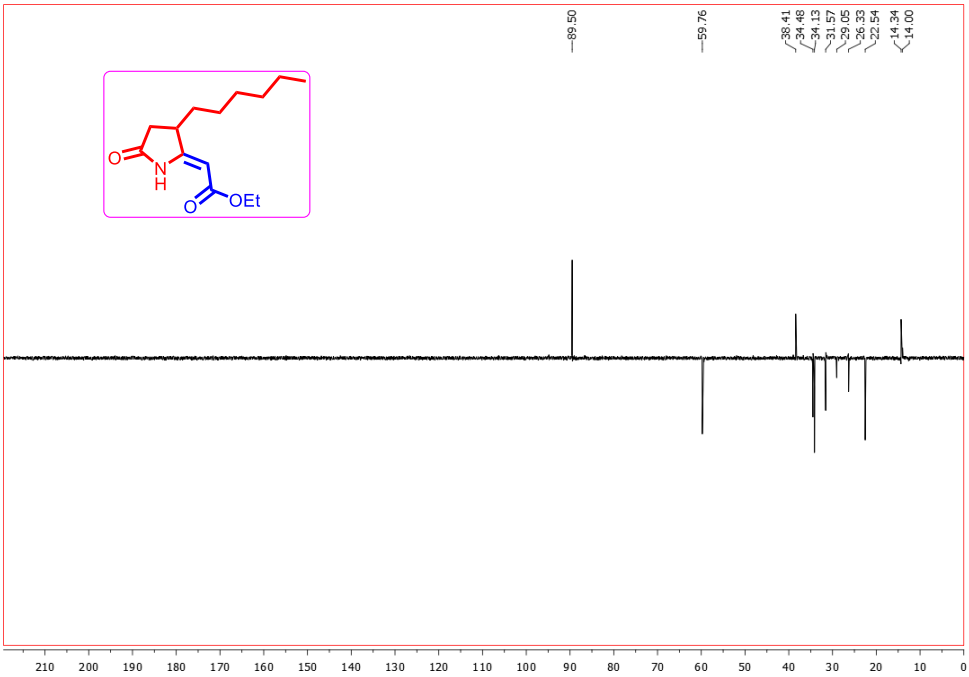
DEPT-135 (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (Z)-2-(3-isopropyl-5-oxopyrrolidin-2-ylidene)acetate **12l.**



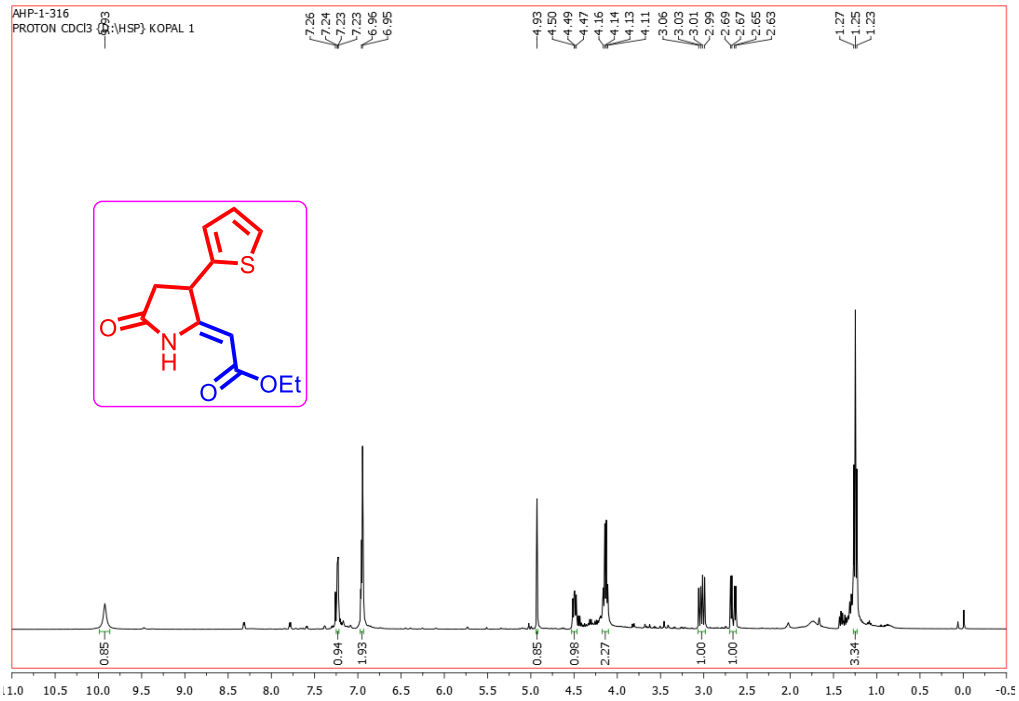
^1H (400 MHz, $CDCl_3$) NMR spectrum of Ethyl (Z)-2-(3-hexyl-5-oxopyrrolidin-2-ylidene)acetate **12m.**



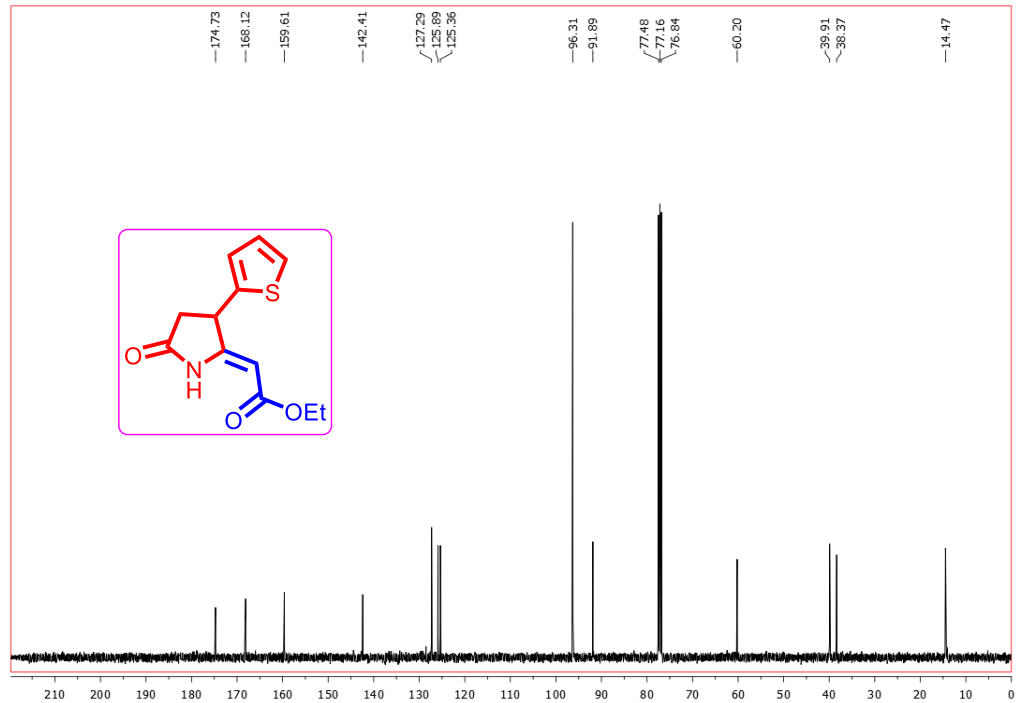
^{13}C (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (Z)-2-(3-hexyl-5-oxopyrrolidin-2-ylidene)acetate **12m.**



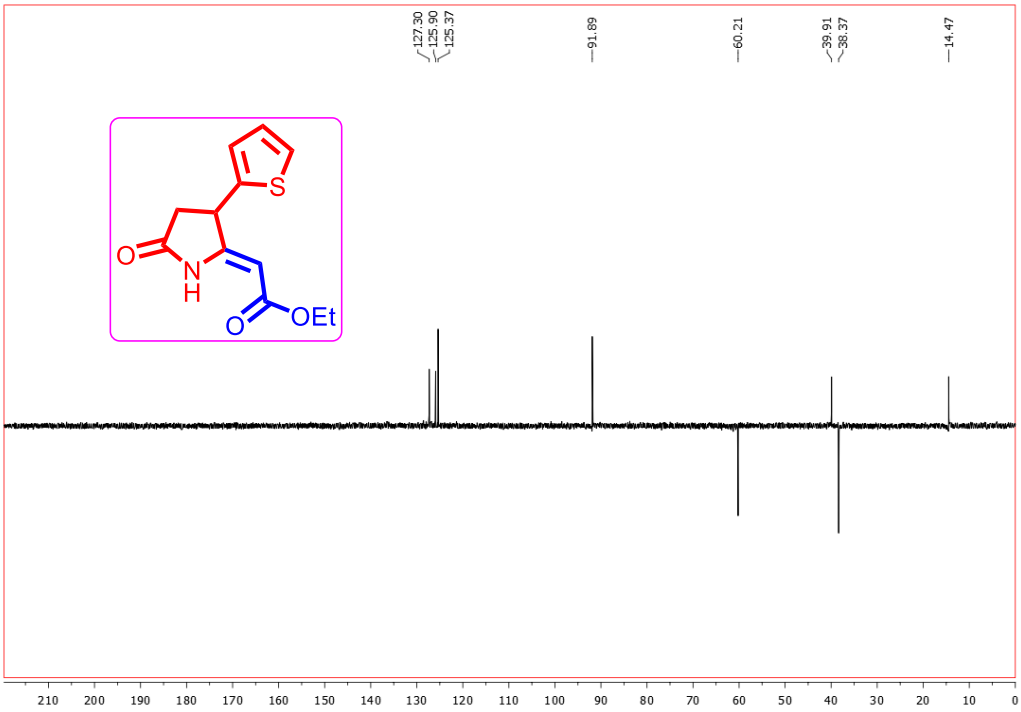
DEPT-135 (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (Z)-2-(3-hexyl-5-oxopyrrolidin-2-ylidene)acetate **12m.**



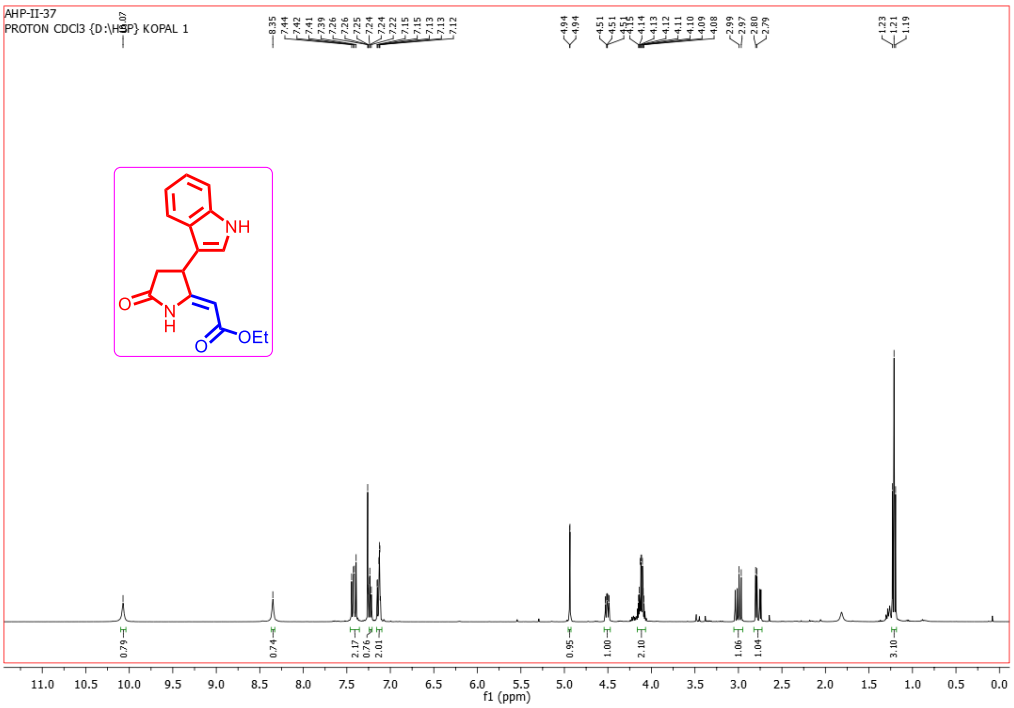
^{1}H (400 MHz, $CDCl_3$) NMR spectrum of Ethyl (Z)-2-(5-oxo-3-(thiophen-2-yl)pyrrolidin-2-ylidene)acetate **12k.**



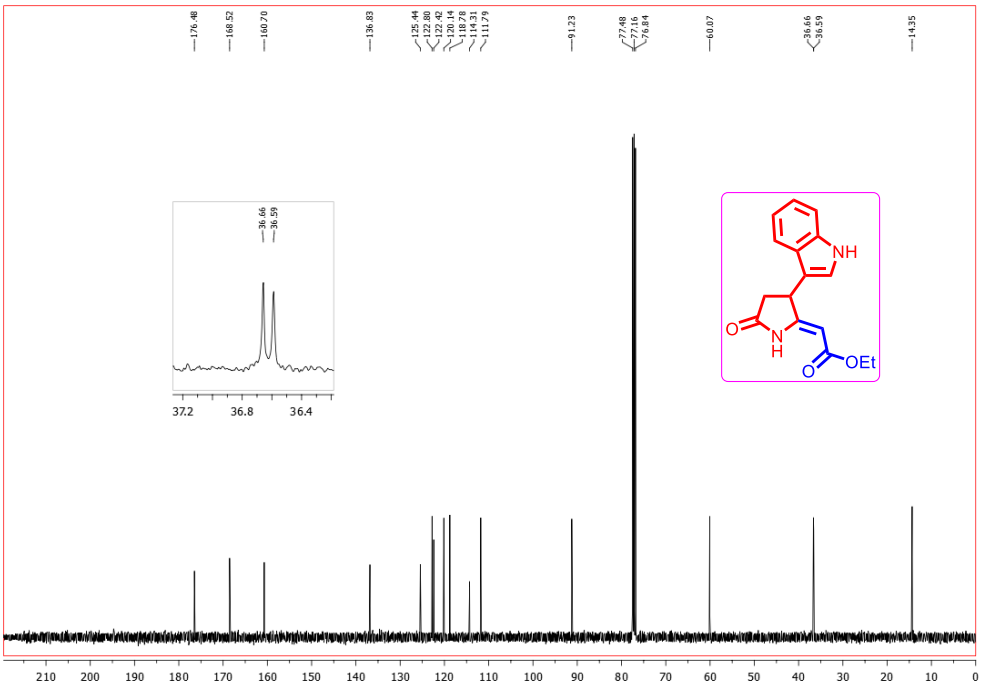
^{13}C (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (Z)-2-(5-oxo-3-(thiophen-2-yl)pyrrolidin-2-ylidene)acetate **12k.**



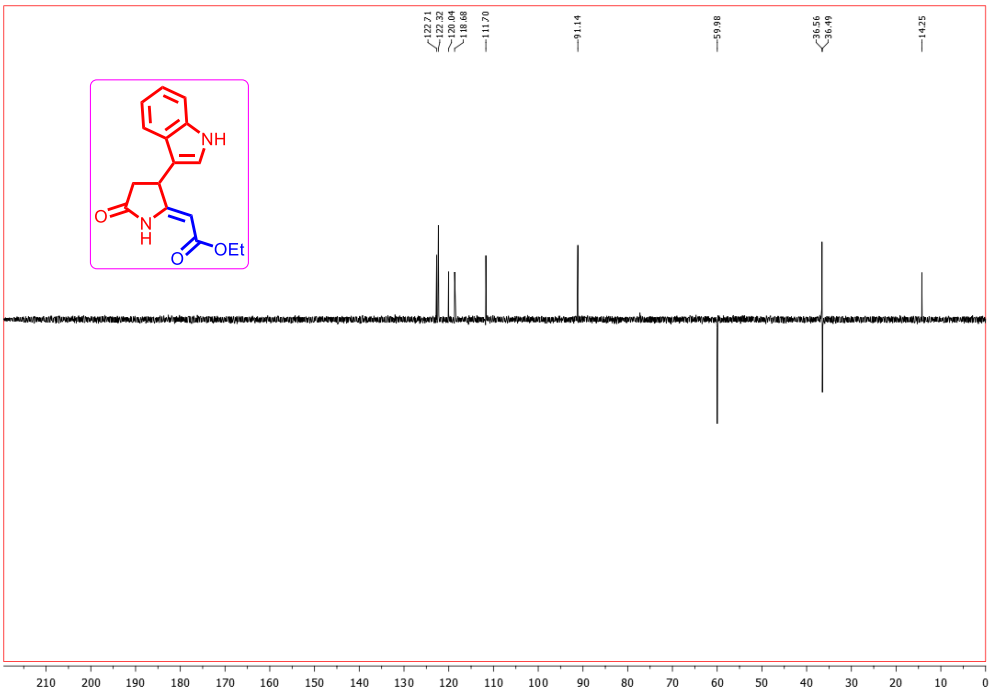
DEPT-135 (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (Z)-2-(5-oxo-3-(thiophen-2-yl)pyrrolidin-2-ylidene)acetate **12k.**



^{1}H (400 MHz, $CDCl_3$) NMR spectrum of Ethyl (*Z*)-2-(3-(1*H*-indol-3-yl)-5-oxopyrrolidin-2-ylidene)acetate **12n.**



^{13}C (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (*Z*)-2-(3-(1*H*-indol-3-yl)-5-oxopyrrolidin-2-ylidene)acetate **12n.**



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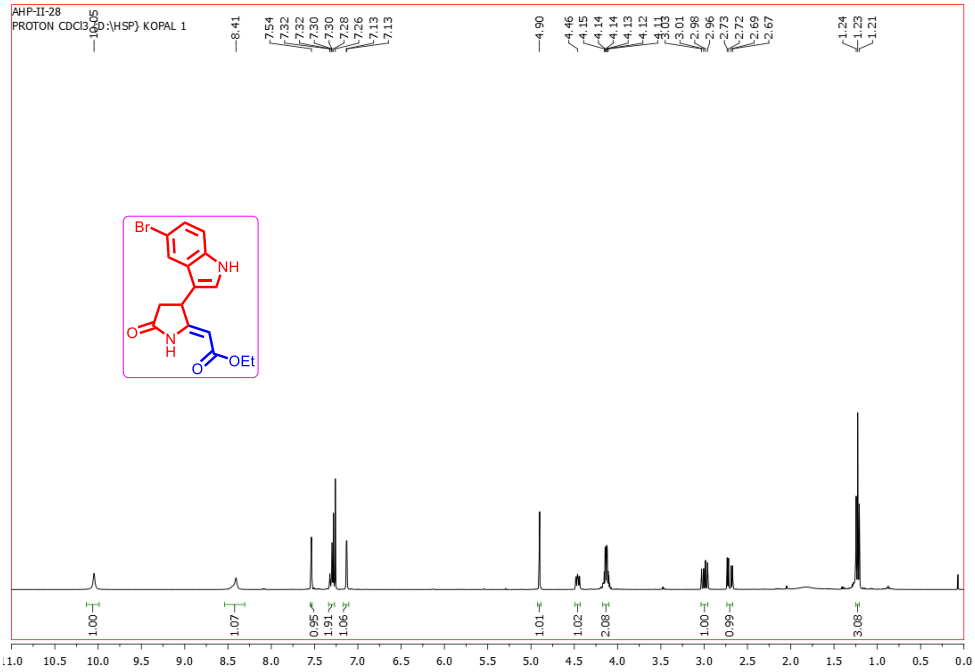

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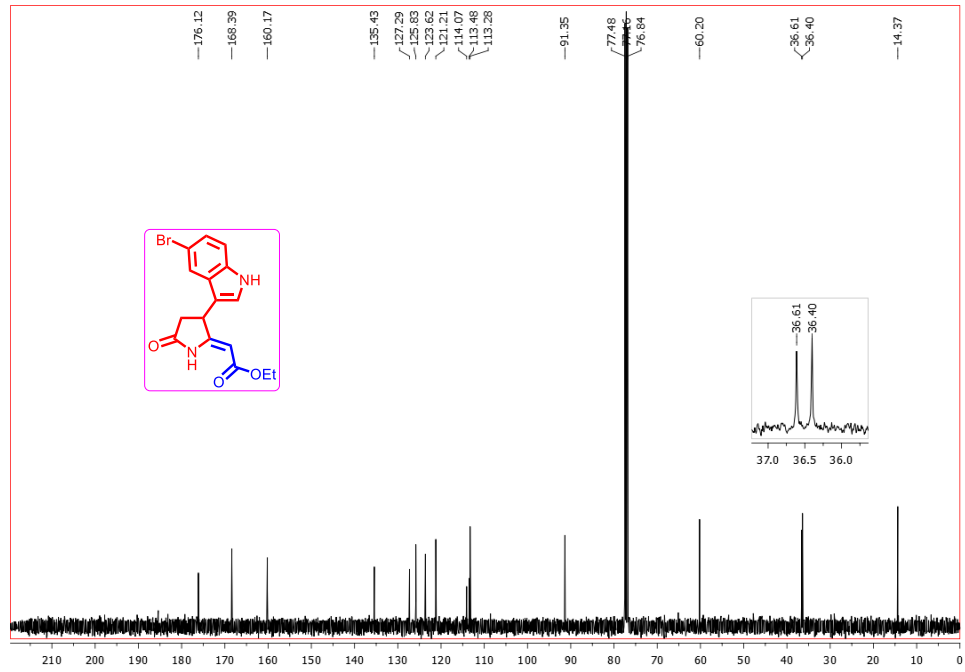
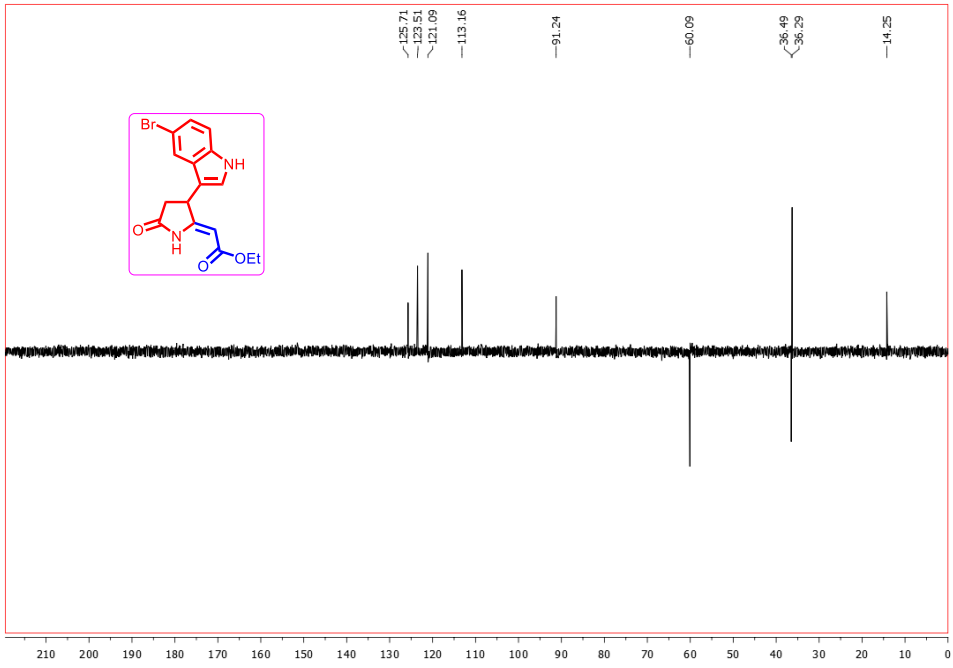
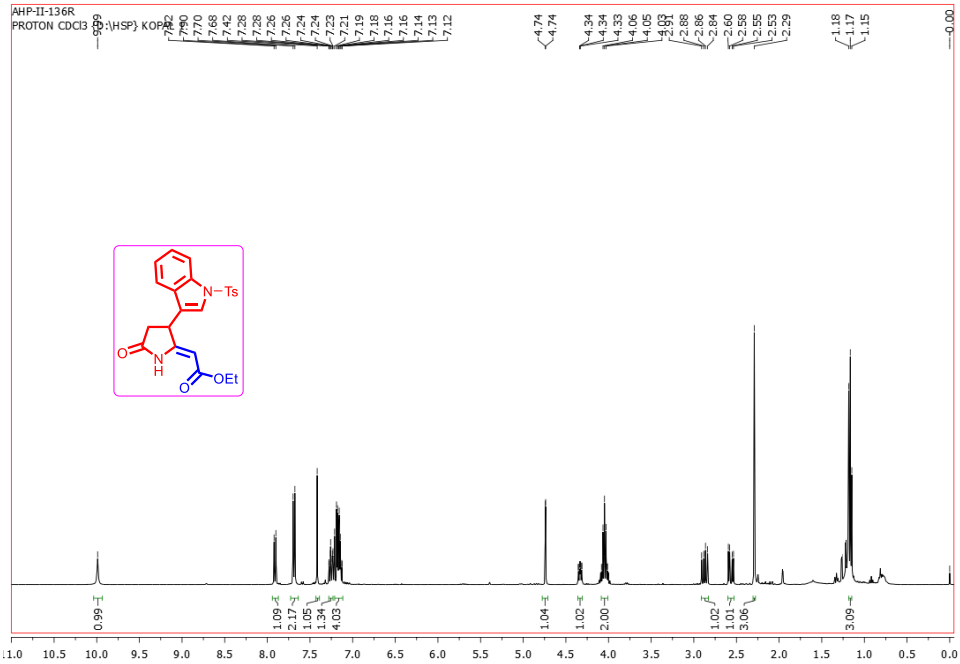


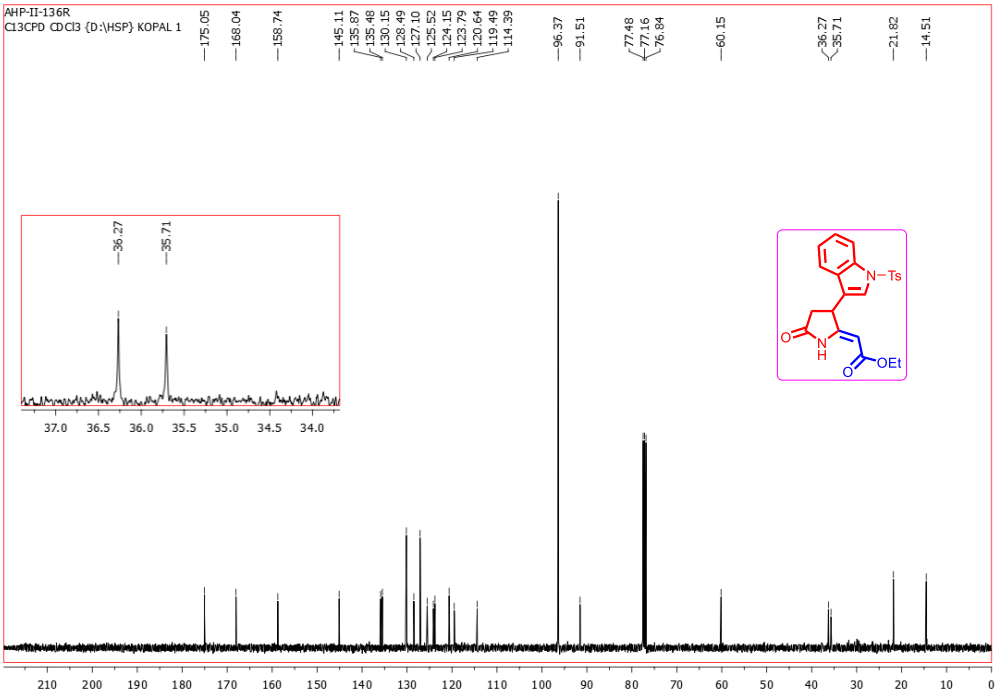
^{13}C (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (Z)-2-(3-(5-bromo-1*H*-indol-3-yl)-5-oxopyrrolidin-2-ylidene)acetate **12o.**



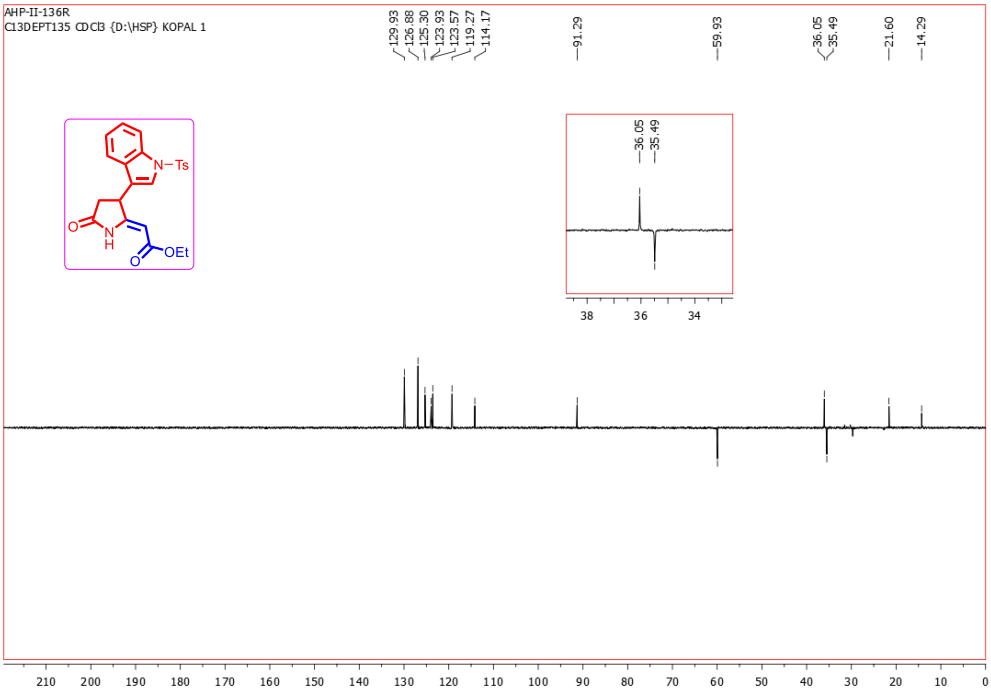
DEPT-135 (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (Z)-2-(3-(5-bromo-1*H*-indol-3-yl)-5-oxopyrrolidin-2-ylidene)acetate **12o.**



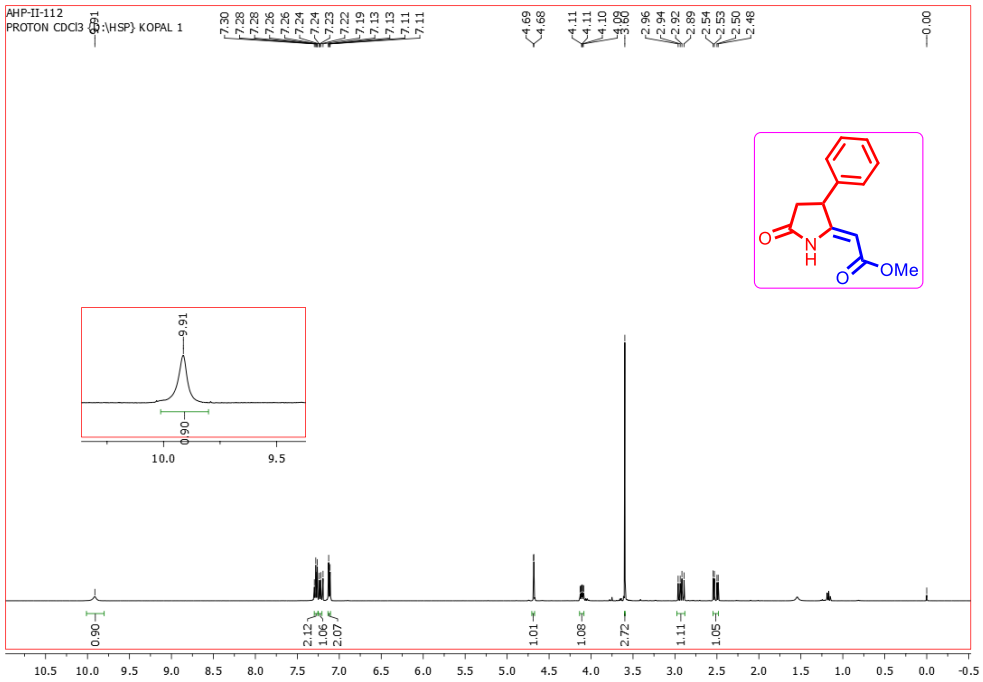
^{1}H (400 MHz, $CDCl_3$) NMR spectrum of Ethyl (Z)-2-(5-oxo-3-(1-tosyl-1*H*-indol-3-yl)pyrrolidin-2-ylidene)acetate **12p.**



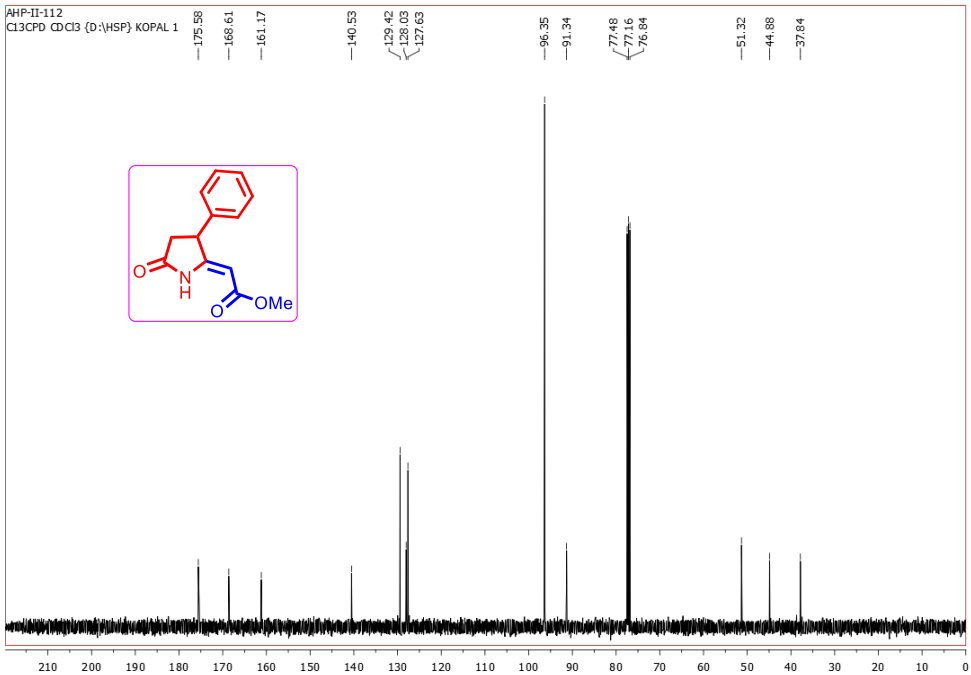
^{13}C (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (Z)-2-(5-oxo-3-(1-tosyl-1H-indol-3-yl)pyrrolidin-2-ylidene)acetate **12p.**



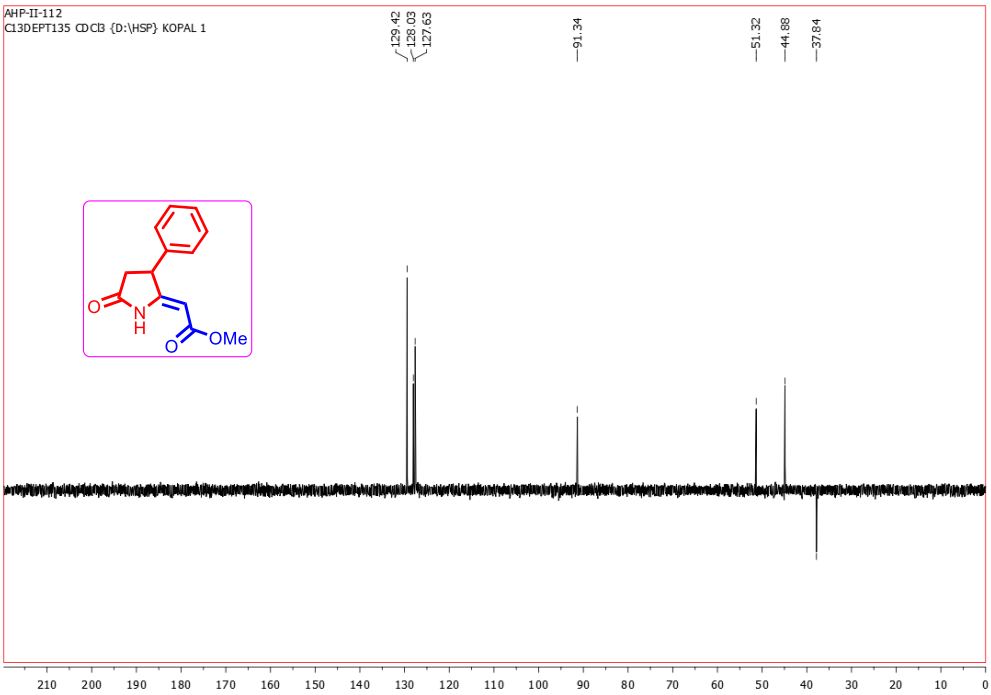
DEPT-135 (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (Z)-2-(5-oxo-3-(1-tosyl-1H-indol-3-yl)pyrrolidin-2-ylidene)acetate **12p.**



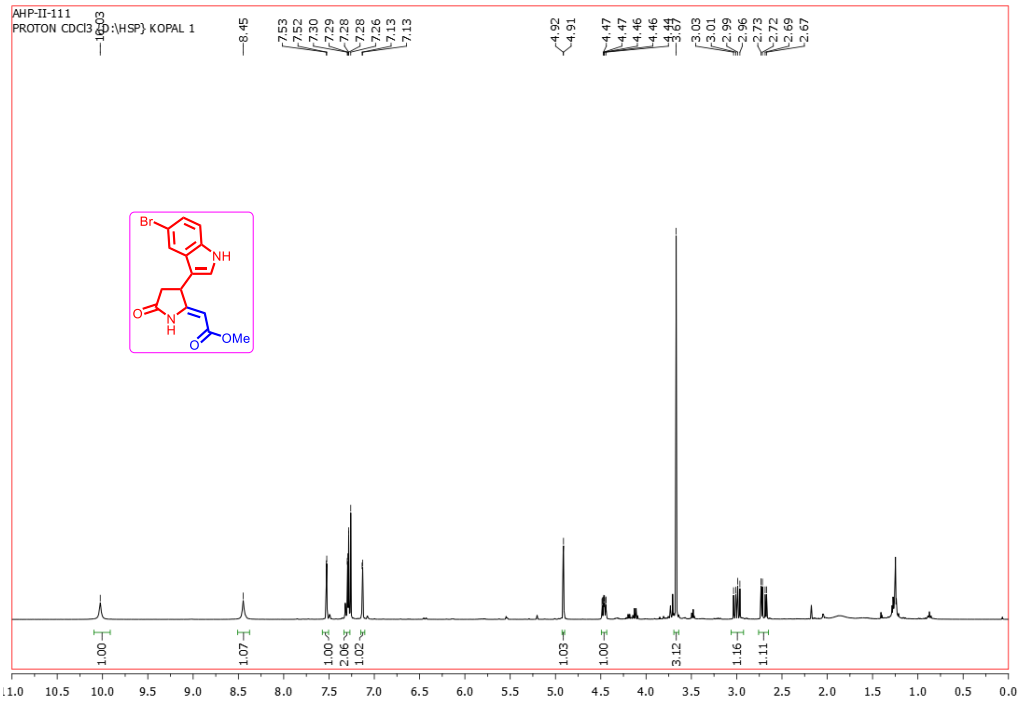
^{1}H (400 MHz, $CDCl_3$) NMR spectrum of Methyl (Z)-2-(5-oxo-3-phenylpyrrolidin-2-ylidene)acetate **12q.**



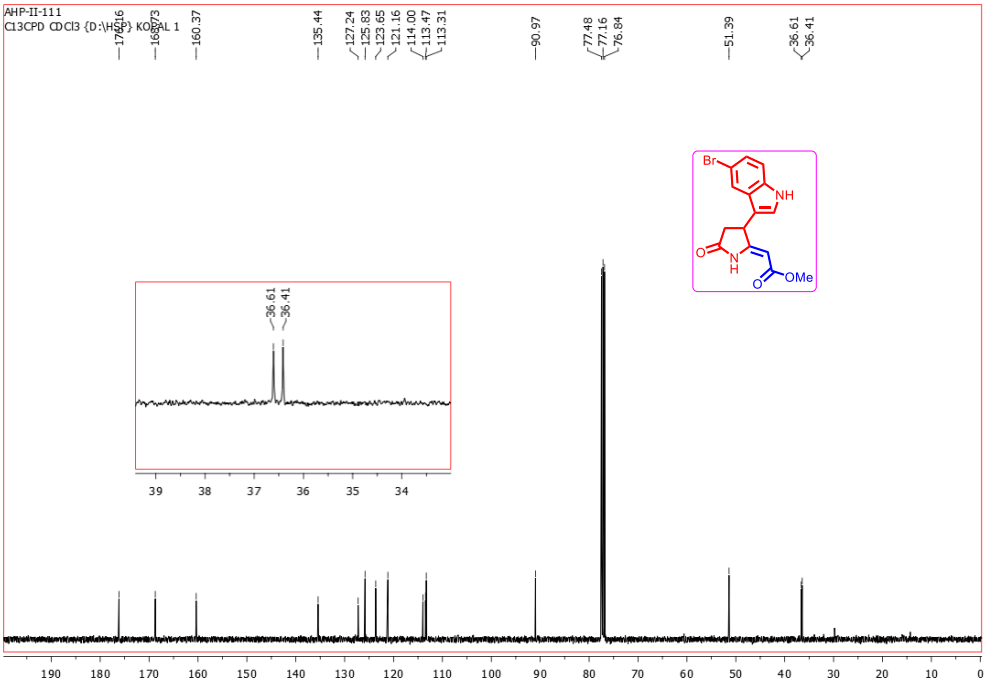
^{13}C (100 MHz, $CDCl_3$) NMR spectrum of Methyl (Z)-2-(5-oxo-3-phenylpyrrolidin-2-ylidene)acetate **12q.**



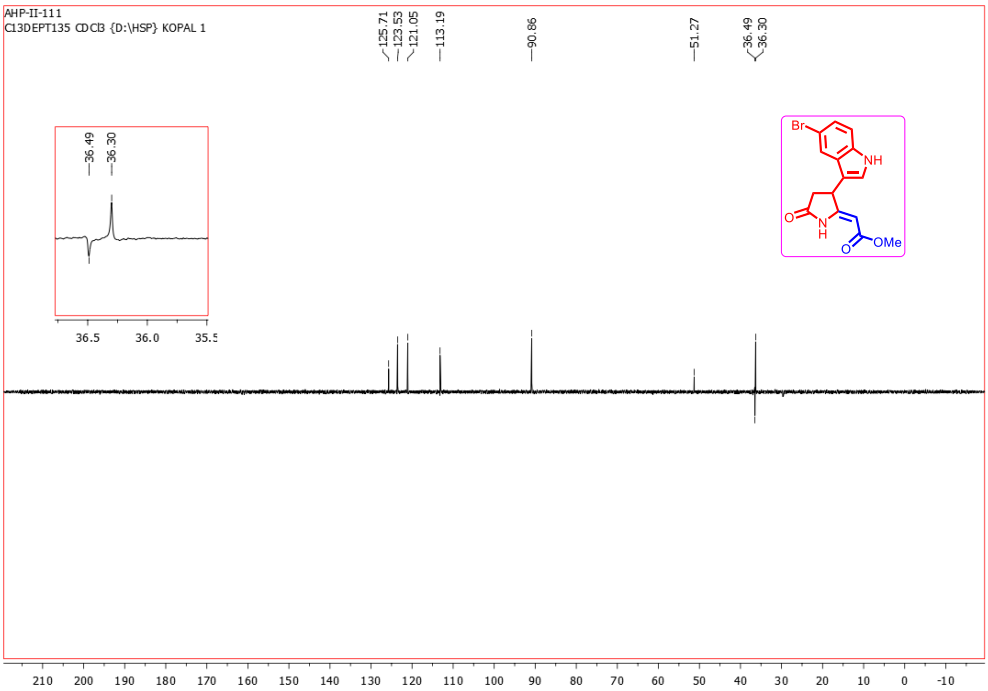
DEPT-135 (100 MHz, $CDCl_3$) NMR spectrum of Methyl (Z)-2-(5-oxo-3-phenylpyrrolidin-2-ylidene)acetate **12q.**



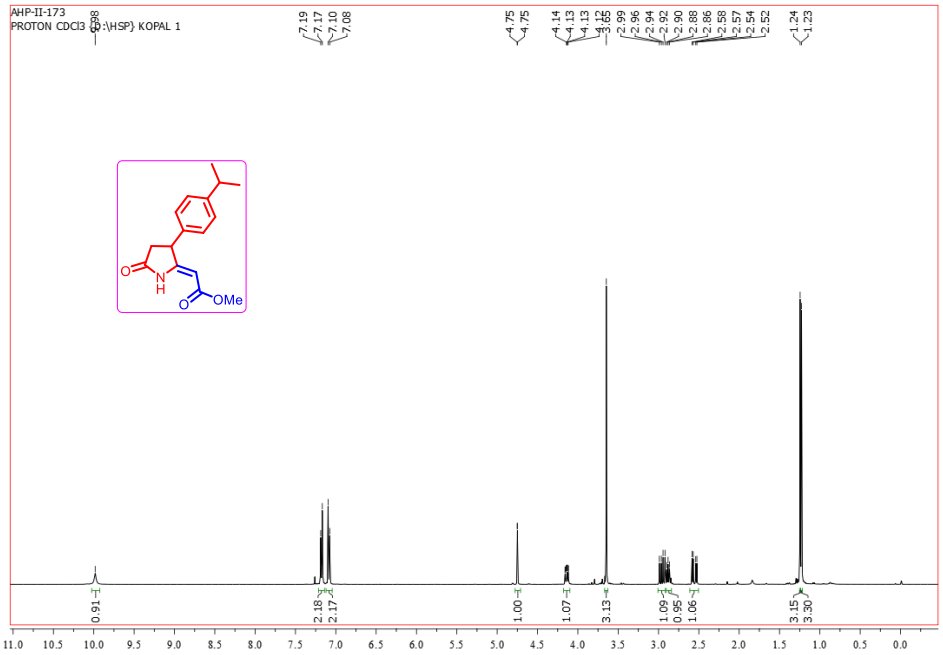
^1H (400 MHz, $CDCl_3$) NMR spectrum of Methyl (Z)-2-(3-(5-bromo-1H-indol-3-yl)-5-oxopyrrolidin-2-ylidene)acetate **12s.**



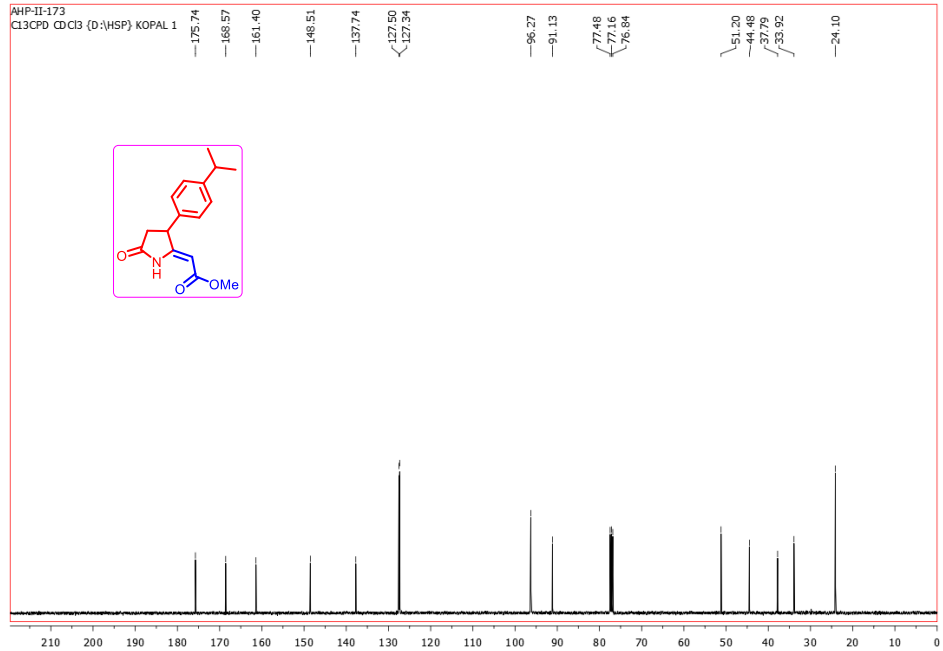
^{13}C (100 MHz, $CDCl_3$) NMR spectrum of Methyl (Z)-2-(3-(5-bromo-1H-indol-3-yl)-5-oxopyrrolidin-2-ylidene)acetate **12s.**



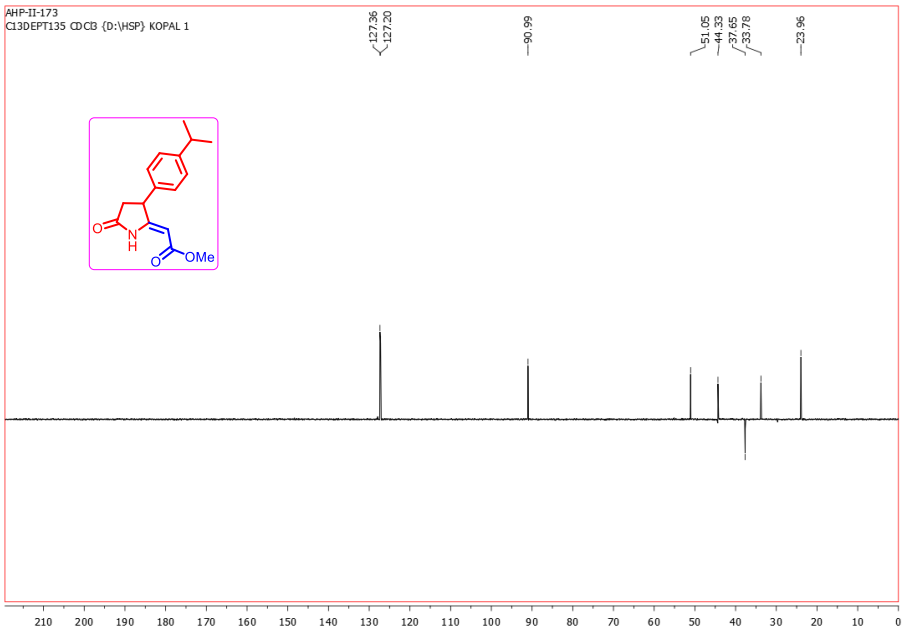
DEPT-135 (100 MHz, $CDCl_3$) NMR spectrum of Methyl (Z)-2-(3-(5-bromo-1H-indol-3-yl)-5-oxopyrrolidin-2-ylidene)acetate **12s.**



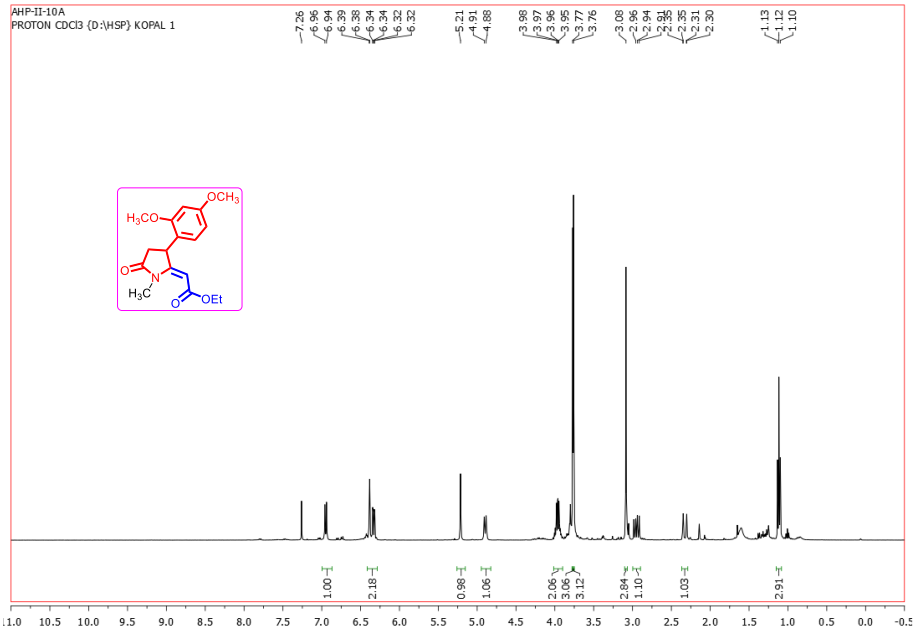
^{1}H (400 MHz, $CDCl_3$) NMR spectrum of Methyl (Z)-2-(3-(4-isopropylphenyl)-5-oxopyrrolidin-2-ylidene)acetate **12r.**



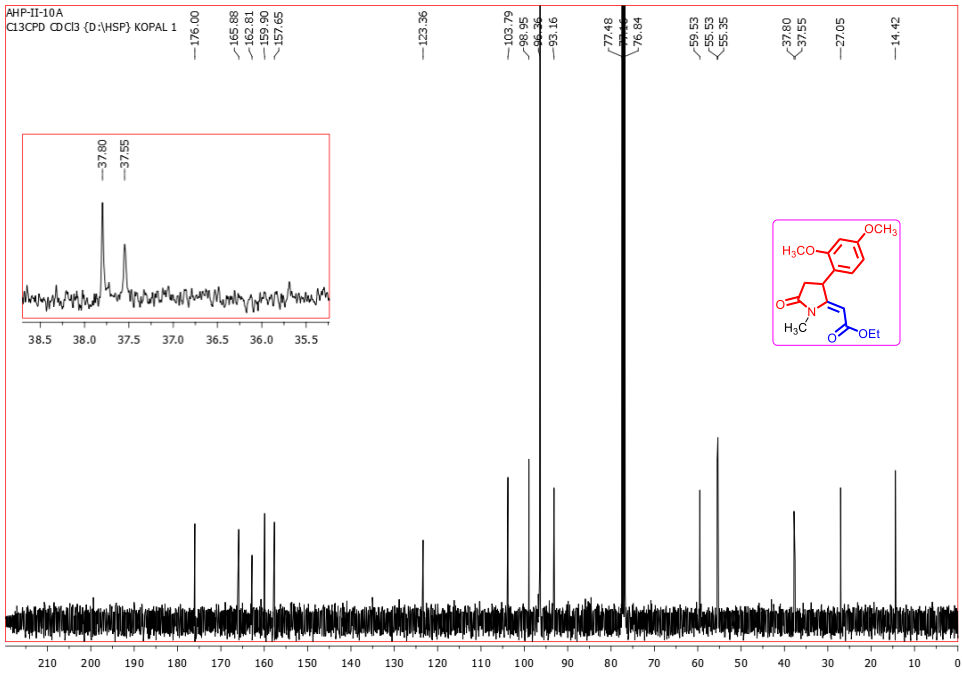
^{13}C (100 MHz, $CDCl_3$) NMR spectrum of Methyl (Z)-2-(3-(4-isopropylphenyl)-5-oxopyrrolidin-2-ylidene)acetate **12r.**



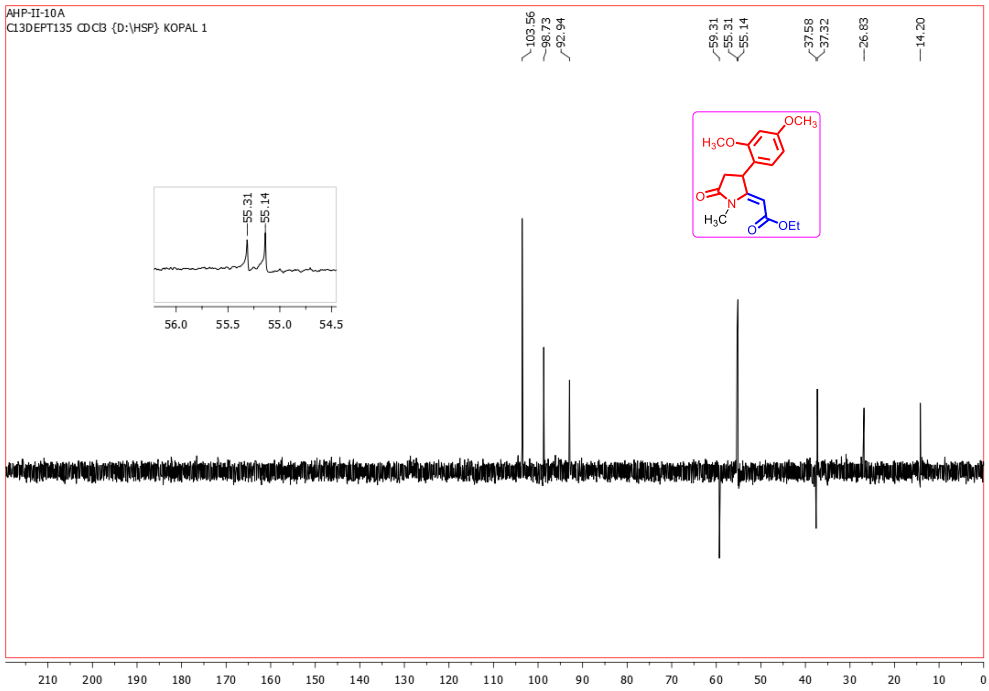
DEPT-135 (100 MHz, $CDCl_3$) NMR spectrum of Methyl (Z)-2-(3-(4-isopropylphenyl)-5-oxopyrrolidin-2-ylidene)acetate **12r.**



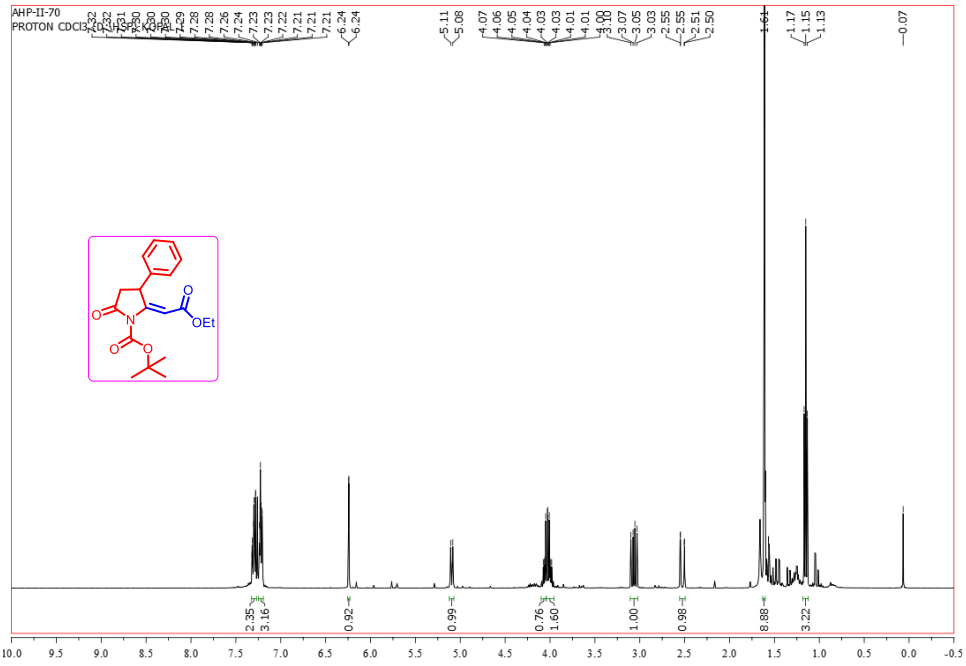
^1H (400 MHz, $CDCl_3$) NMR spectrum of Ethyl (Z)-2-(3-(2,4-dimethoxyphenyl)-1-methyl-5-oxopyrrolidin-2-ylidene)acetate **15.**



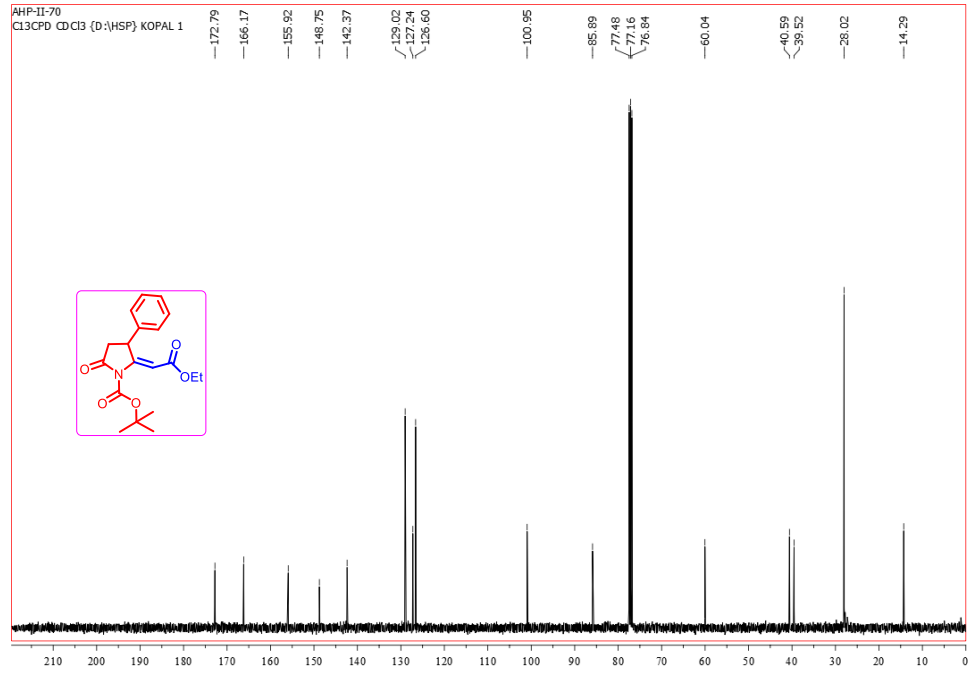
^{13}C (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (*Z*)-2-(3-(2,4-dimethoxyphenyl)-1-methyl-5-oxopyrrolidin-2-ylidene)acetate **15.**



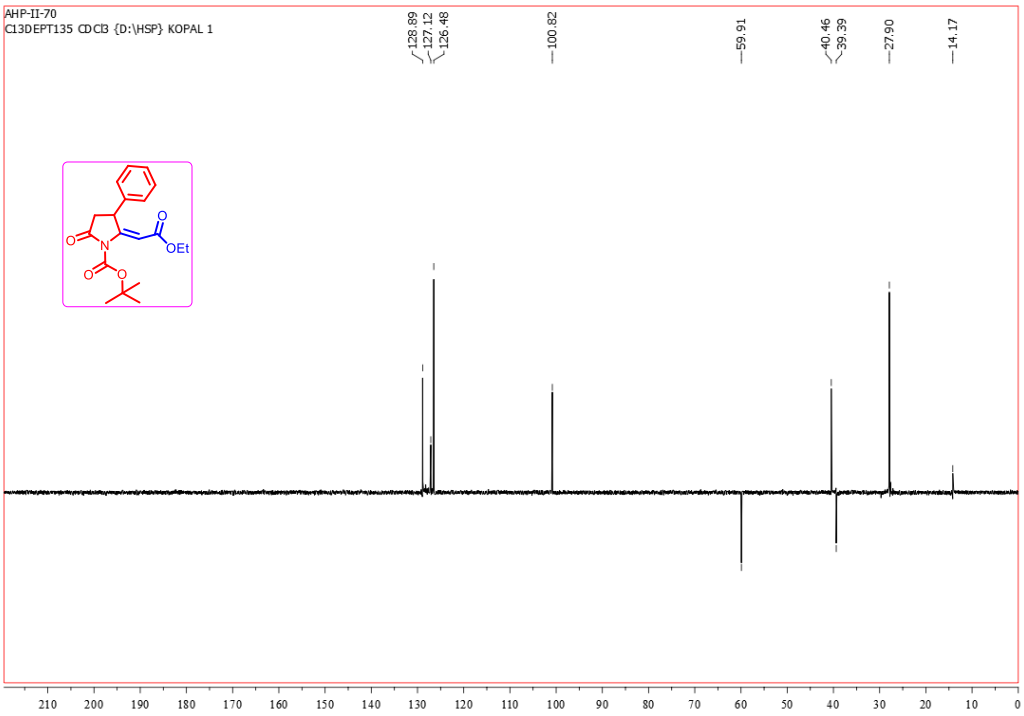
DEPT-135 (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (Z)-2-(3-(2,4-dimethoxyphenyl)-1-methyl-5-oxopyrrolidin-2-ylidene)acetate **15.**



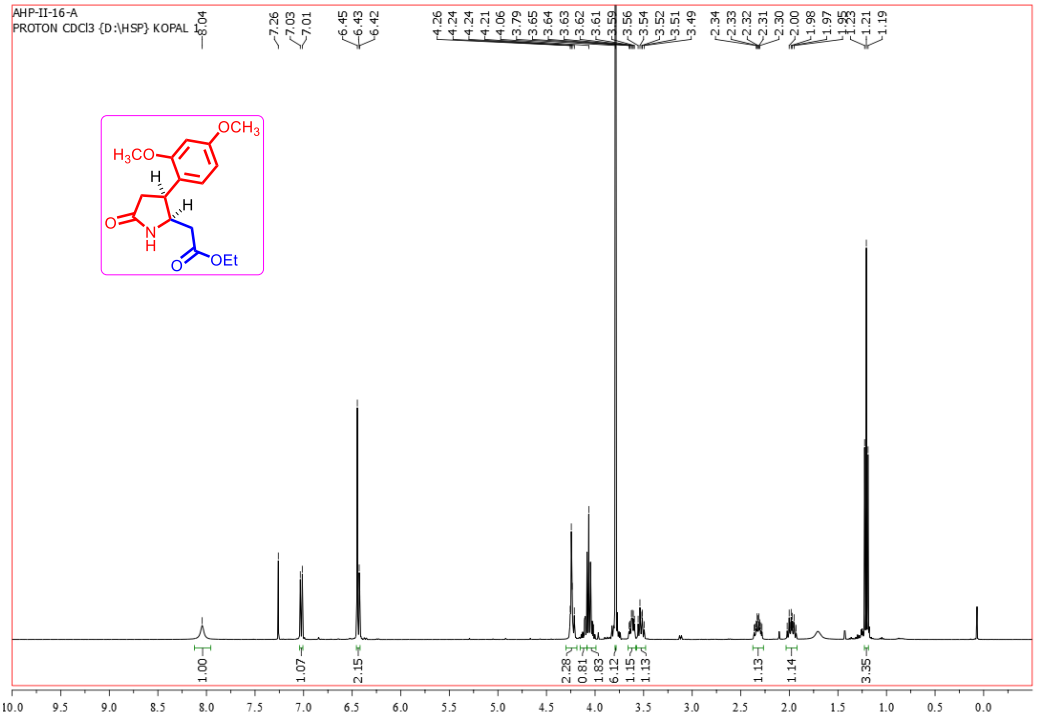
^{1}H (400 MHz, $CDCl_3$) NMR spectrum of tert-butyl (E)-2-(2-ethoxy-2-oxoethylidene)-5-oxo-3-phenylpyrrolidine-1-carboxylate **16.**



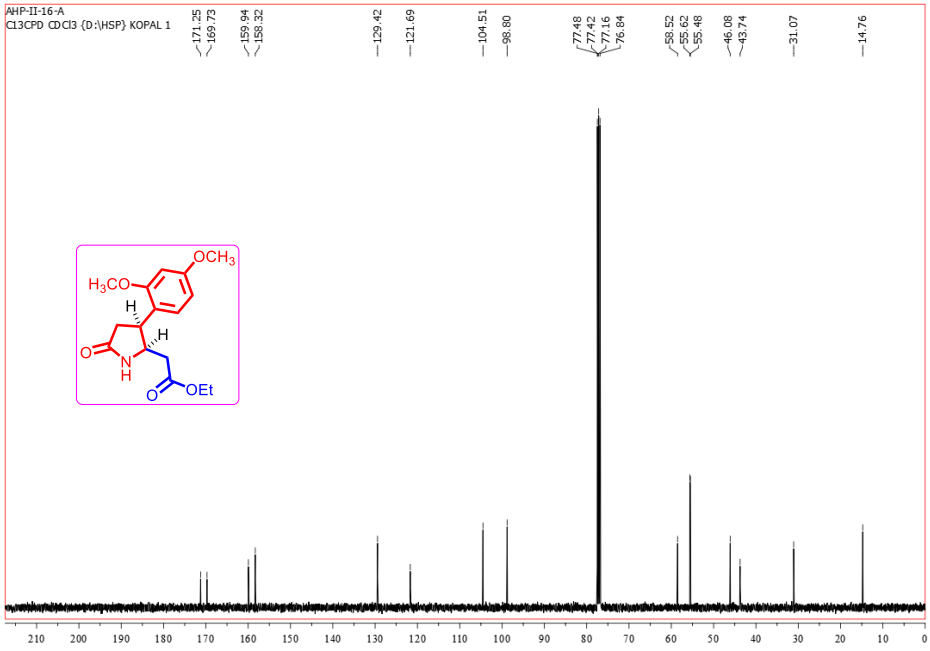
^{13}C (100 MHz, $CDCl_3$) NMR spectrum of tert-butyl (E)-2-(2-ethoxy-2-oxoethylidene)-5-oxo-3-phenylpyrrolidine-1-carboxylate **16.**



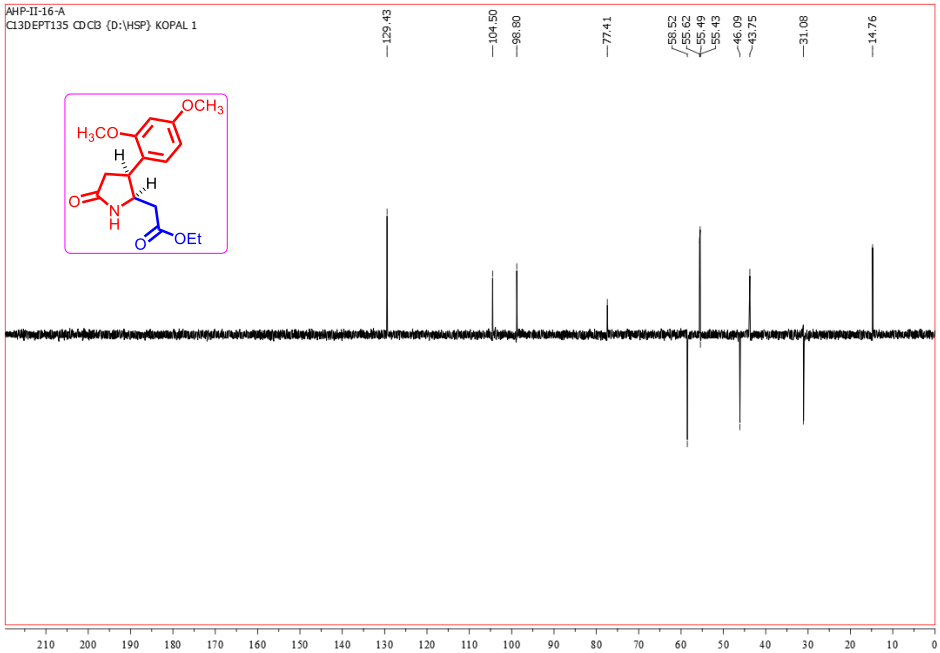
DEPT-135 (100 MHz, $CDCl_3$) NMR spectrum of tert-butyl (E)-2-(2-ethoxy-2-oxoethylidene)-5-oxo-3-phenylpyrrolidine-1-carboxylate **16.**



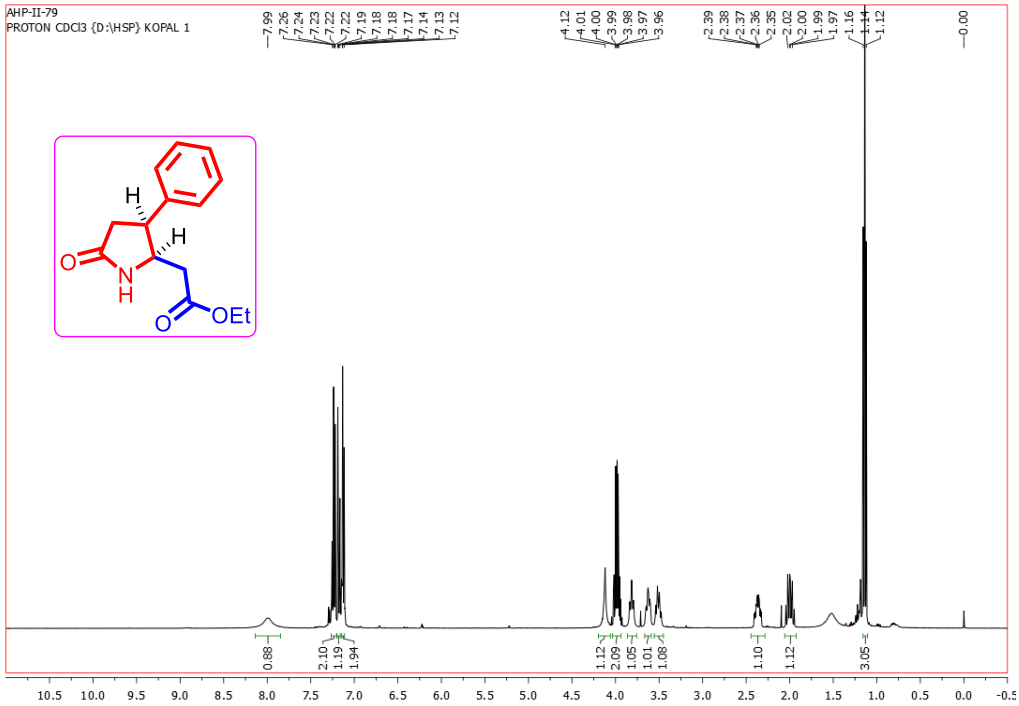
^1H (400 MHz, $CDCl_3$) NMR spectrum of Ethyl 2-((2R,3S)-3-(2,4-dimethoxyphenyl)-5-oxopyrrolidin-2-yl)acetate **17b.**



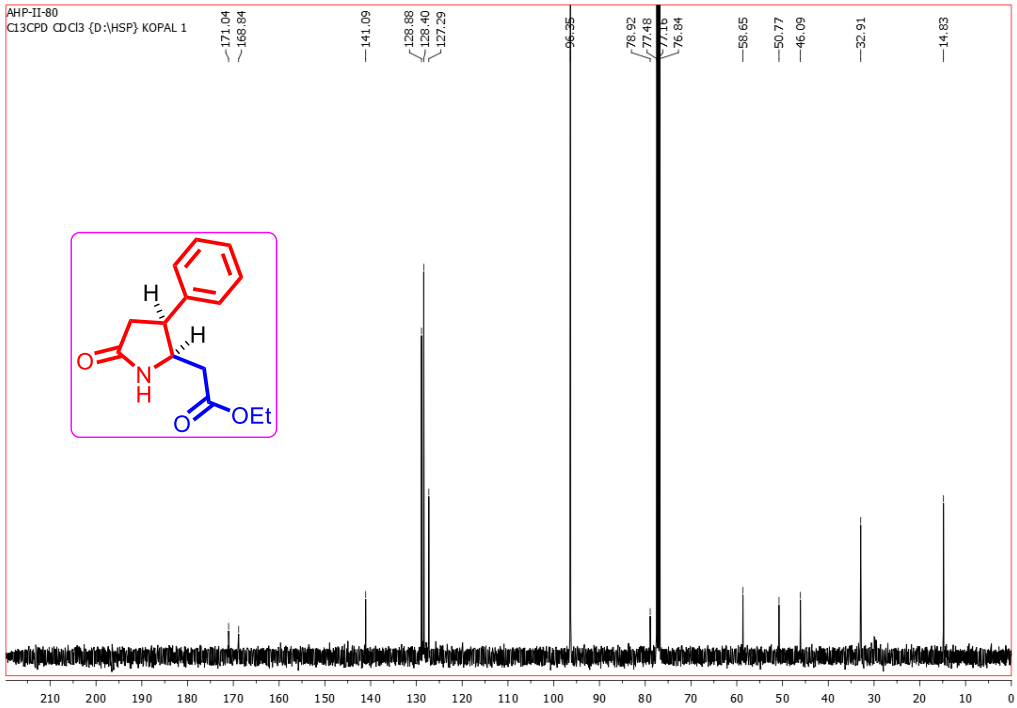
^{13}C (100 MHz, $CDCl_3$) NMR spectrum of Ethyl 2-((2R,3S)-3-(2,4-dimethoxyphenyl)-5-oxopyrrolidin-2-yl)acetate**15b.**



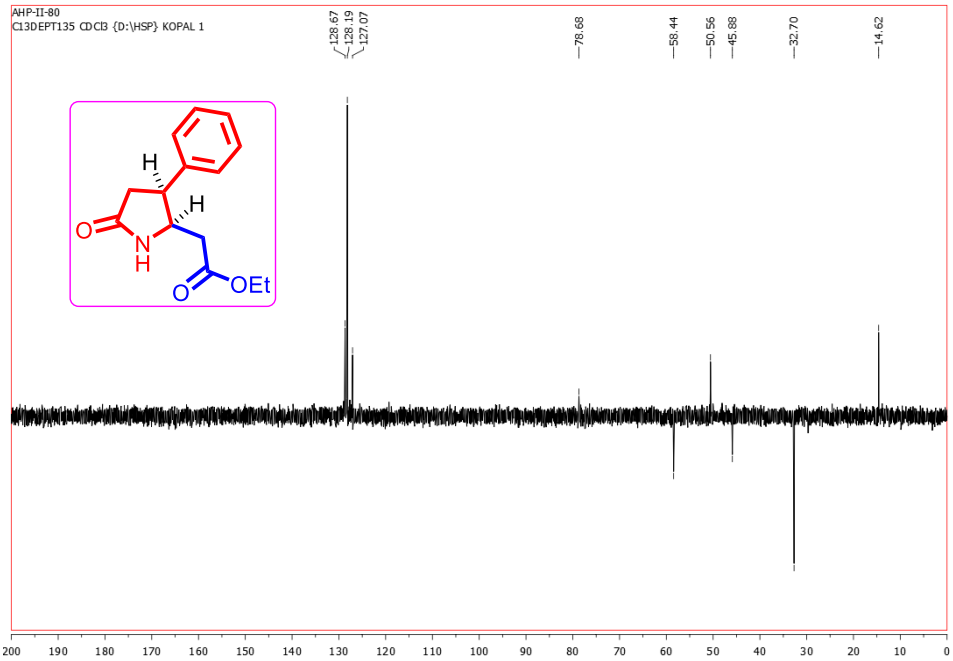
DEPT-135 (100 MHz, $CDCl_3$) NMR spectrum of ethyl 2-((2R,3S)-3-(2,4-dimethoxyphenyl)-5-oxopyrrolidin-2-yl)acetate**15b.**



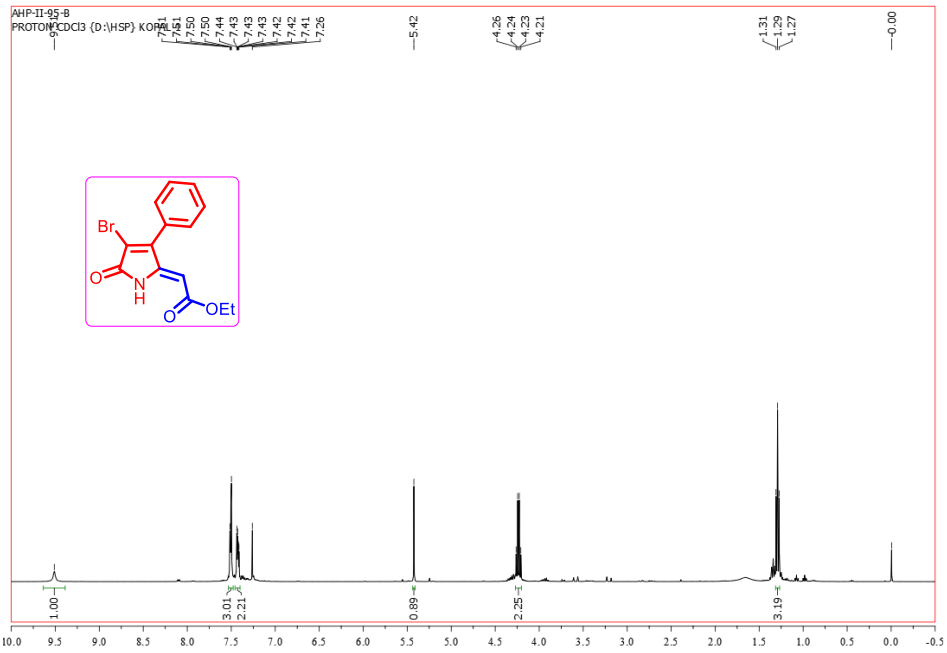
^{1}H (400 MHz, $CDCl_3$) NMR spectrum of Ethyl 2-((2R,3S)-5-oxo-3-phenylpyrrolidin-2-yl)acetate **17a.**



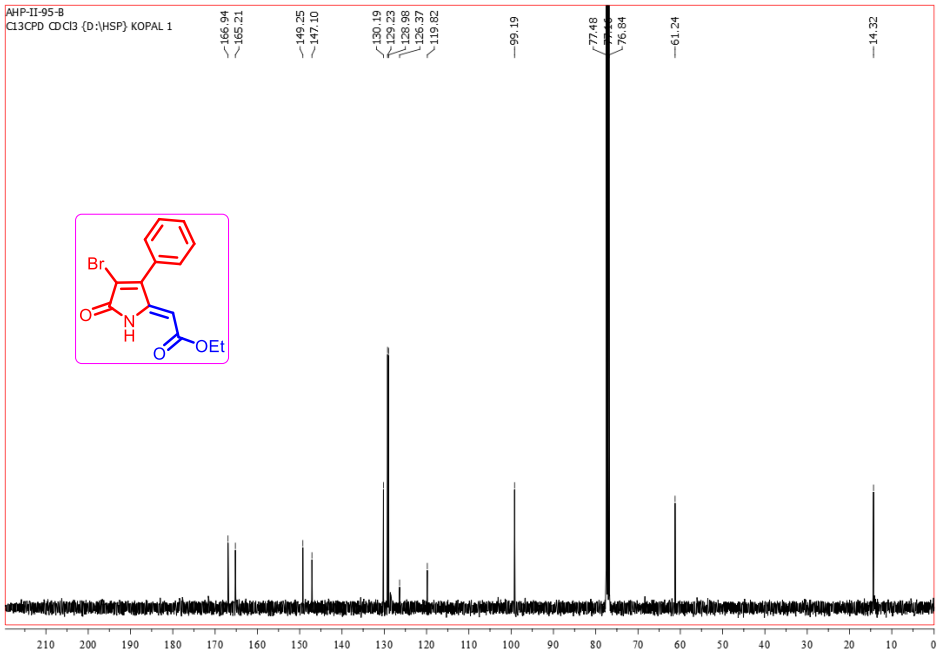
^{13}C (100 MHz, $CDCl_3$) NMR spectrum of Ethyl 2-((2R,3S)-5-oxo-3-phenylpyrrolidin-2-yl)acetate **17a.**



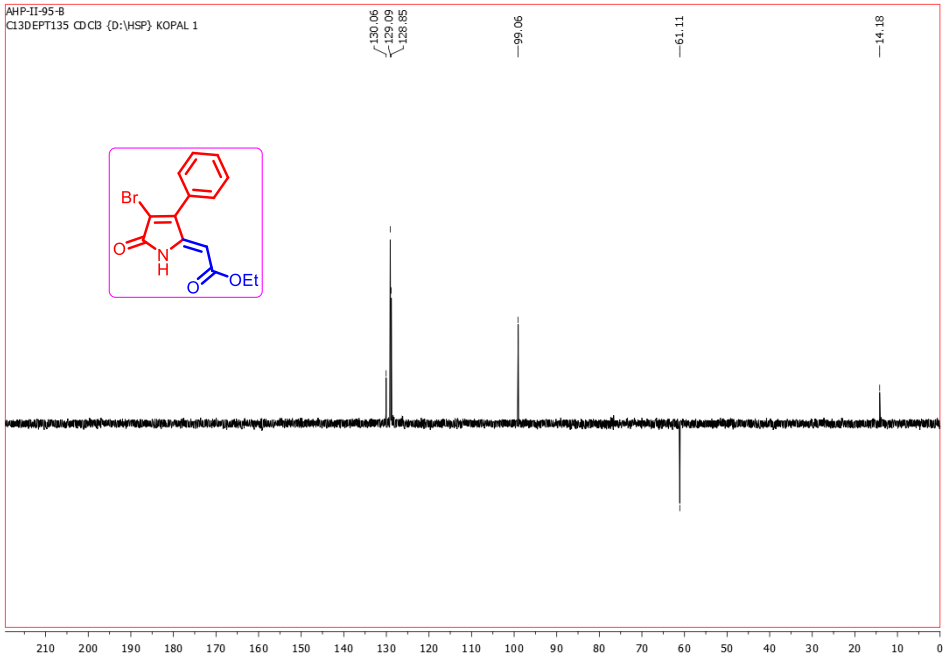
DEPT-135 (100 MHz, $CDCl_3$) NMR spectrum of Ethyl 2-((2R,3S)-5-oxo-3-phenylpyrrolidin-2-yl)acetate **17a.**



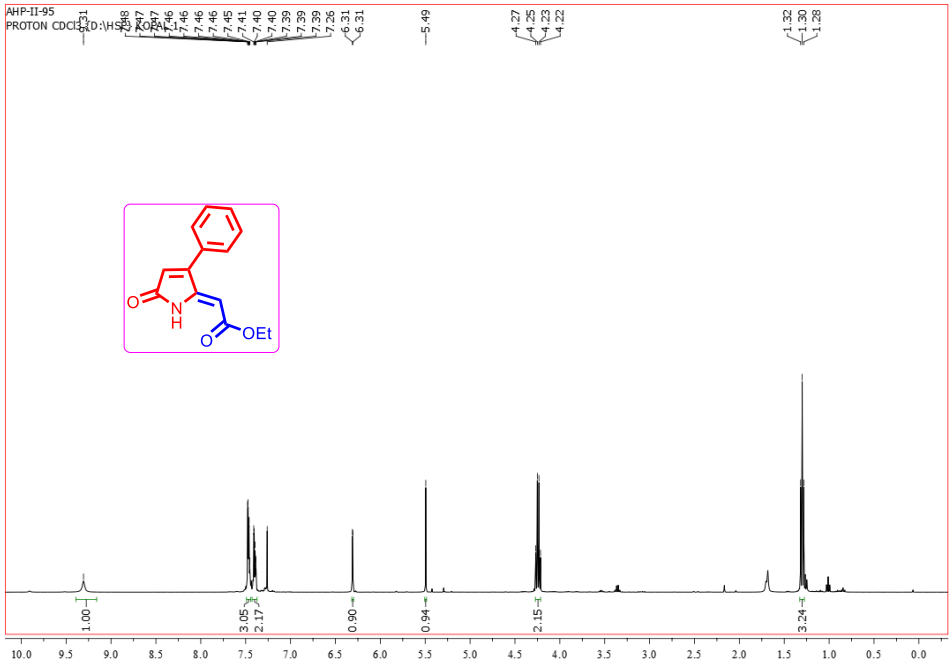
^1H (400 MHz, $CDCl_3$) NMR spectrum of Ethyl (Z)-2-(4-bromo-5-oxo-3-phenyl-1,5-dihydro-2H-pyrrol-2-ylidene)acetate **19.**



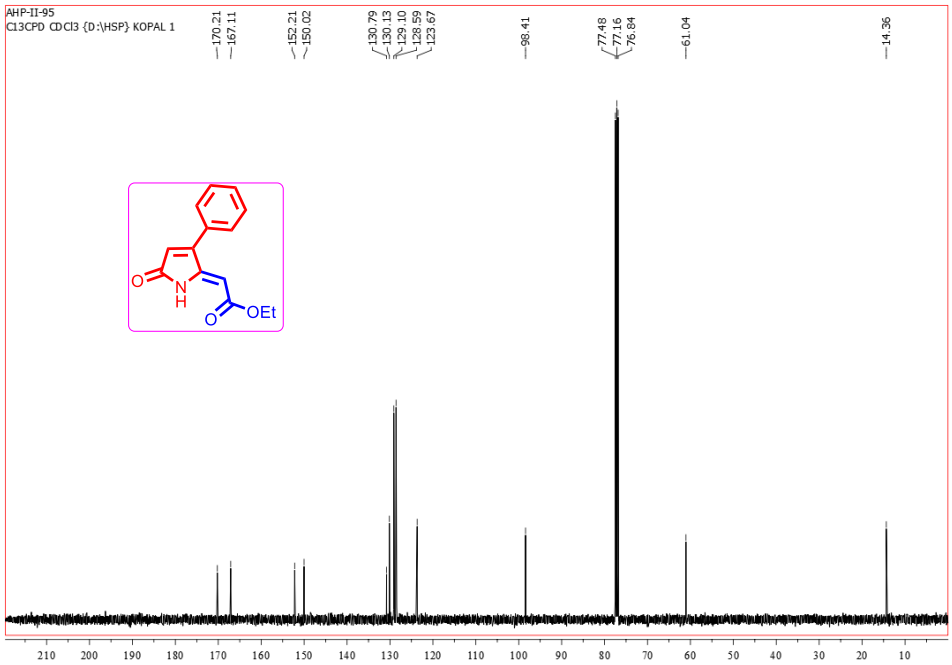
^{13}C (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (Z)-2-(4-bromo-5-oxo-3-phenyl-1,5-dihydro-2H-pyrrol-2-ylidene)acetate **19.**



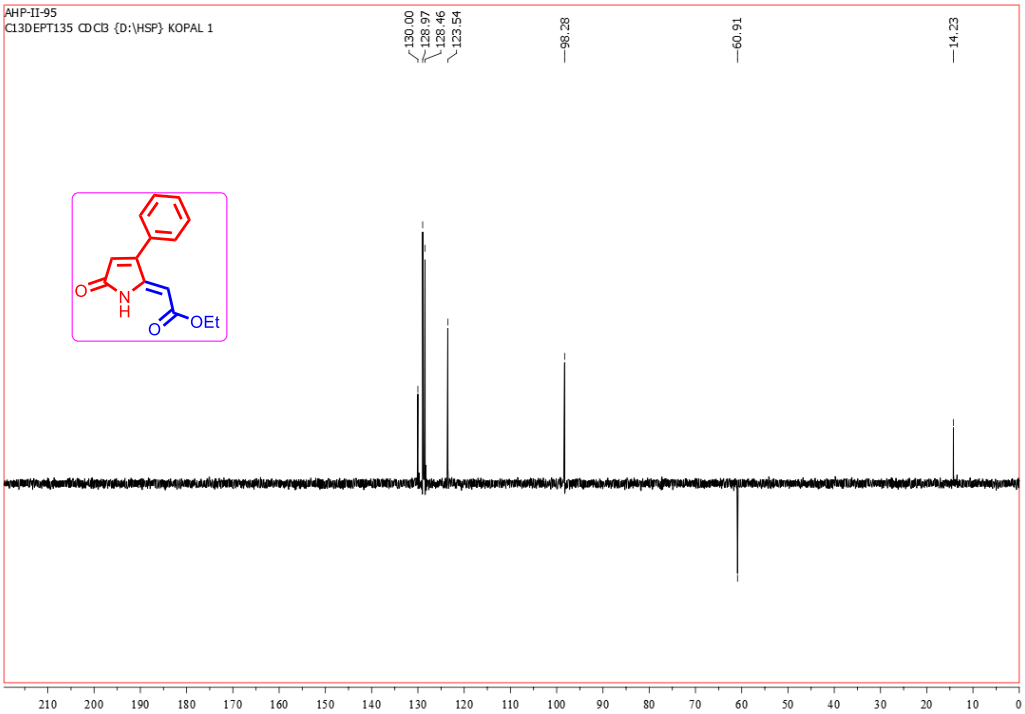
DEPT-135 (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (Z)-2-(4-bromo-5-oxo-3-phenyl-1,5-dihydro-2H-pyrrol-2-ylidene)acetate **19.**



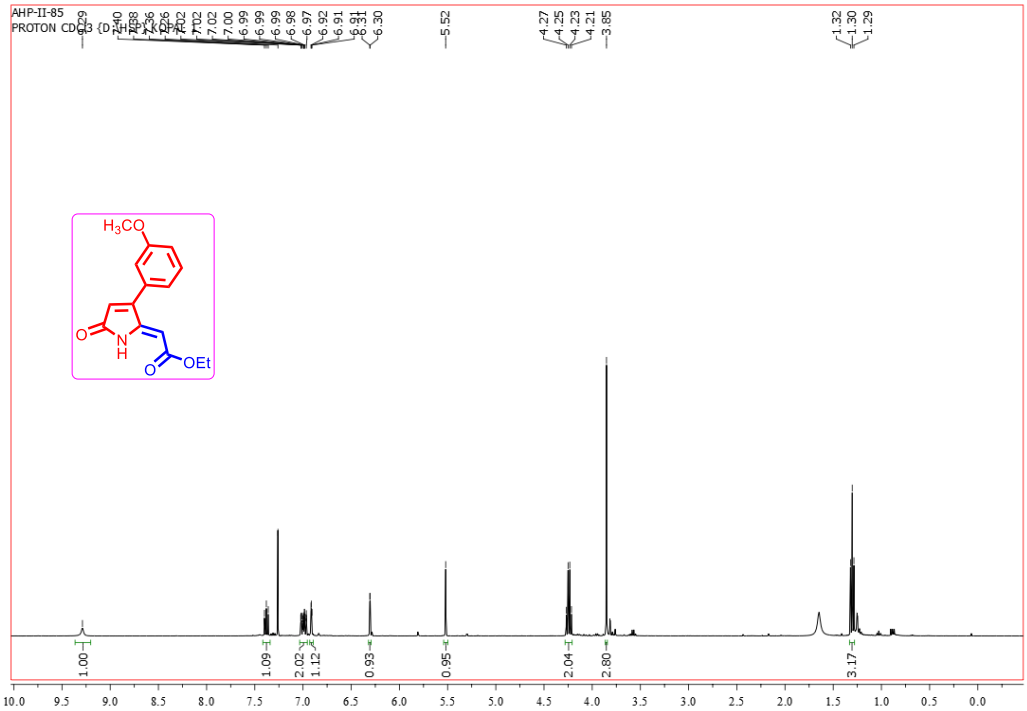
^{1}H (400 MHz, $CDCl_3$) NMR spectrum of Ethyl (*Z*)-2-(5-oxo-3-phenyl-1,5-dihydro-2H-pyrrol-2-ylidene)acetate **20a.**



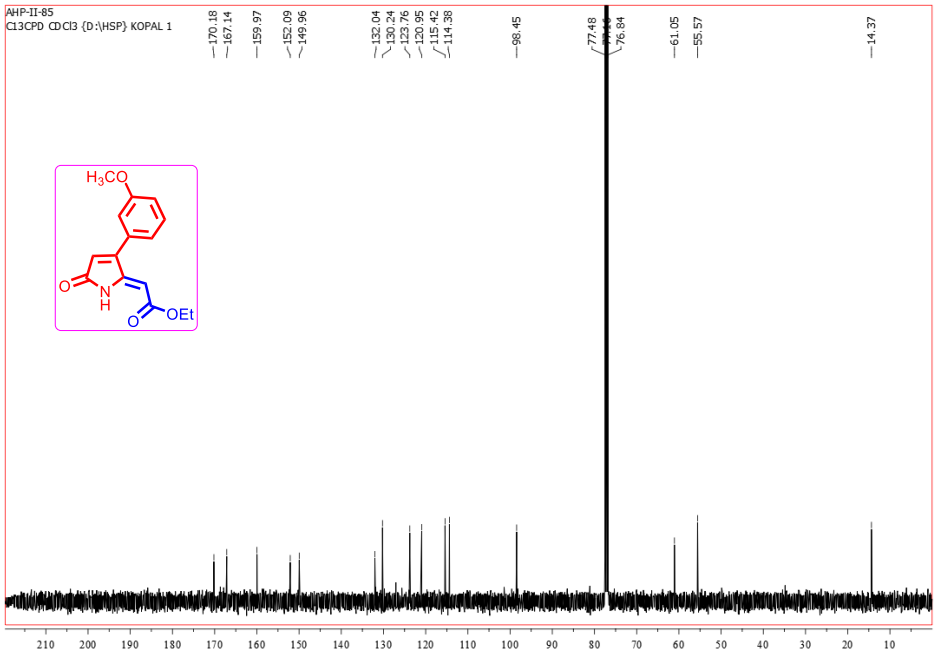
^{13}C (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (*Z*)-2-(5-oxo-3-phenyl-1,5-dihydro-2H-pyrrol-2-ylidene)acetate **20a.**



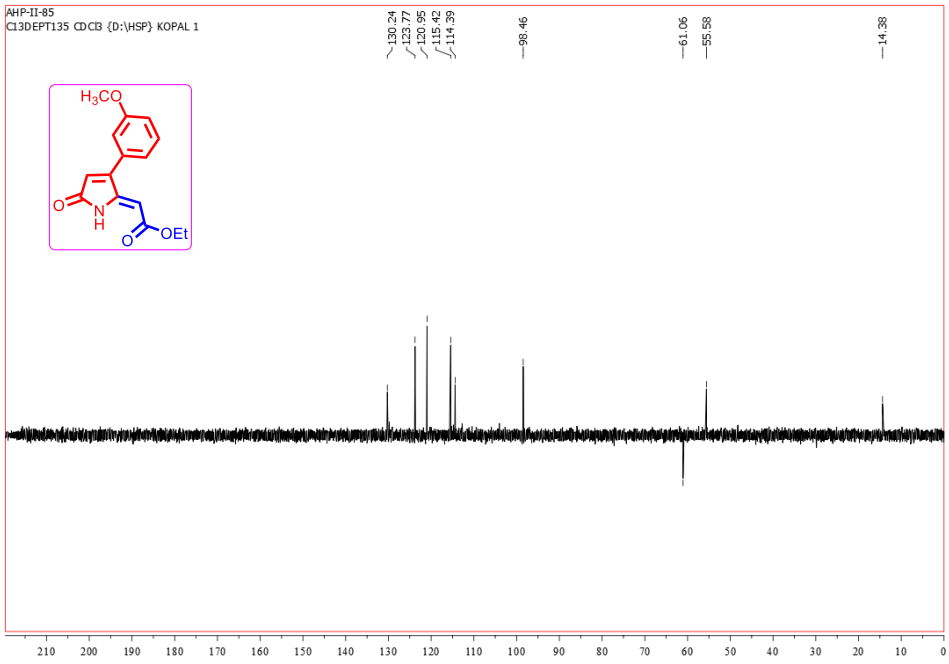
DEPT-135 (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (*Z*)-2-(5-oxo-3-phenyl-1,5-dihydro-2H-pyrrol-2-ylidene)acetate **20a.**



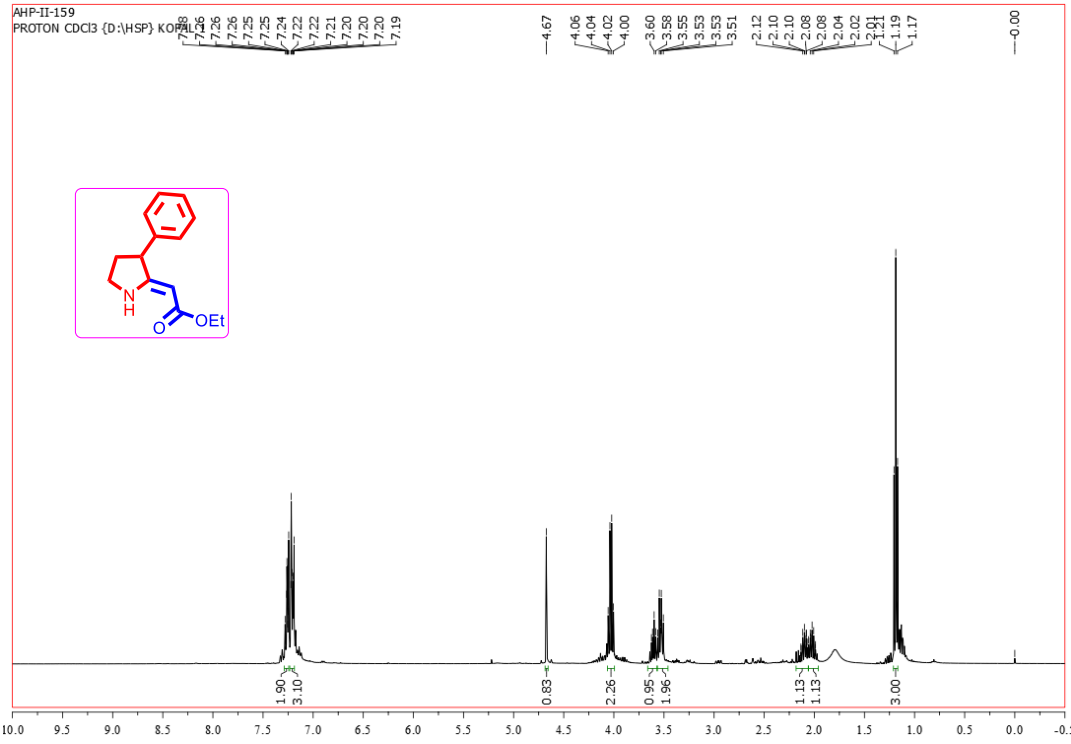
^1H (400 MHz, $CDCl_3$) NMR spectrum of ethyl (*Z*)-2-(3-(3-methoxyphenyl)-5-oxo-1,5-dihydro-2H-pyrrol-2-ylidene)acetate **20b.**



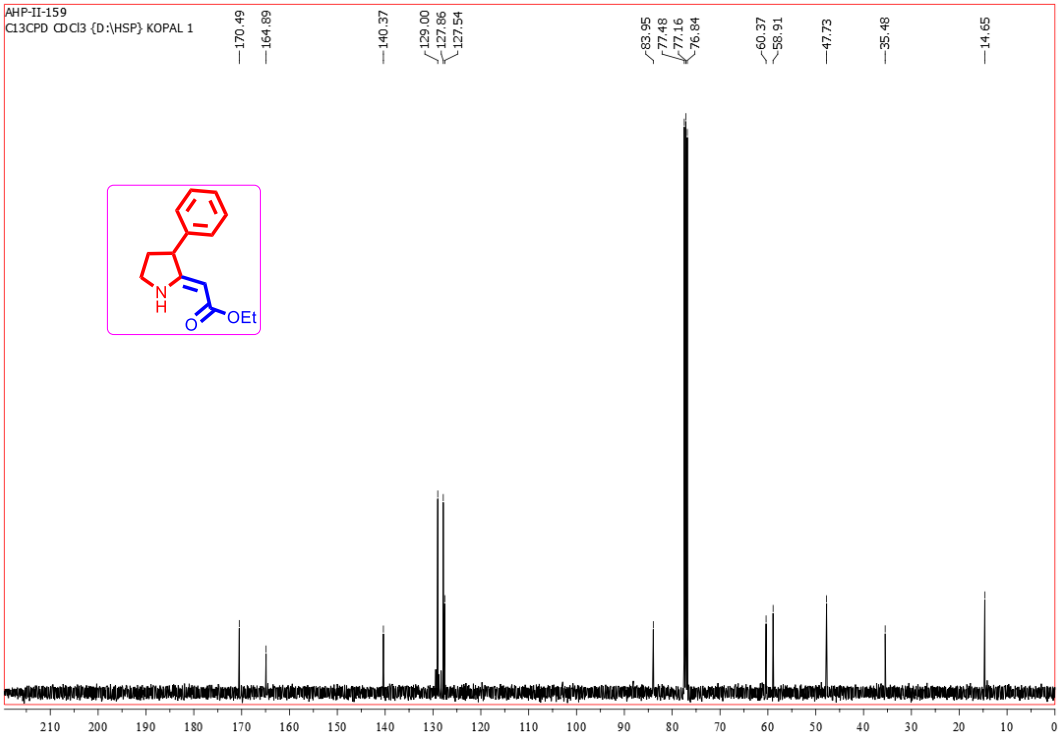
^{13}C (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (*Z*)-2-(3-(3-methoxyphenyl)-5-oxo-1,5-dihydro-2H-pyrrol-2-ylidene)acetate **20b.**



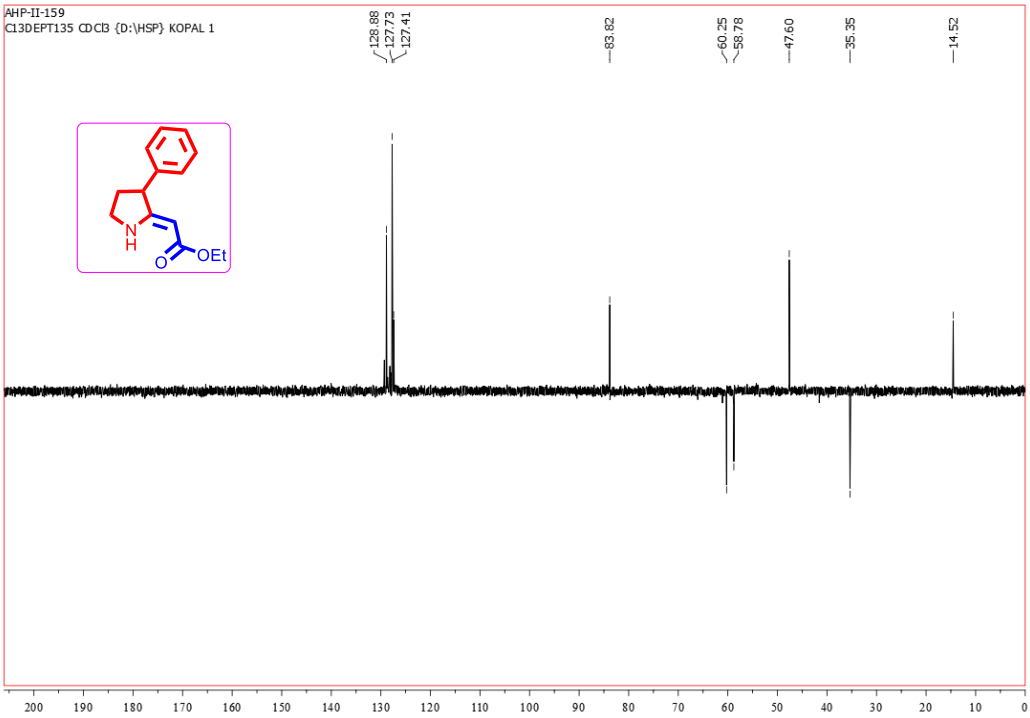
DEPT-135 (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (*Z*)-2-(3-(3-methoxyphenyl)-5-oxo-1,5-dihydro-2H-pyrrol-2-ylidene)acetate **20b.**



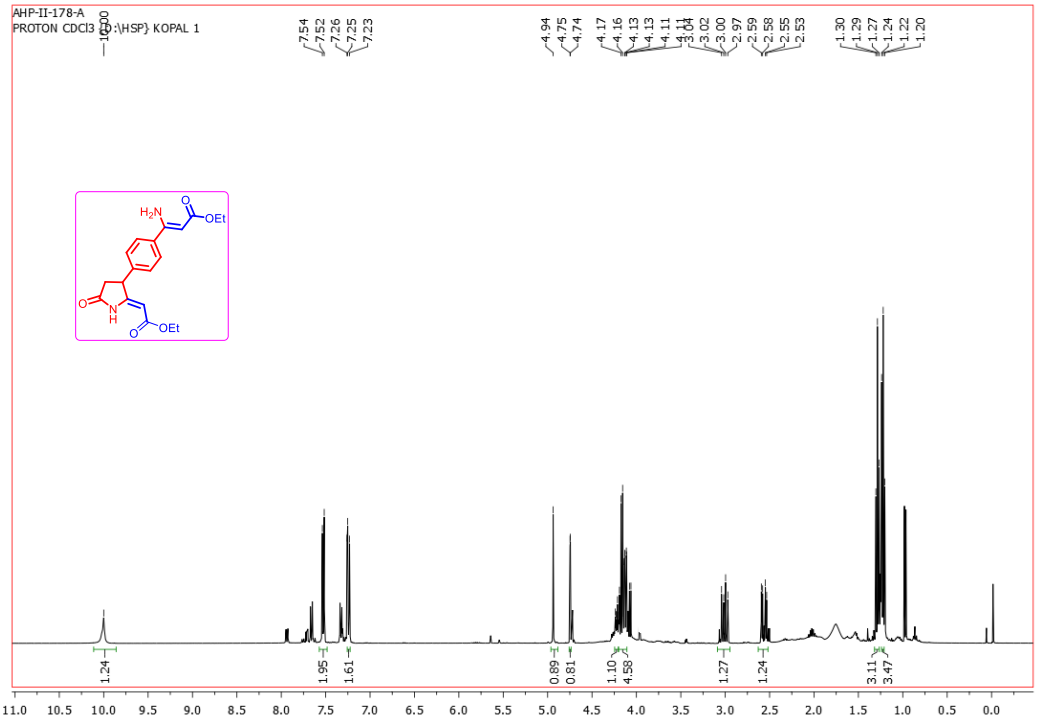
^{1}H (400 MHz, $CDCl_3$) NMR spectrum of Ethyl (*Z*)-2-(3-phenylpyrrolidin-2-ylidene)acetate **16.**



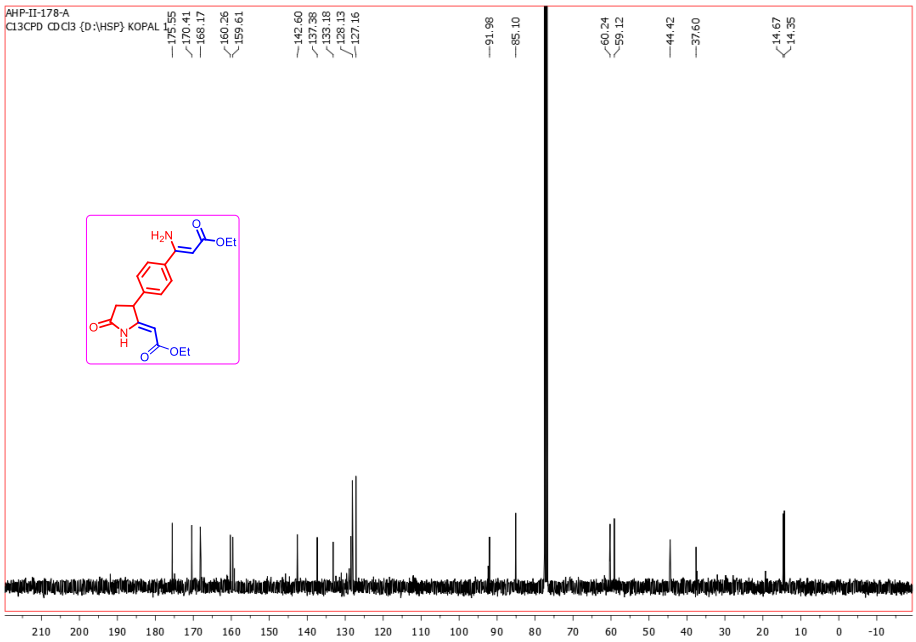
^{13}C (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (*Z*)-2-(3-phenylpyrrolidin-2-ylidene)acetate **16.**



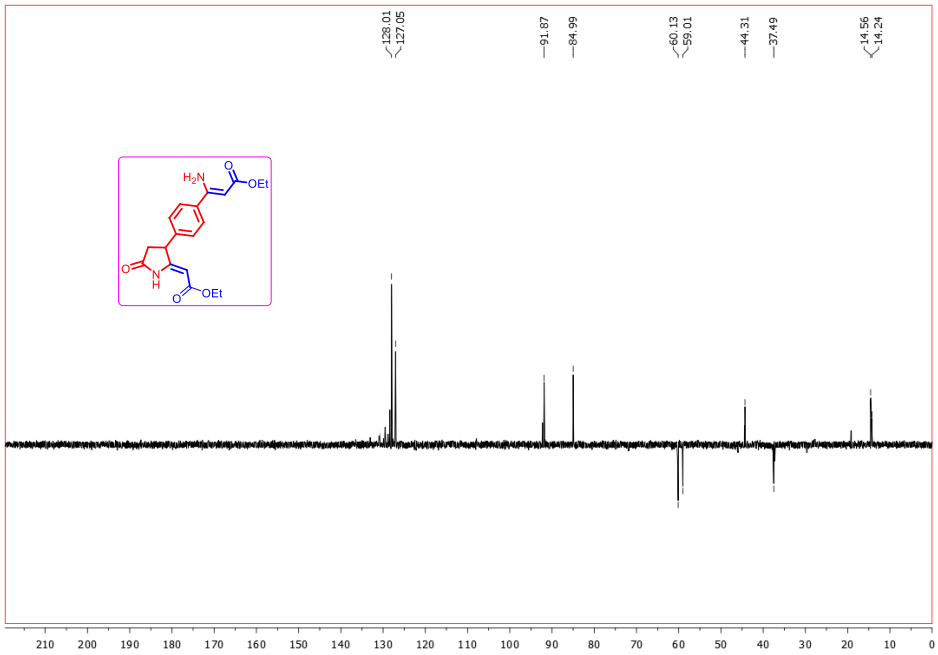
DEPT-135 (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (*Z*)-2-(3-phenylpyrrolidin-2-ylidene)acetate **16.**



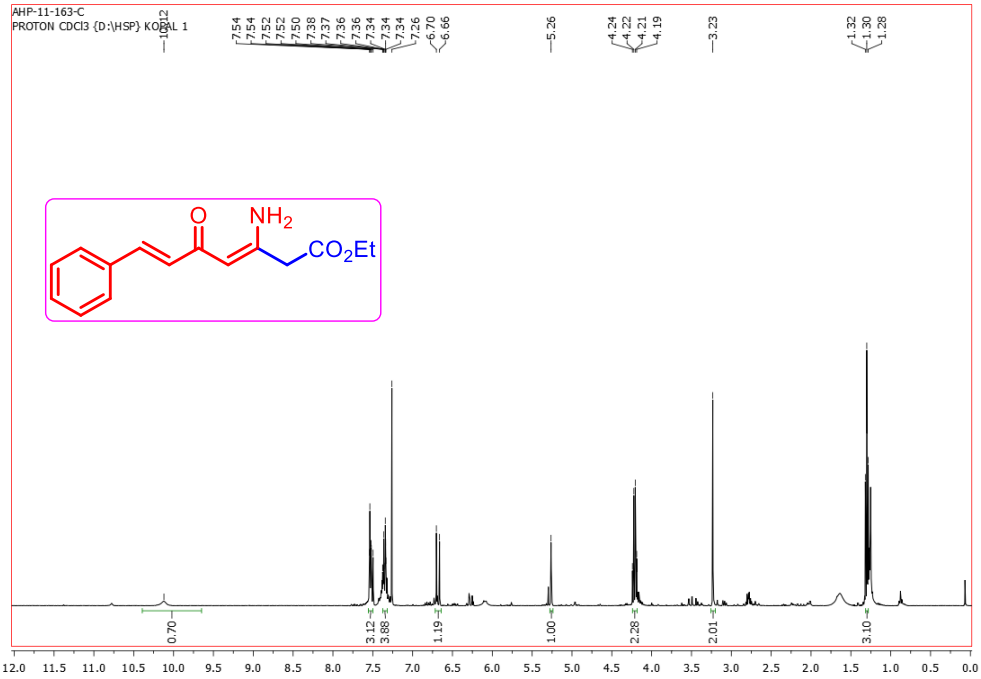
^1H (400 MHz, $CDCl_3$) NMR spectrum of Ethyl (Z)-3-amino-3-(4-((*Z*)-2-(2-ethoxy-2-oxoethylidene)-5-oxopyrrolidin-3-yl)phenyl)acrylate **23.**



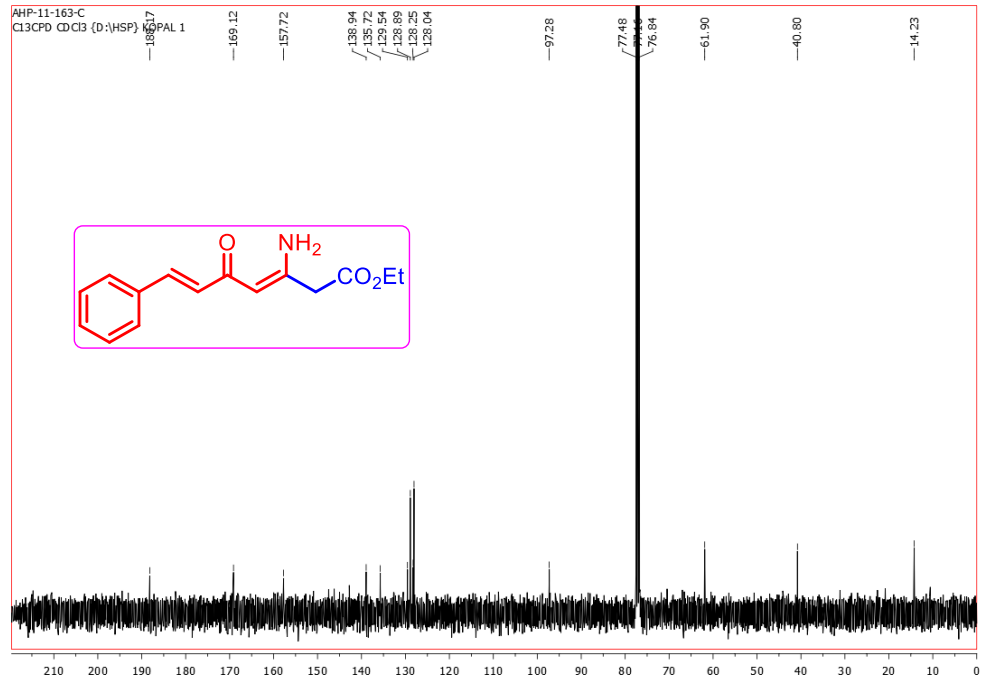
^{13}C (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (Z)-3-amino-3-(4-((*Z*)-2-(2-ethoxy-2-oxoethylidene)-5-oxopyrrolidin-3-yl)phenyl)acrylate **23.**



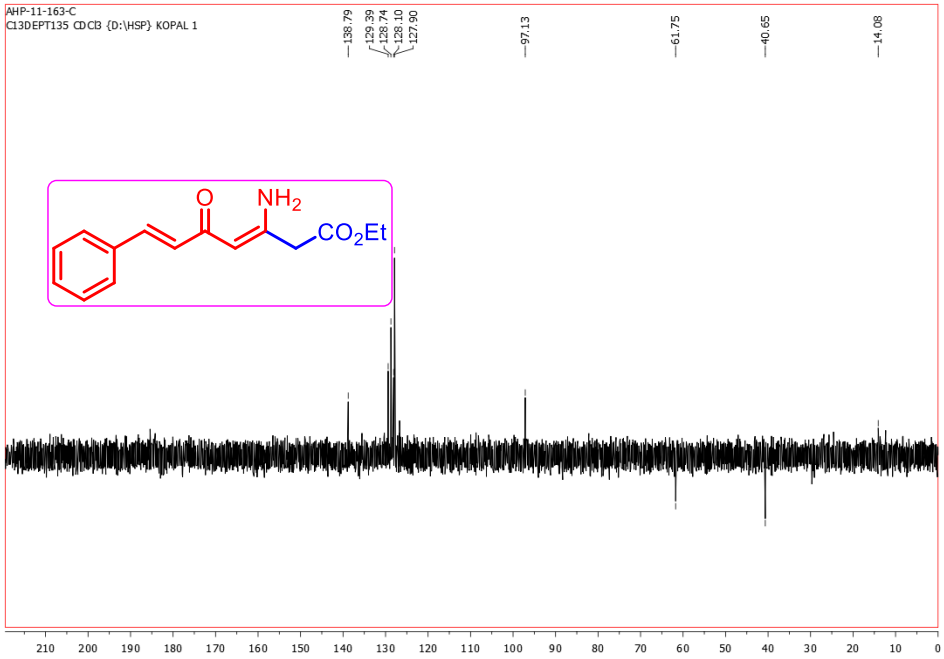
DEPT-135 (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (*Z*)-3-amino-3-(4-((Z)-2-(2-ethoxy-2-oxoethylidene)-5-oxopyrrolidin-3-yl)phenyl)acrylate **23.**



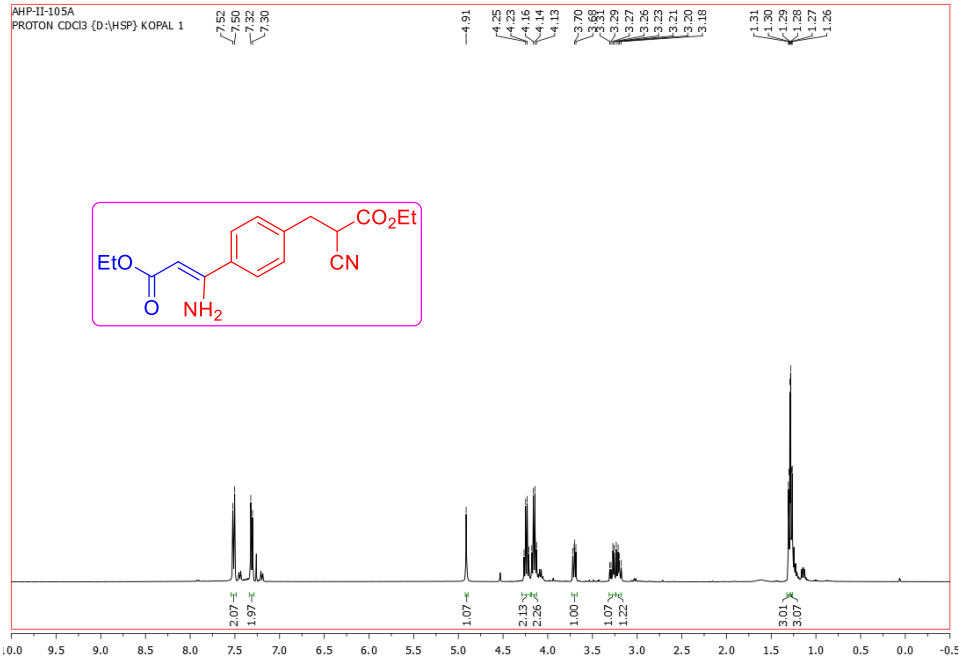
^{1}H (400 MHz, $CDCl_3$) NMR spectrum of Ethyl (3*Z*,6*E*)-3-amino-5-oxo-7-phenylhepta-3,6-dienoate **30.**



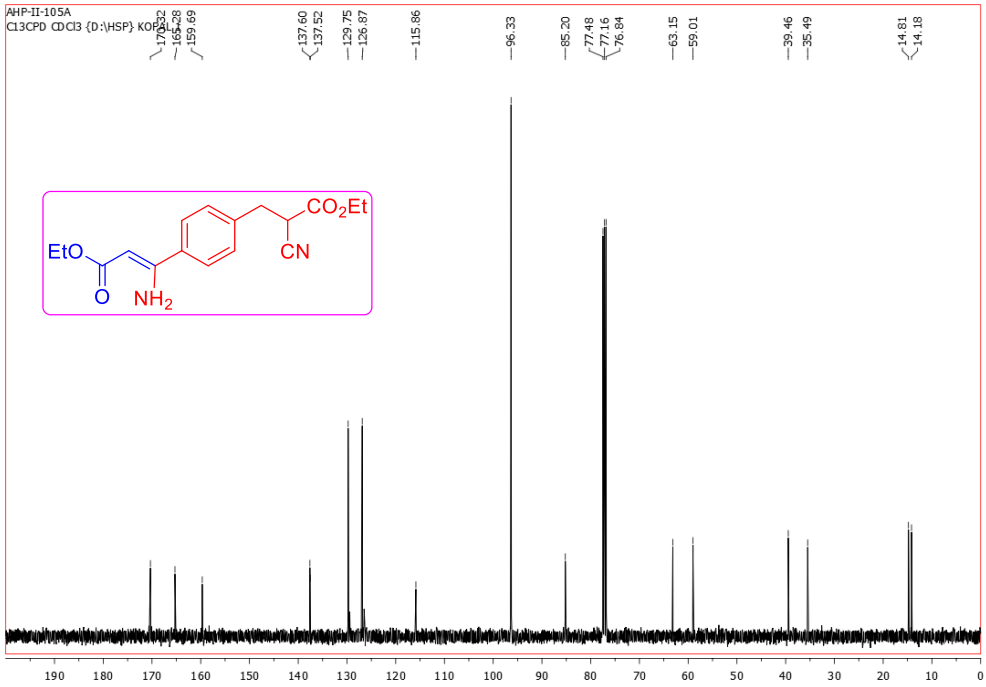
^{13}C (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (*3*Z,6*E*)-3-amino-5-oxo-7-phenylhepta-3,6-dienoate **30.**



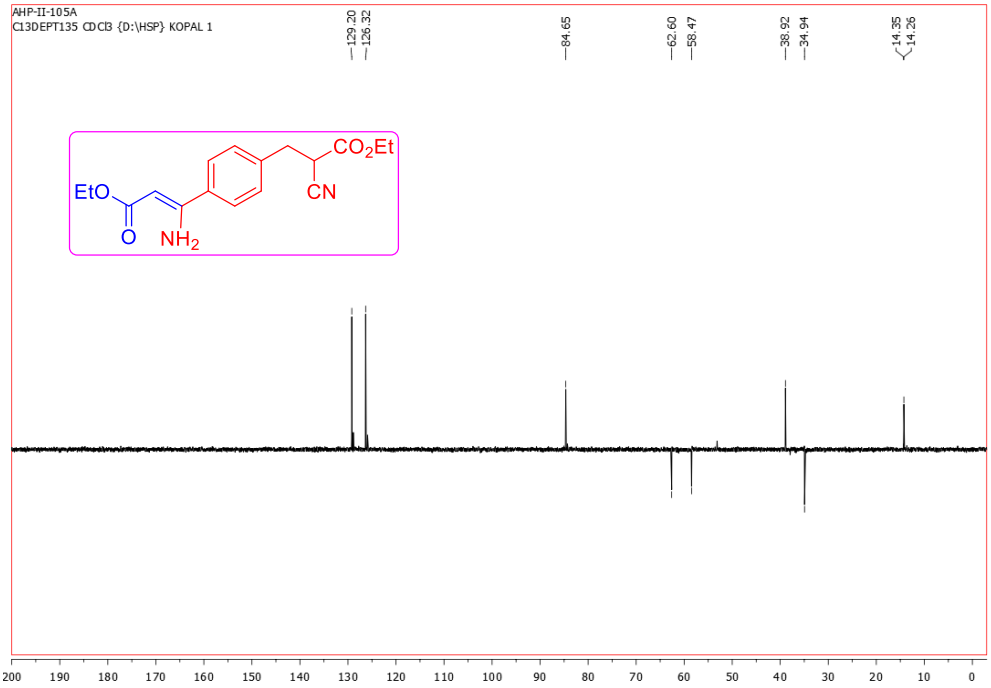
DEPT-135 (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (3*Z*,6*E*)-3-amino-5-oxo-7-phenylhepta-3,6-dienoate **30**.



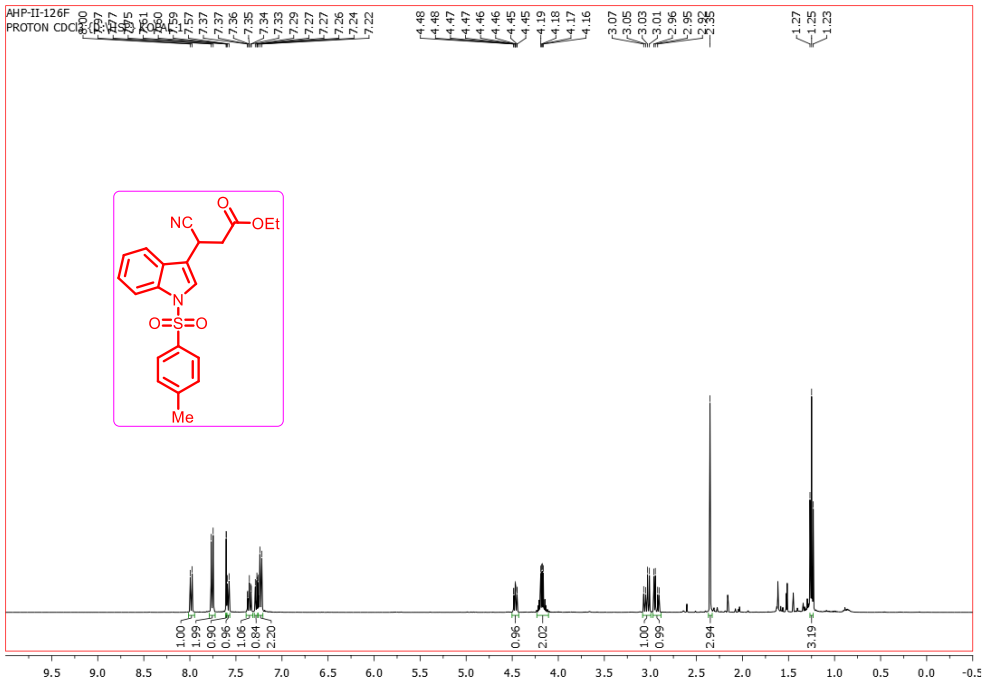
^1H (400 MHz, $CDCl_3$) NMR spectrum of Ethyl (*Z*)-3-amino-3-(4-(2-cyano-3-ethoxy-3-oxopropyl)phenyl)acrylate **25.**



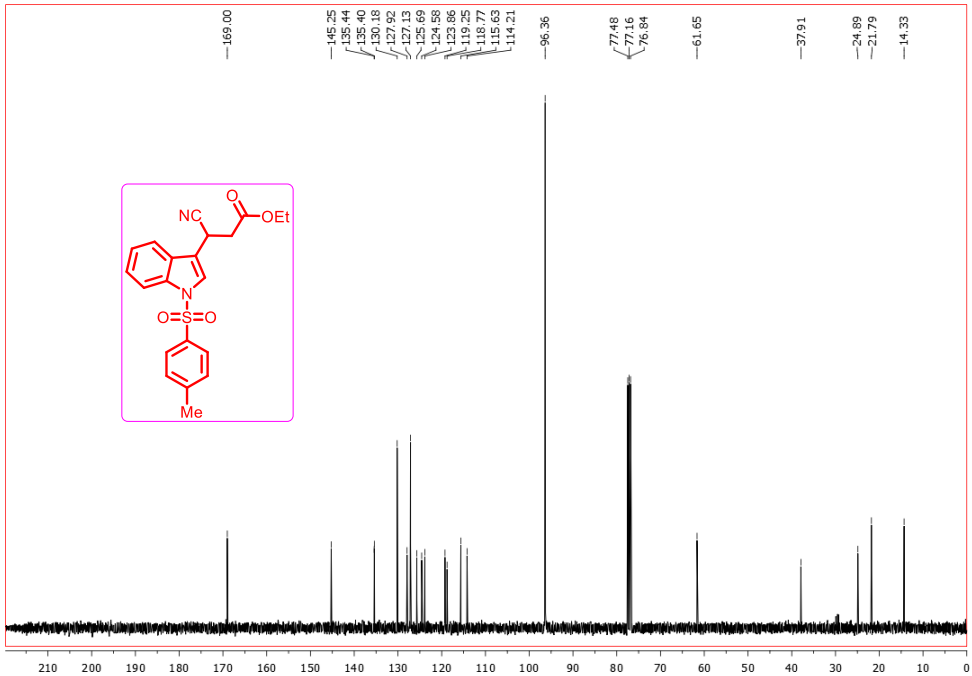
^{13}C (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (*Z*)-3-amino-3-(4-(2-cyano-3-ethoxy-3-oxopropyl)phenyl)acrylate **25.**



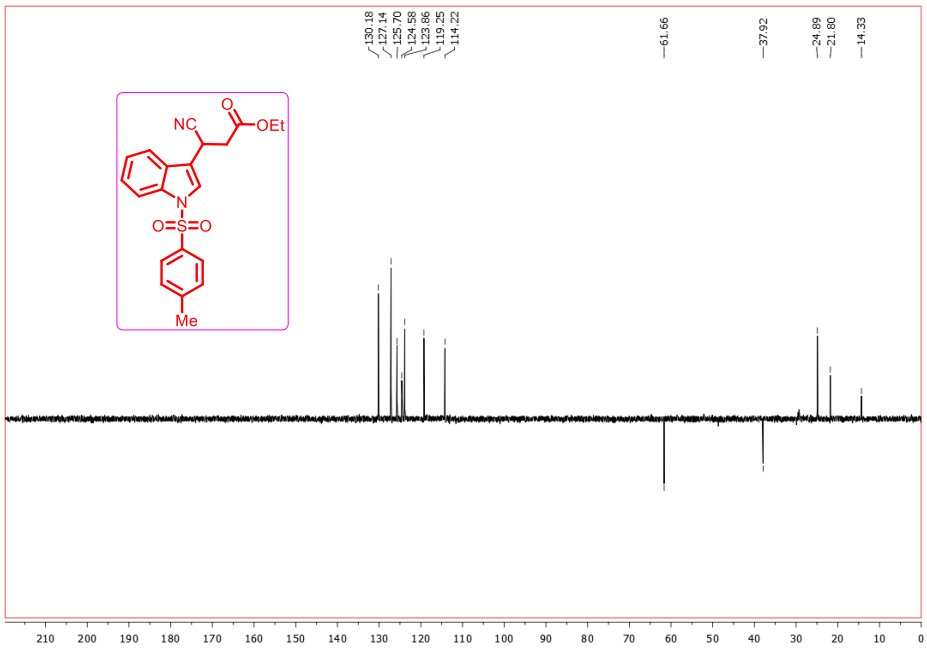
DEPT-135 (100 MHz, $CDCl_3$) NMR spectrum of Ethyl (*Z*)-3-amino-3-(4-(2-cyano-3-ethoxy-3-oxopropyl)phenyl)acrylate **25.**



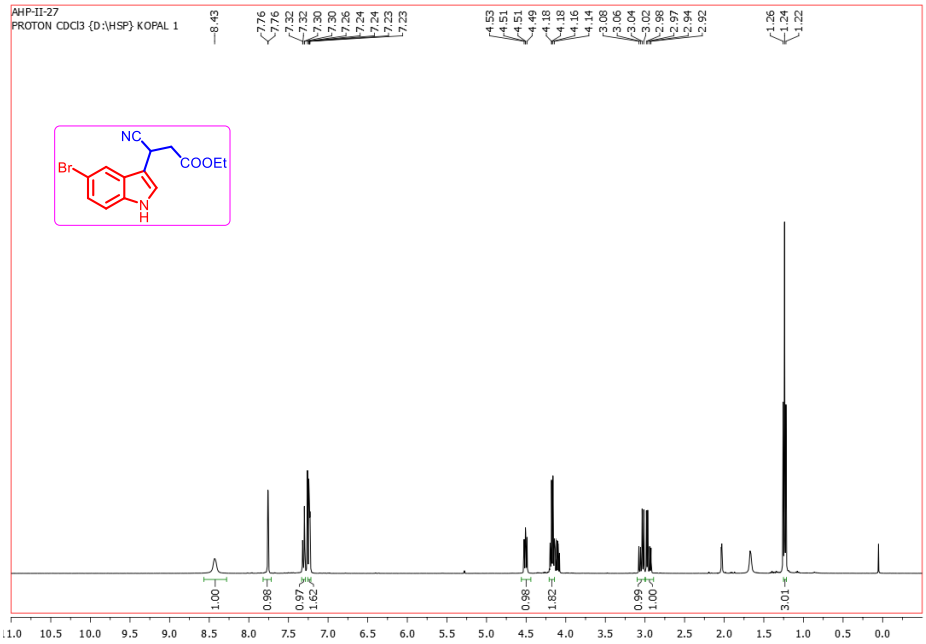
^{1}H (400 MHz, $CDCl_3$) NMR spectrum of Ethyl 3-cyano-3-(1-tosyl-1*H*-indol-3-yl)propanoate **10n.**



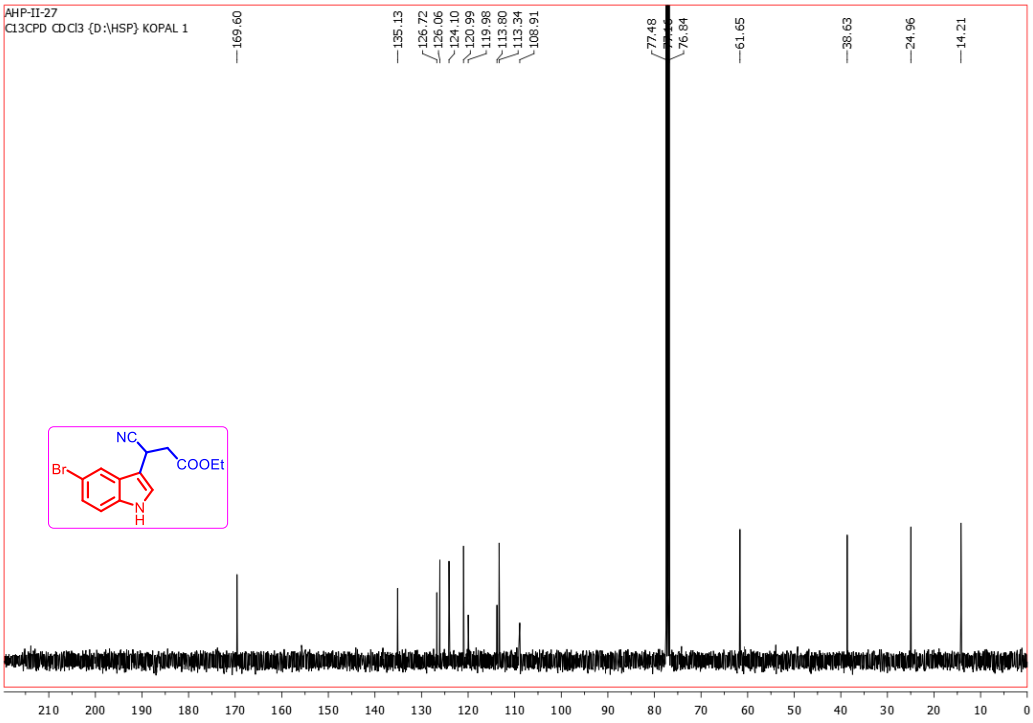
^{13}C (100 MHz, $CDCl_3$) NMR spectrum of Ethyl 3-cyano-3-(1-tosyl-1H-indol-3-yl)propanoate **10n.**



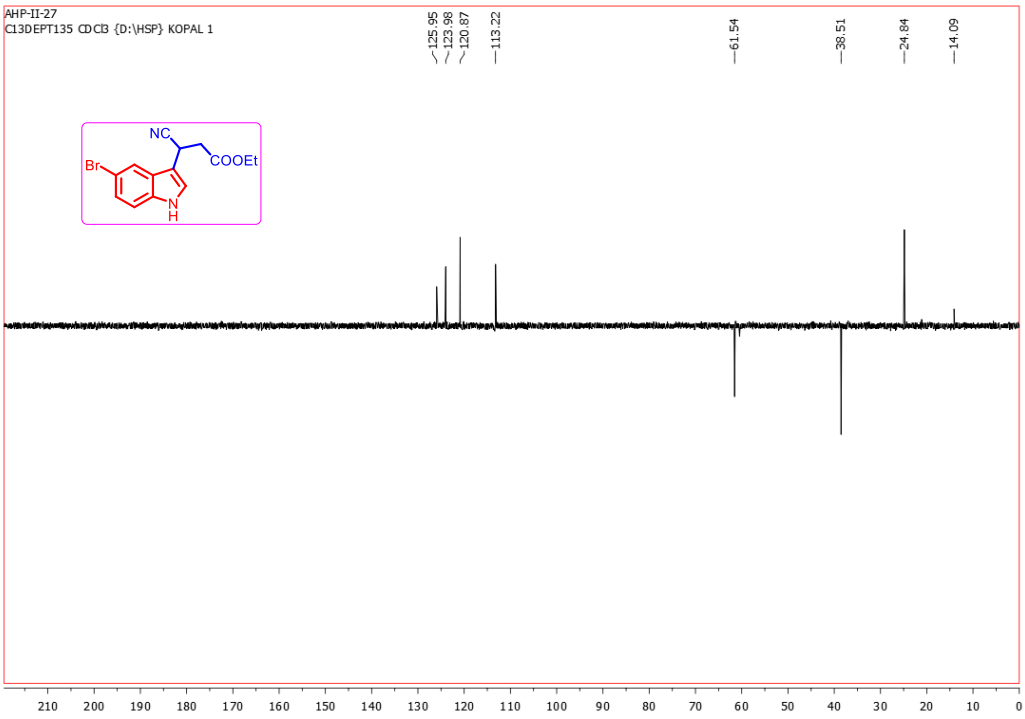
DEPT-135 (100 MHz, $CDCl_3$) NMR spectrum of Ethyl 3-cyano-3-(1-tosyl-1*H*-indol-3-yl)propanoate **10n.**



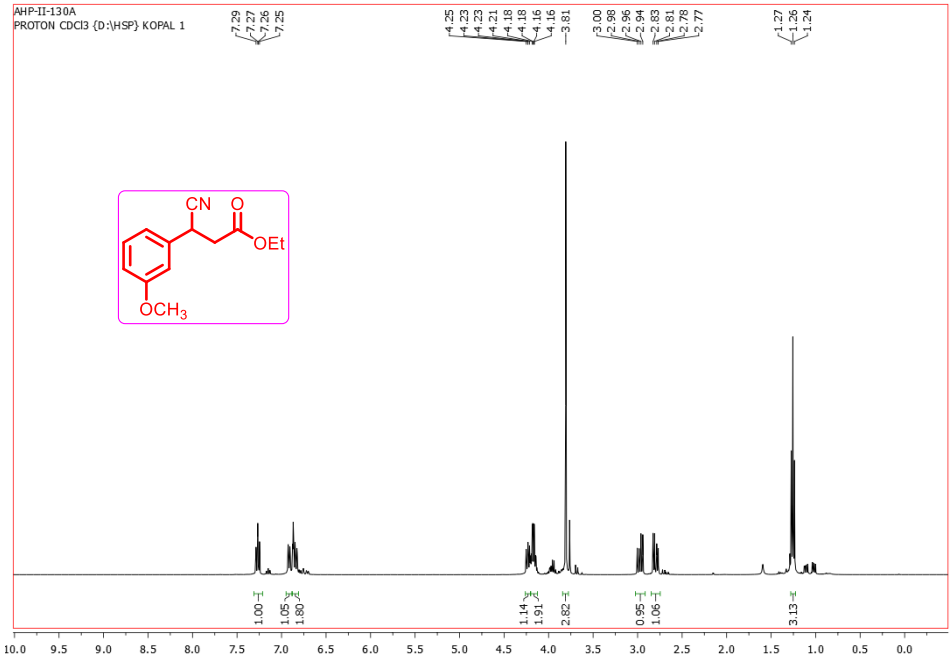
^1H (400 MHz, $CDCl_3$) NMR spectrum of Ethyl 3-(5-bromo-1*H*-indol-3-yl)-3-cyanopropanoate **10o.**



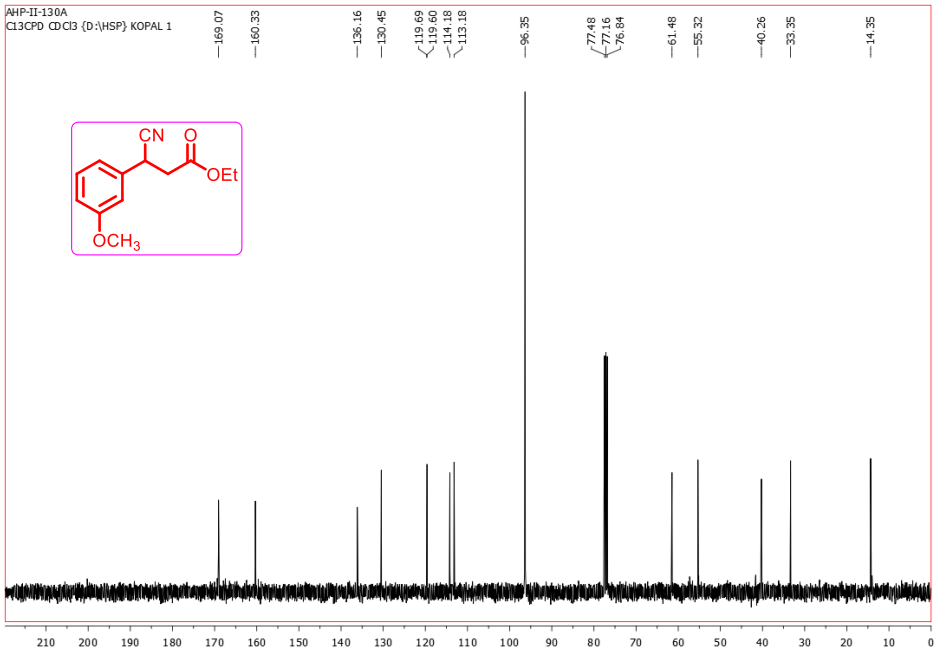
^{13}C (100 MHz, $CDCl_3$) NMR spectrum of Ethyl 3-(5-bromo-1*H*-indol-3-yl)-3-cyanopropanoate **10o.**



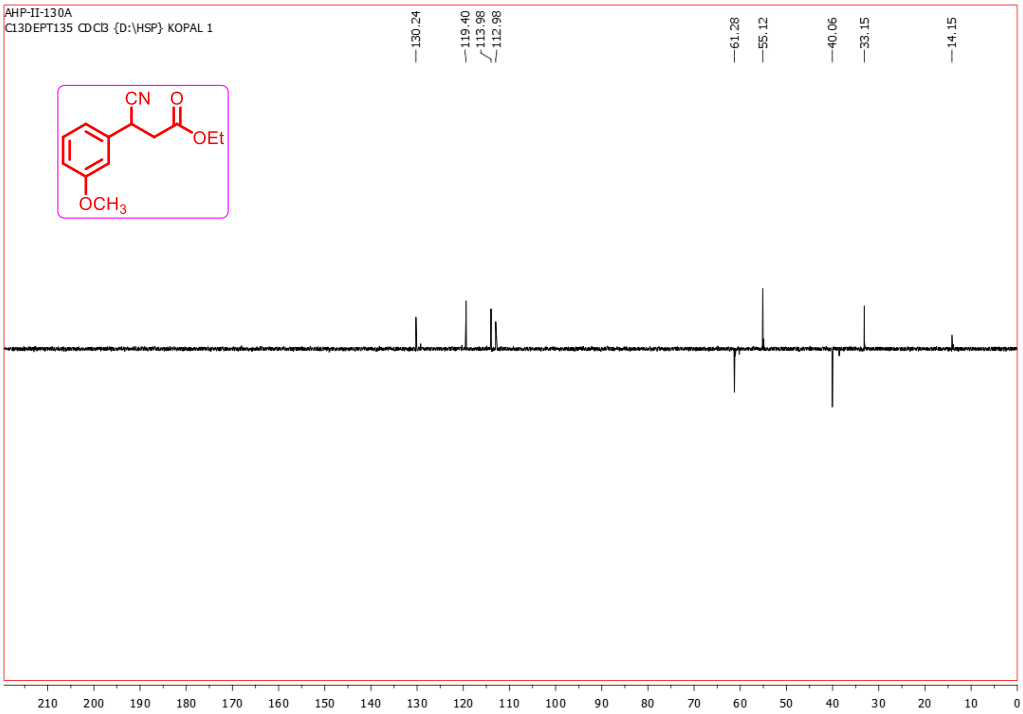
DEPT-135 (100 MHz, $CDCl_3$) NMR spectrum of Ethyl 3-(5-bromo-1*H*-indol-3-yl)-3-cyanopropanoate **10o.**



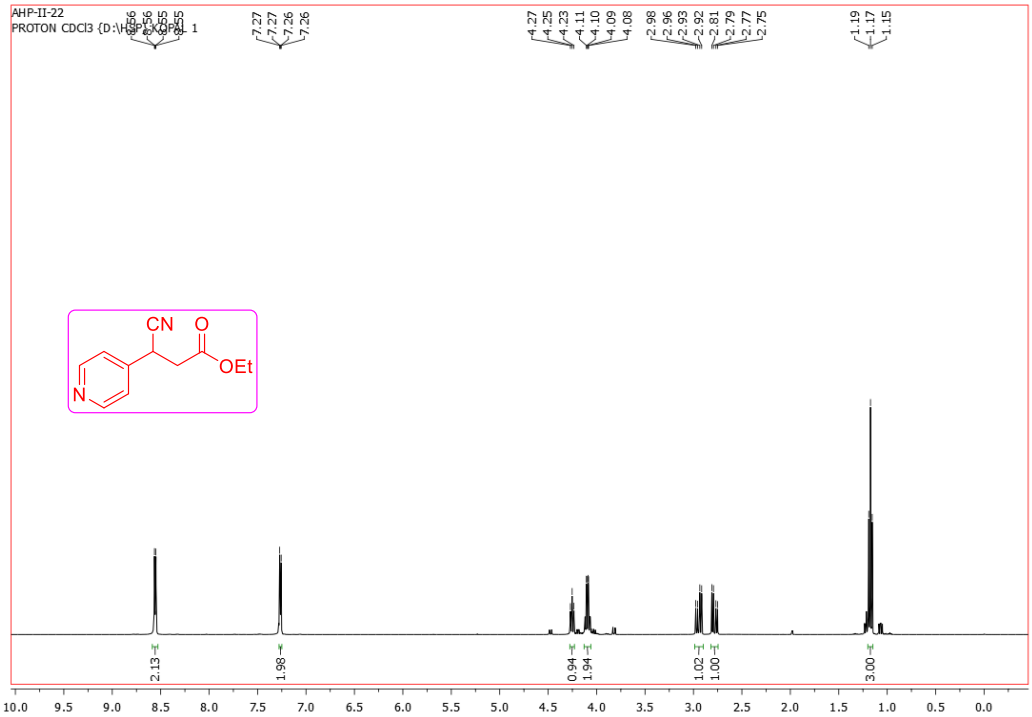
^{1}H (400 MHz, $CDCl_3$) NMR spectrum of Ethyl 3-cyano-3-(3-methoxyphenyl)propanoate **10f.**



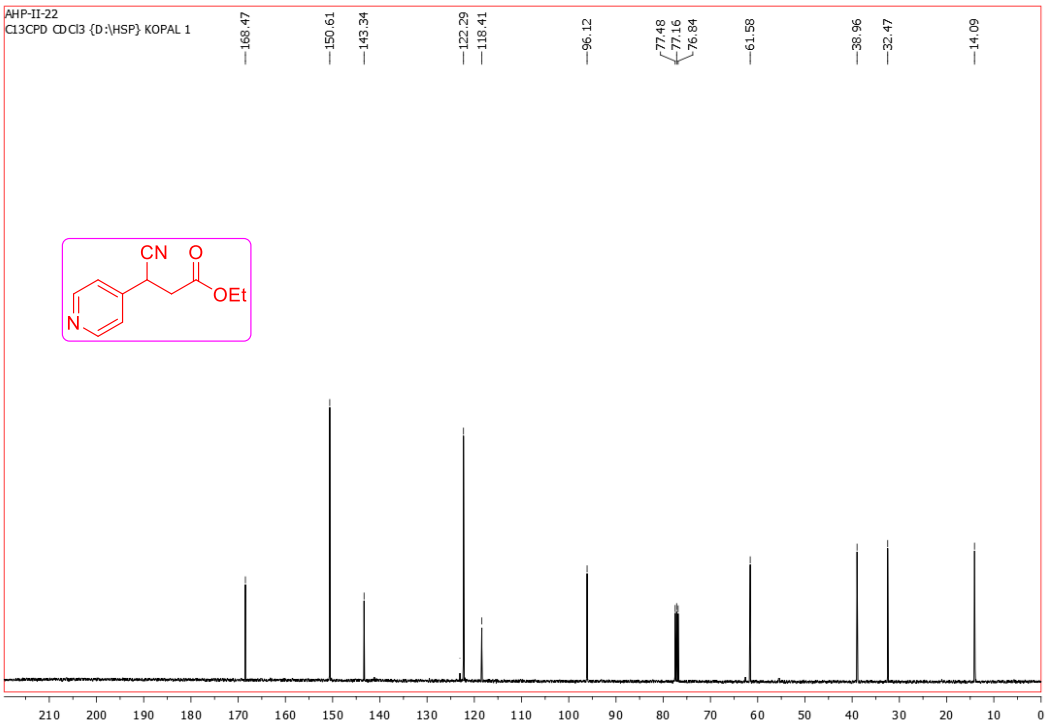
^{13}C (100 MHz, $CDCl_3$) NMR spectrum of Ethyl 3-cyano-3-(3-methoxyphenyl)propanoate **10f.**



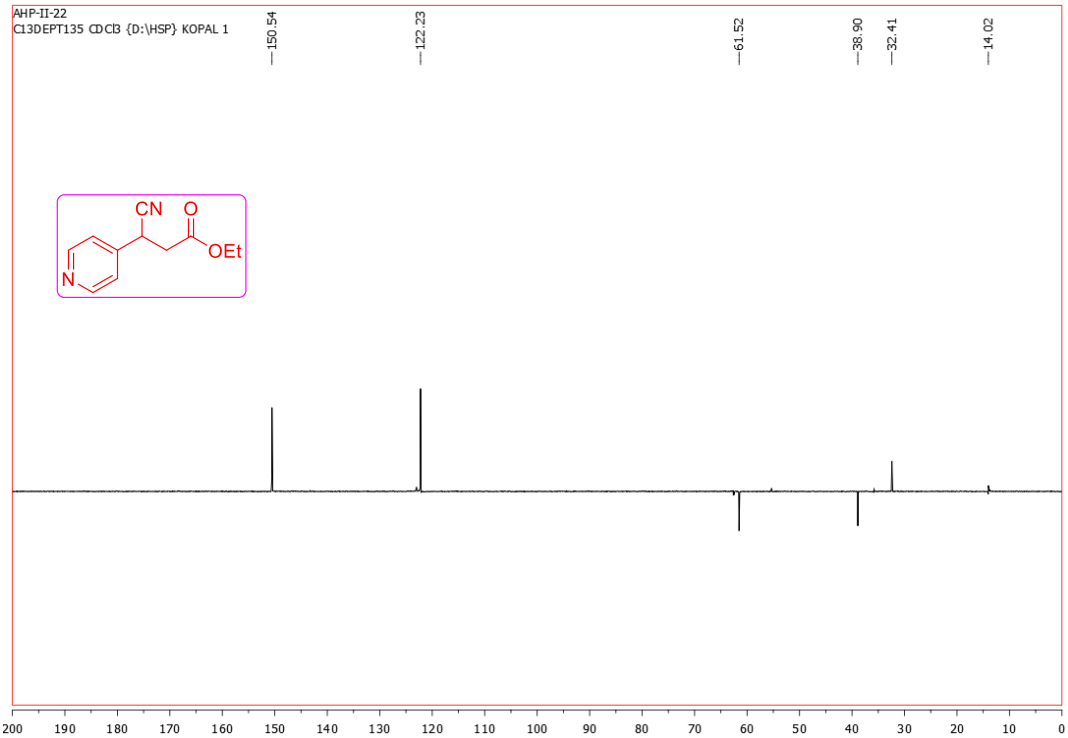
DEPT-135 (100 MHz, $CDCl_3$) NMR spectrum of Ethyl 3-cyano-3-(3-methoxyphenyl)propanoate **10f.**



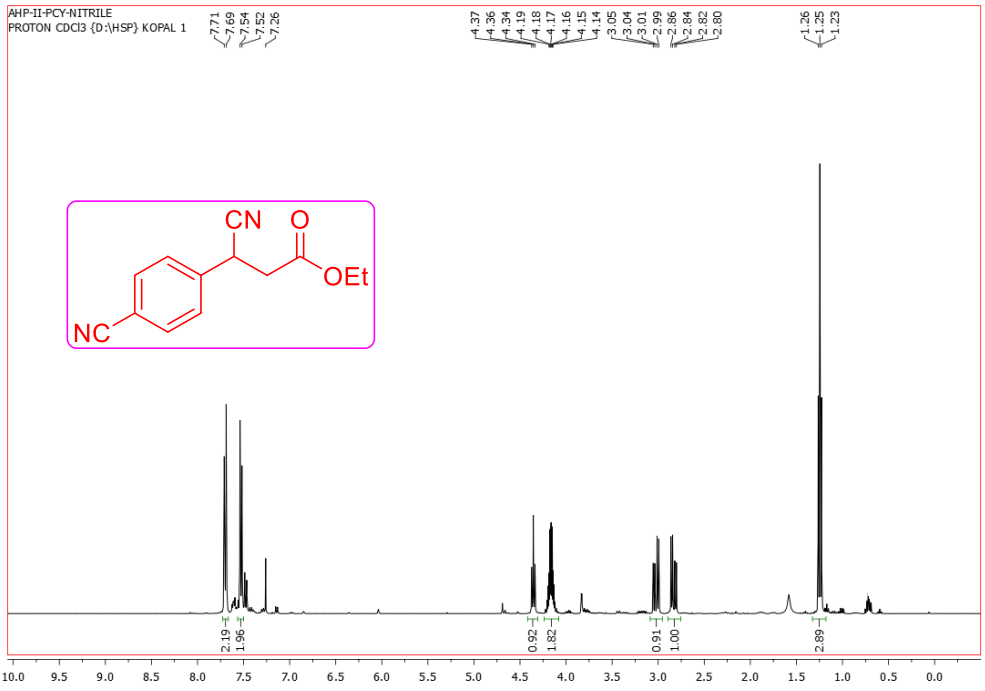
^1H (400 MHz, $CDCl_3$) NMR spectrum of Ethyl 3-cyano-3-(pyridin-4-yl)propanoate **10l.**



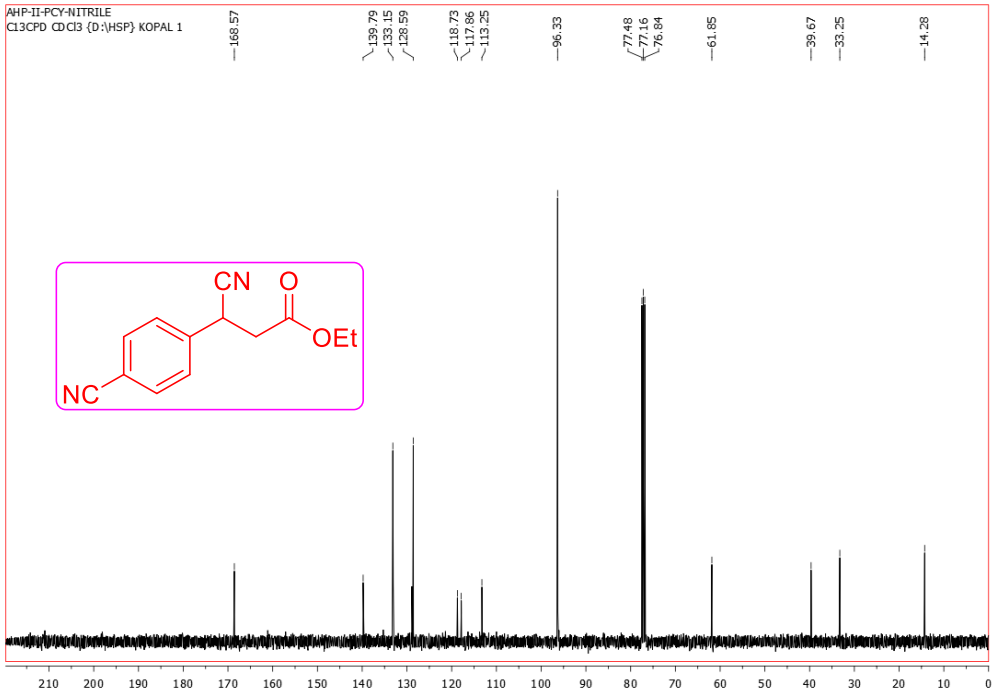
^{13}C (100 MHz, $CDCl_3$) NMR spectrum of Ethyl 3-cyano-3-(pyridin-4-yl)propanoate **10l.**



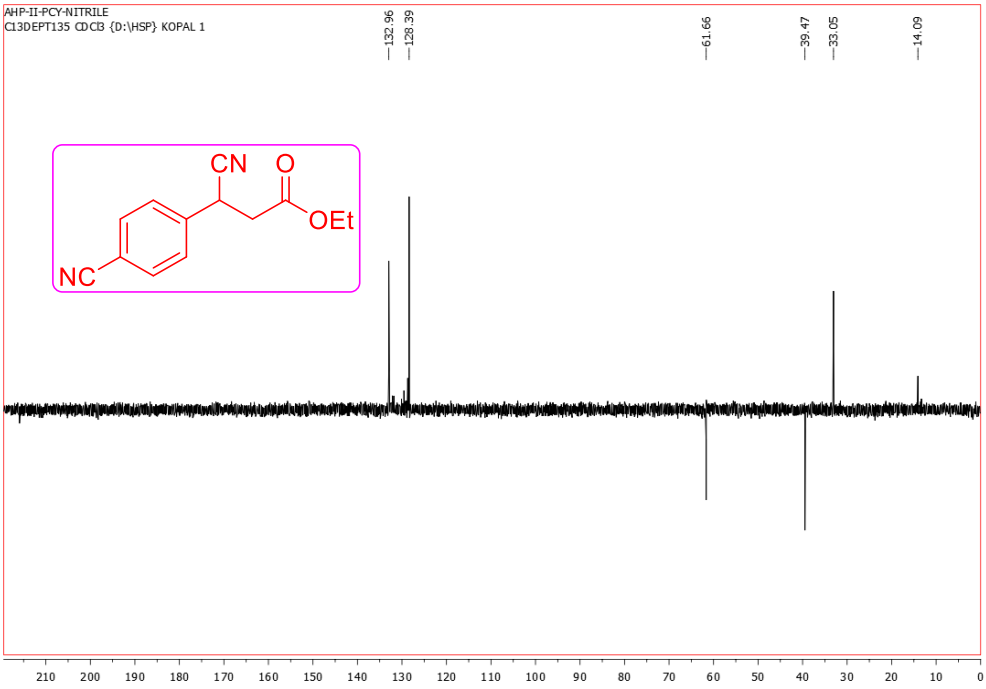
DEPT-135 (100 MHz, $CDCl_3$) NMR spectrum of Ethyl 3-cyano-3-(pyridin-4-yl)propanoate **10l.**



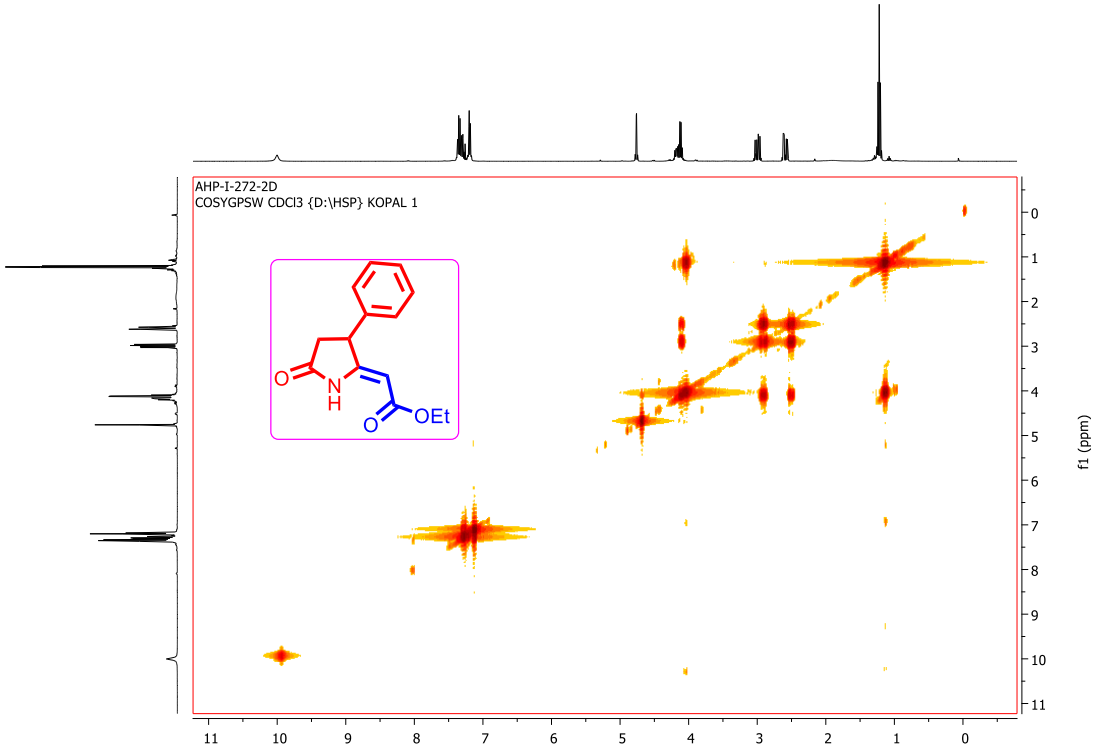
^{1}H (400 MHz, $CDCl_3$) NMR spectrum of Ethyl 3-cyano-3-(4-cyanophenyl)propanoate **10s.**

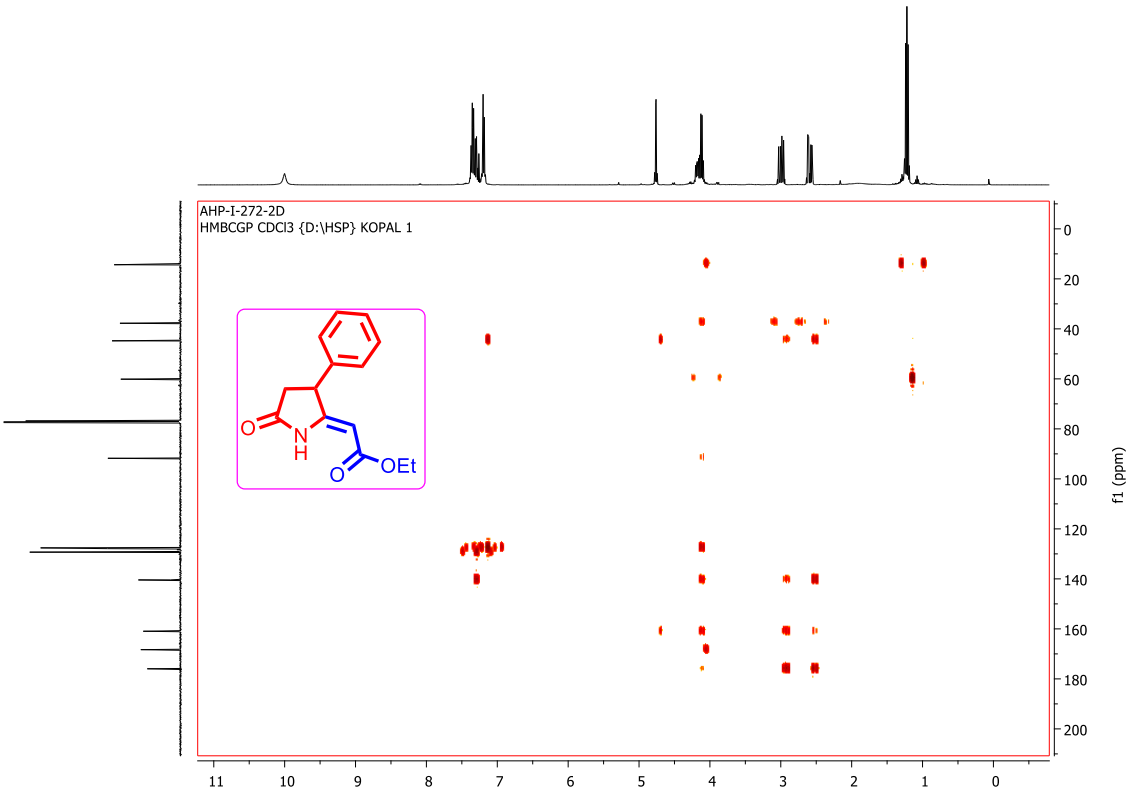


^{13}C (100 MHz, $CDCl_3$) NMR spectrum of Ethyl 3-cyano-3-(4-cyanophenyl)propanoate **10s.**



DEPT-135 (100 MHz, $CDCl_3$) NMR spectrum of Ethyl 3-cyano-3-(4-cyanophenyl)propanoate **10s**.

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H
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OEt
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11
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9
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7
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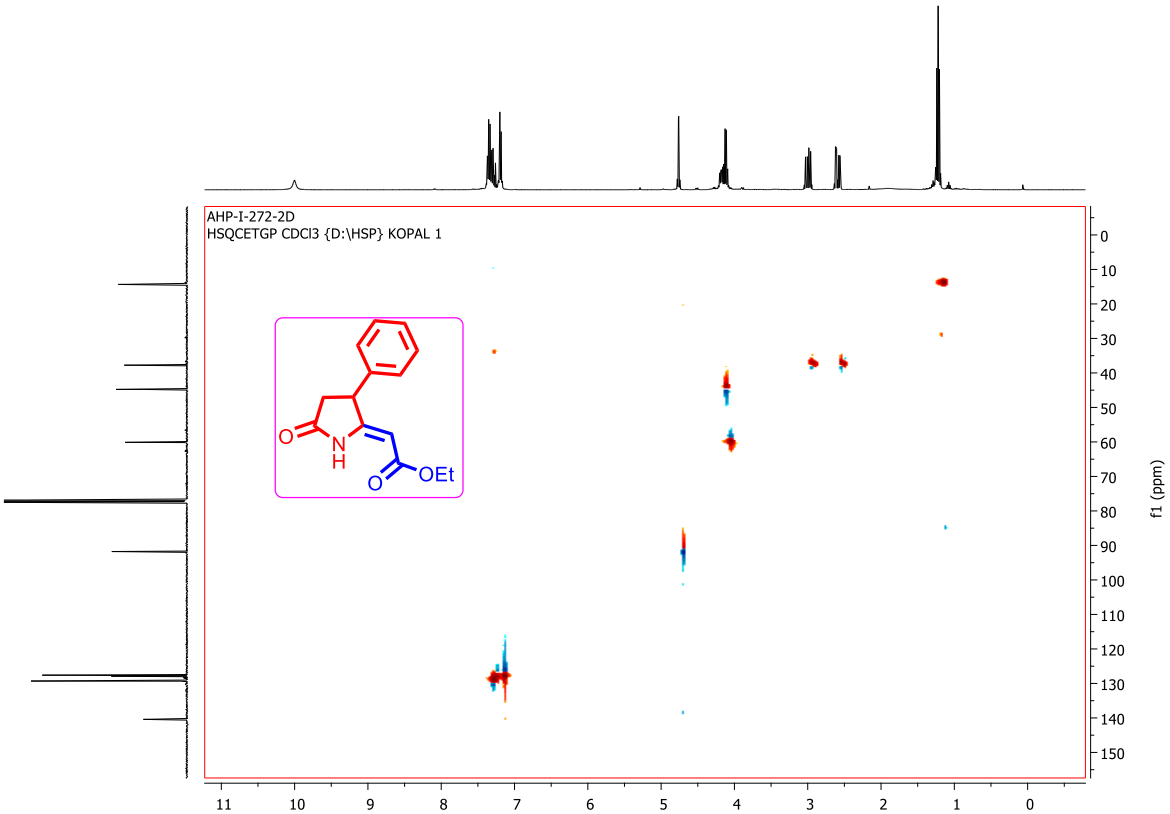
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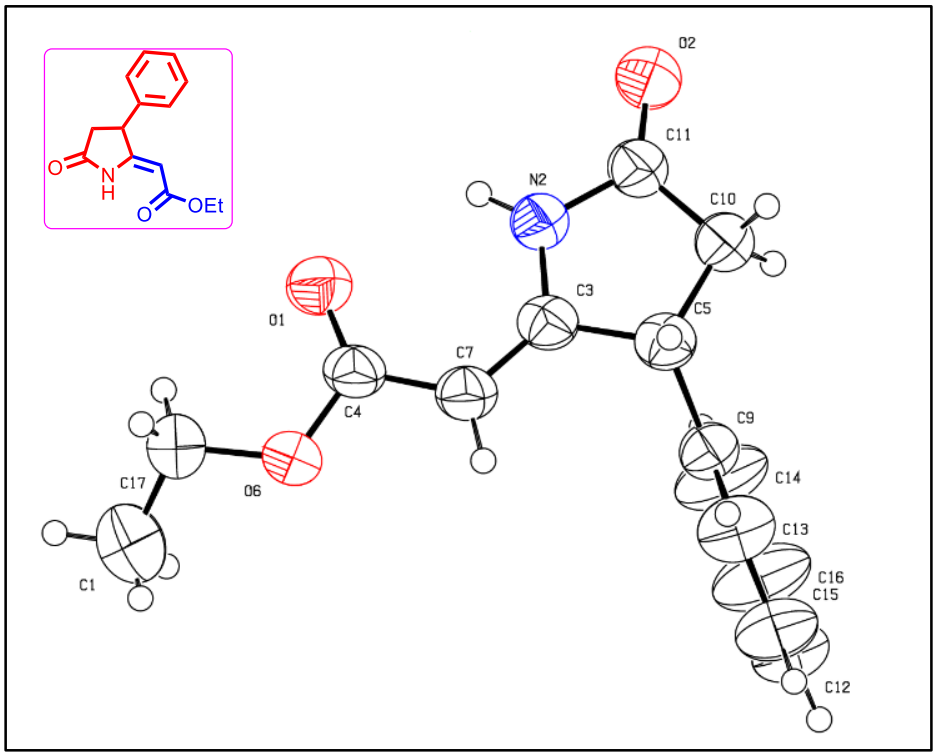


Figure 1. ORTEP diagram of Ethyl (Z)-2-(5-oxo-3-phenylpyrrolidin-2-ylidene)acetate **12a**. Empirical formula, $C_{14}H_{15}NO_3$; formula weight, 245.27; Crystal color, colourless plate, 295K; Crystal System, monoclinic; lattice parameters, a = 25.920(3) Å, b = 5.4308(6) Å, c = 18.988(2) Å; α = 90.0, β = 103.173(13) , γ = 90.0; V = 2602.5(6) A^3; space group I 1 2/a 1 ; D_{calcd} = 1.252 g/cm^3; F_{000} = 1040.52; R ($I \geq 2\sigma_1$) = 0.0615(1786), wR^2 = 0.1904(3012); h, k, lmax = 34,7,25. The detailed X-ray crystallographic data for the compound **12a** is available with CCDC # 1905862 in the Cambridge Crystallographic Data Centre, 12 Union Road, Cambridge CB2 1EZ, UK.

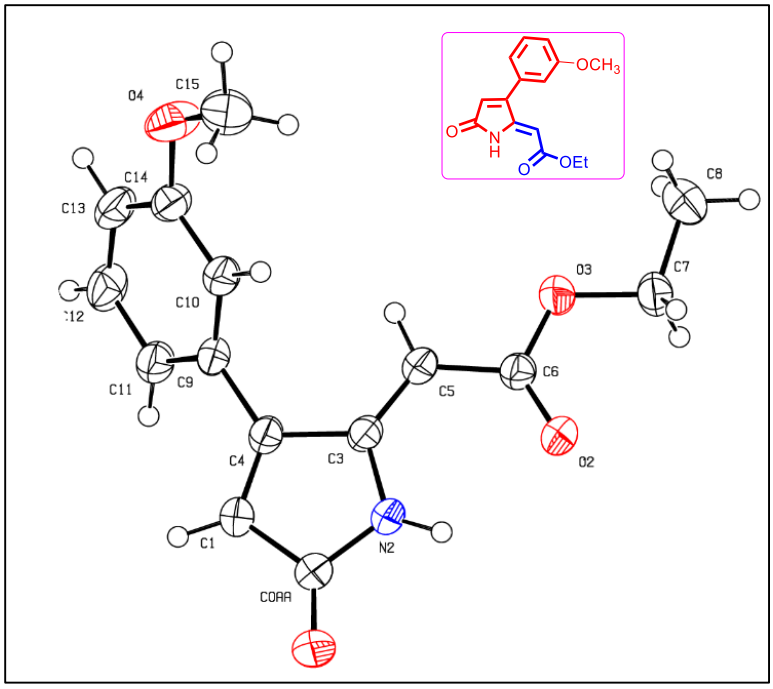
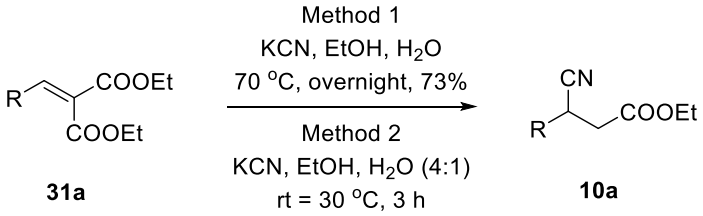


Figure 2. ORTEP diagram of Ethyl (*Z*)-2-(3-(3-Methoxyphenyl)-5-oxo-1,5-dihydro-2*H*-pyrrol-2-ylidene)acetate **20b.**

Empirical formula, $C_{15}H_{15}NO_4$; formula weight, 273.29; Crystal color, faint yellow color block, 298 K; Crystal System, monoclinic; lattice parameters, a =16.6907(12) Å, b = 4.2138(3) Å, c=19.6741(12) Å, α = 90.0, β = 103.083(7), γ = 90.0; V = 1347.79(16)A^3 ; space group P 1 21/n 1; D_{calcd} = 1.3471g/cm^3; F_{000} = 576.3; R ($I \geq 2\sigma_1$) = 0.0379(2553), wR^2 = 0.1054(3011); h, k, l max = 22, 5, 27. The detailed X-ray crystallographic data for the compound **20b** is available with CCDC # 1912295 in the Cambridge Crystallographic Data Centre, 12 Union Road, Cambridge CB2 1EZ, UK.

Reference 22

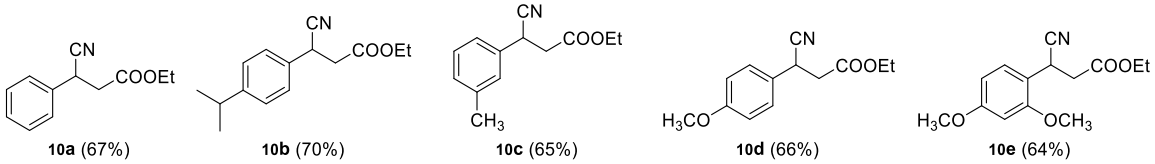
Table S1. Optimization of reaction conditions for the synthesis of β-cyano esters **10a** from diesters.



31a **10a**

Entry	KCN (equiv.)	Solvent	Temp °C	Time (h)	Yield (%)
1	1	Ethanol	rt*	3	45
2	1	Ethanol	70	3	25
3	1	Ethanol:H_2O (6:1)	70	16	37
4	1.2	Ethanol:H_2O (6:1)	70[$]	16	32
5	1.5	Ethanol	rt	3	50
6	1.5	Ethanol	70	3	35
7	1.2	Ethanol:H_2O (6:1)	rt	3	55
8	1.5	Ethanol:H_2O (6:1)	rt	3	61
9	**1.5**	**Ethanol:H_2O (4:1)**	**rt**	**3**	**67**
10	1.5	Ethanol:H_2O (1:1)	rt	3	47
11	2	Ethanol:H_2O (4:1)	rt	3	61
12	1.5	Ethanol:H_2O (4:1)	70	18	45
13	1.5	Methanol	rt	3	20
14	1.5	Methanol:H_2O (4:1)	rt	3	22
15	1.5	Methanol:H_2O (4:1)	70	3	15
16	2	Isopropanol	rt	3	no rxn.
17	2	Isopropanol:H_2O (4:1)	rt-70	4	no rxn.

. * rt = 30-35 °C; [$] Reported conditions (Ref 23);



10a (67%) **10b** (70%) **10c** (65%) **10d** (66%) **10e** (64%)

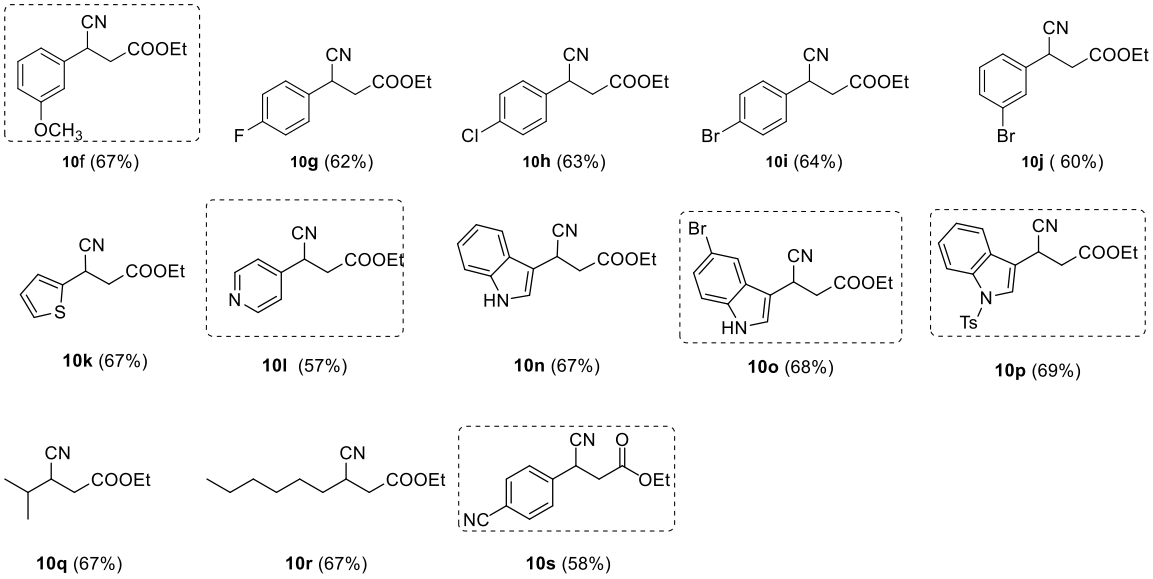


Figure 3. Structures of the nitrile esters **10a-s** prepared in the present work.

Table S2 A series of 2-pyrrolidinones synthesized.

Entry	Nitrile	R^1	R^2	Time (h)	2-pyrrolidinone	Yield%
1	**10a**	C_6H_5	Ethyl	6	**12a**	78
2	**10b**	4-*i*-PrC_6H_4	Ethyl	7	**12b**	77
3	**10c**	3-MeC_6H_4	Ethyl	7	**12c**	77
4	**10d**	4-MeOC_6H_4	Ethyl	7	**12d**	67
5	**10e**	2,4-$(MeO)_2C_6H_3$	Ethyl	7	**12e**	65
6	**10f**	3-MeOC_6H_4	Ethyl	7	**12f**	77
7	**10g**	4-FC_6H_4	Ethyl	5	**12g**	75
8	**10h**	4-ClC_6H_4	Ethyl	5	**12h**	80
9	**10i**	4-BrC_6H_4	Ethyl	6	**12i**	77
10	**10j**	3-BrC_6H_4	Ethyl	6	**12j**	78
11	**10k**	2-Thienyl	Ethyl	5	**12k**	77
12	**10q**	*i*-Pr	Ethyl	6	**12l**	63
13	**10r**	*n*-Hexyl	Ethyl	6	**12m**	68
14	**10n**	3-indolyl	Ethyl	5	**12n**	83
15	**10o**	5-Br-3-indolyl	Ethyl	5	**12o**	85
16	**10p**	*N*-tosyl-3-indolyl	Ethyl	5	**12p**	82
17	**10a**	C_6H_5	Methyl	5	**12q**	78
18	**10b**	4-*i*-PrC_6H_4	Methyl	6	**12r**	77
19	**10o**	5-Br-3-indolyl	Methyl	4	**12s**	82
20	**10l**	4-pyridyl	Ethyl	12	No rxn.	-