

Supporting Information

Synthesis of β -phthalimido-alcohols via regioselective ring opening of epoxide by using reusable basic magnetic nano particles and their biological investigation

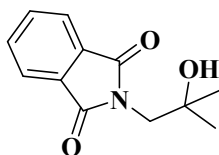
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Ehsan noroozizadeh,^a Roya Karamian^d and Mostafa Asadbegy^d

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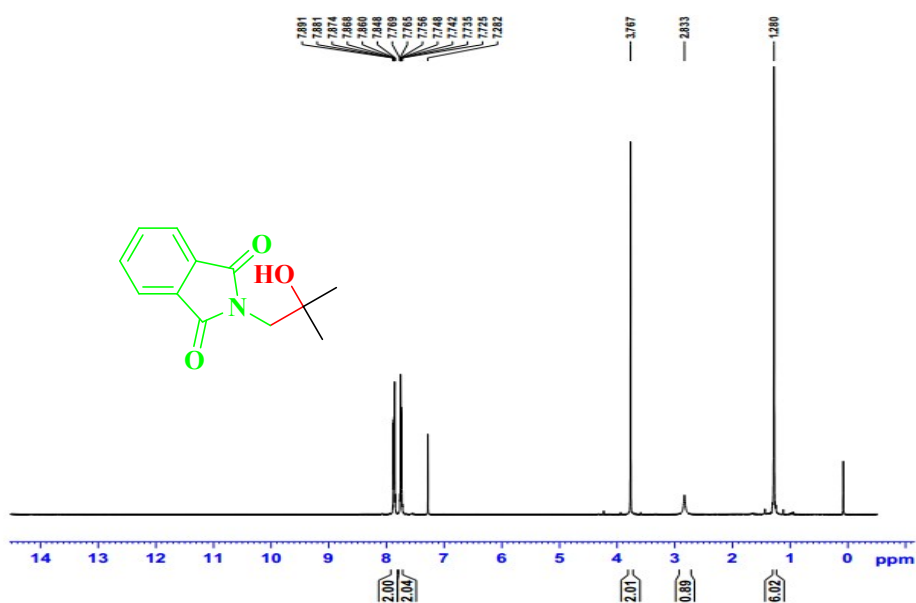
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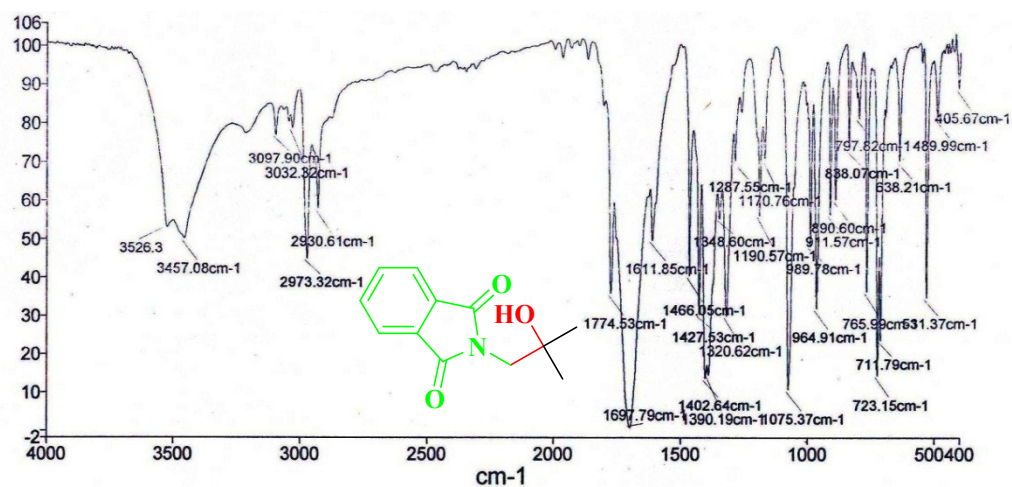
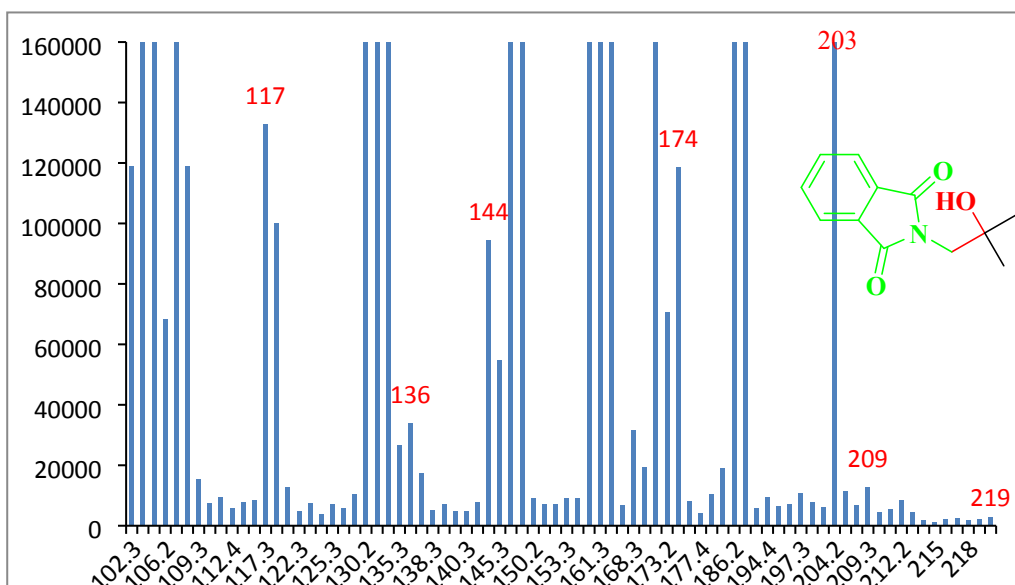
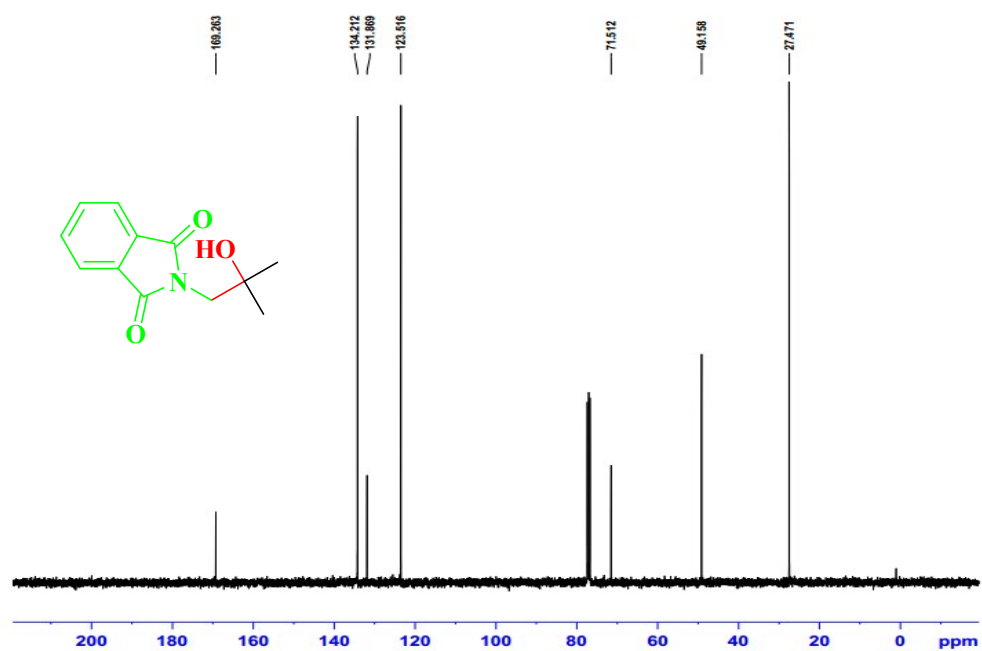
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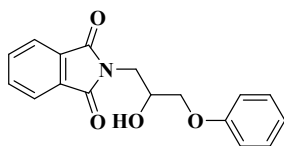


2-(2-hydroxy-2-methylpropyl)isoindoline-1,3-dione (1)

Colorless solid; mp 103-105 °C; IR (KBr) ν_{max} (cm⁻¹): 1697, 1774, 2973, 3444, 3526 ; ¹H NMR (CDCl₃): δ 1.21 (6H, S), 2.83 (1H, S), 3.76 (2H, S), 7.28 (1H, S), 7.72-7.76 (2H, d, J = 6.9), 7.84-7.89 (2H, dd, J = 3.2, 2.4 Hz); ¹³C NMR (CDCl₃): δ 27.4, 49.1, 71.5, 122.5, 131.4, 134.2, 169.2; MS m/z (%): 219 (M⁺).

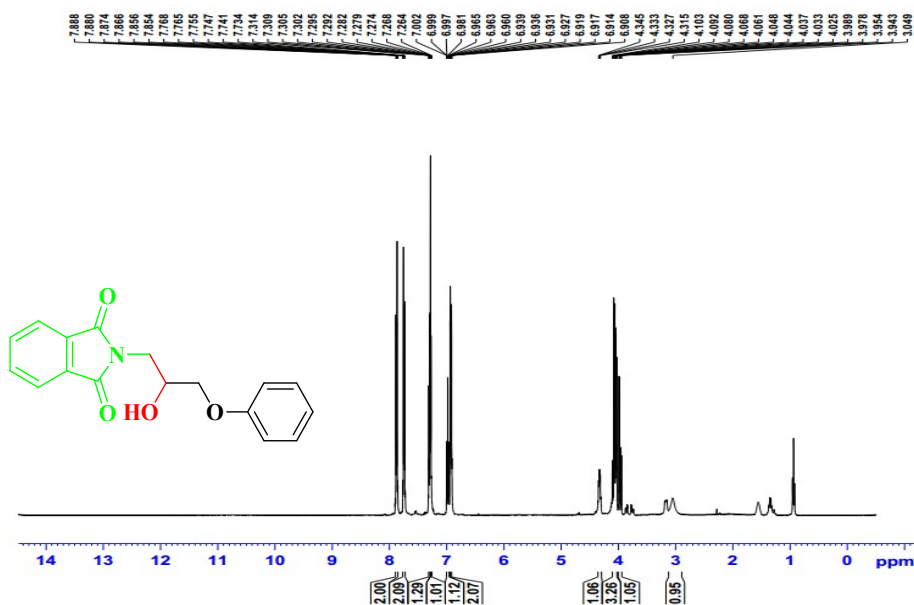


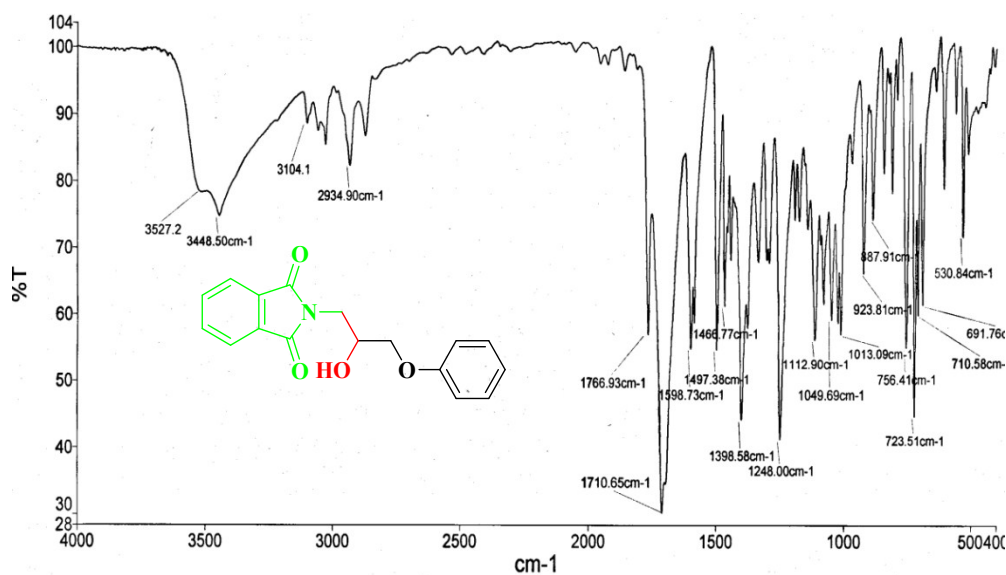
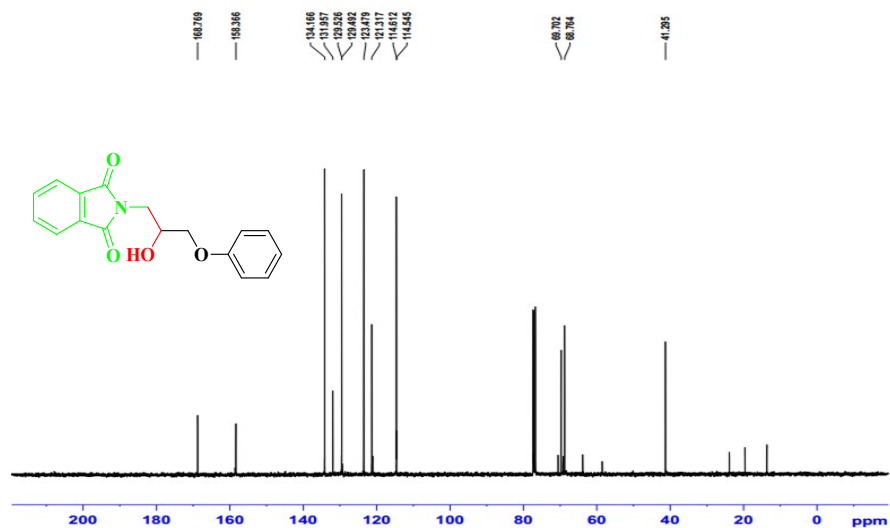




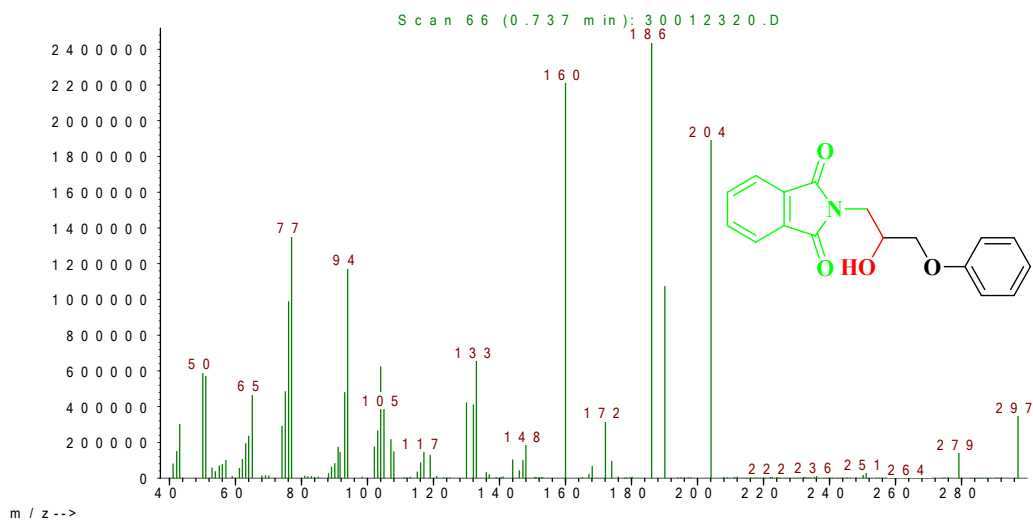
2-(2-hydroxy-3-phenoxypropyl)isoindoline-1,3-dione (2)

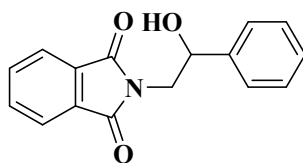
Colorless solid; mp 104-106 °C; IR (KBr) ν_{max} (cm⁻¹): 1710, 1766, 2934, 3448, 3572; ¹H NMR (CDCl₃): δ 3.04 Hz (s, 1H); 3.94-3.98 Hz (q, 1H); 4.02-4.1 Hz (m, 3H); 4.31-4.34 Hz (m, 1H), 6.9-6.93 Hz (d, 2H), 6.90-7.0 Hz (m, 3H); 7.26-7.28 Hz (m, 2H); 7.29-7.31 Hz (m, 2H); 7.73-7.88 Hz (m, 2H); ¹³C NMR (CDCl₃): δ 41.26, 68.76, 69.02, 114.51, 114.61, 121.31, 123.37, 129.48, 129.52, 131.96, 134.16, 158.36, 168.76; MS m/z (%): 297 (M⁺).





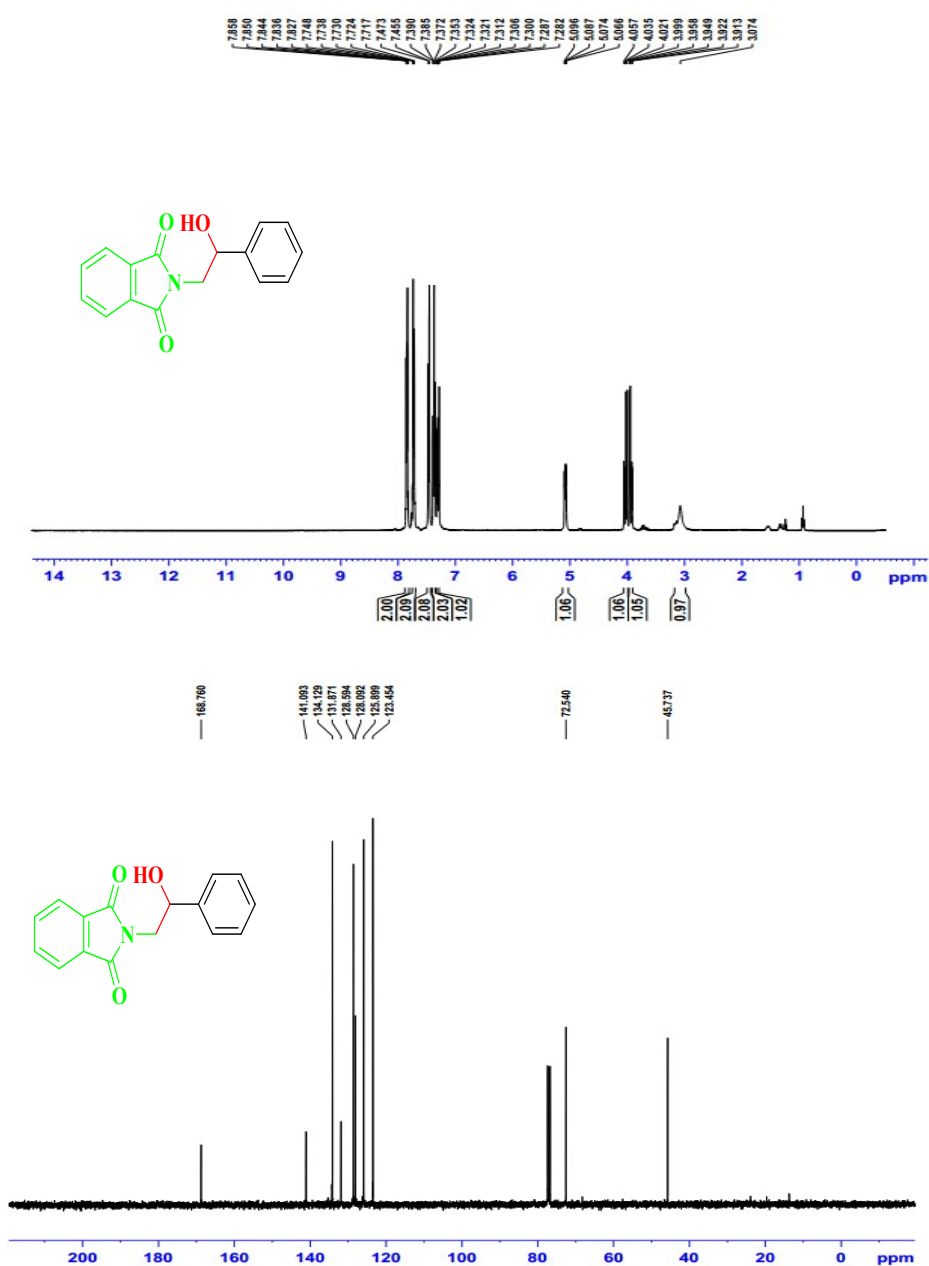
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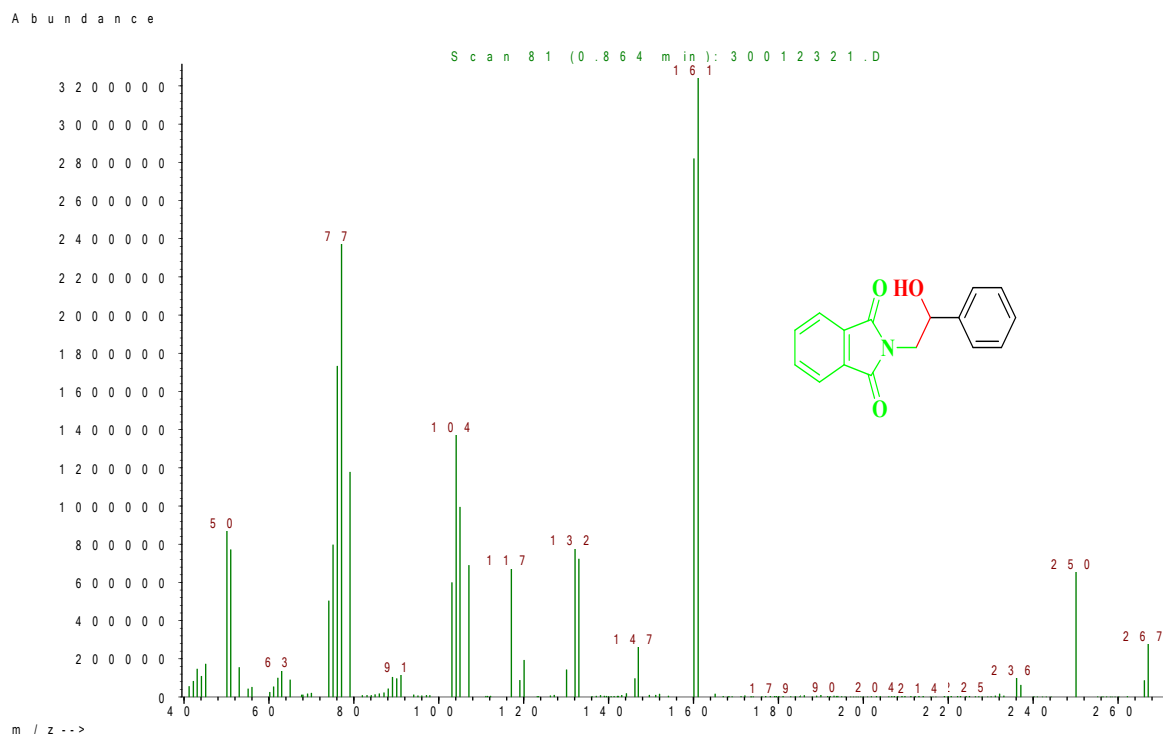
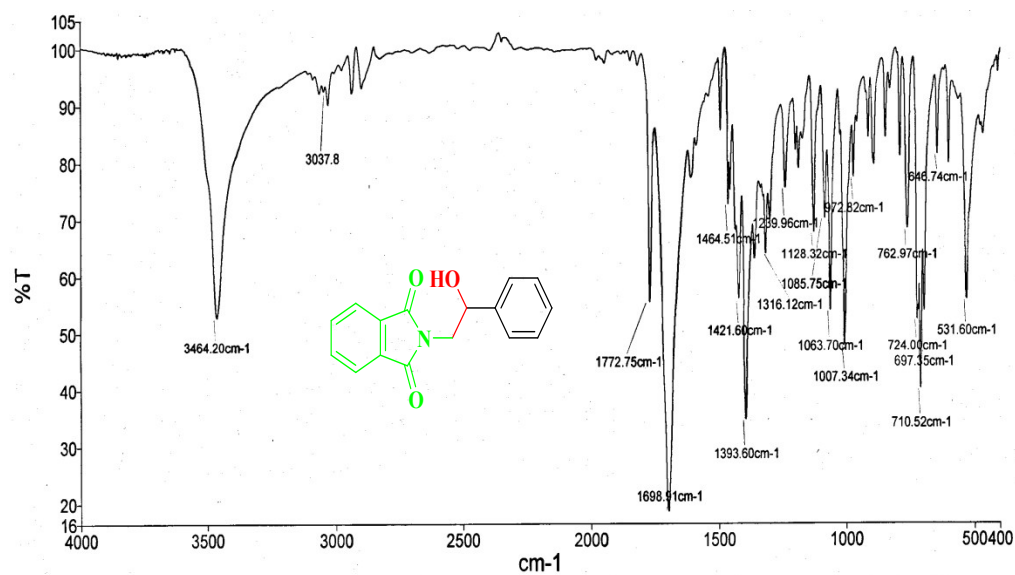


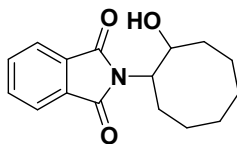


2-(2-hydroxy-2-phenylethyl)isoindoline-1,3-dione (3)

Colorless solid; mp 159-161 °C; IR (KBr) ν_{max} (cm^{-1}): 1772, 1688, 3037, 3454 ; ^1H NMR (CDCl_3): δ 3.07 (s, 1H); 3.91-4.05 (m, 2H); 5.06-5.09 (s, 1H); 7.28-7.47 (m, 5H); 7.71-7.85 (m, 4H); ^{13}C NMR (CDCl_3): δ 45.73, 72.54, 123.45, 125.89, 128.09, 128.54, 131.87, 134.12, 141.03, 168.78; MS m/z (%): 267 (M^+).

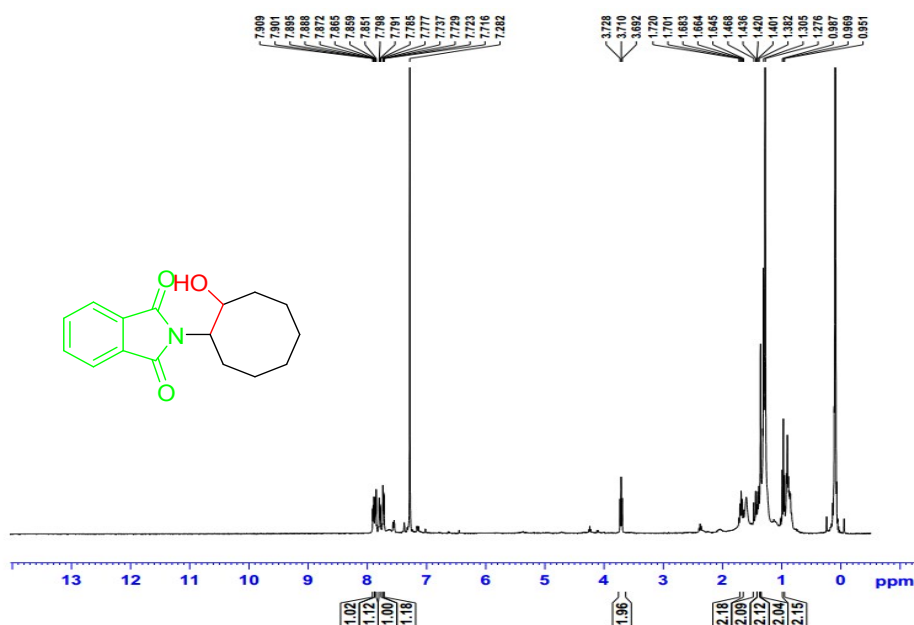


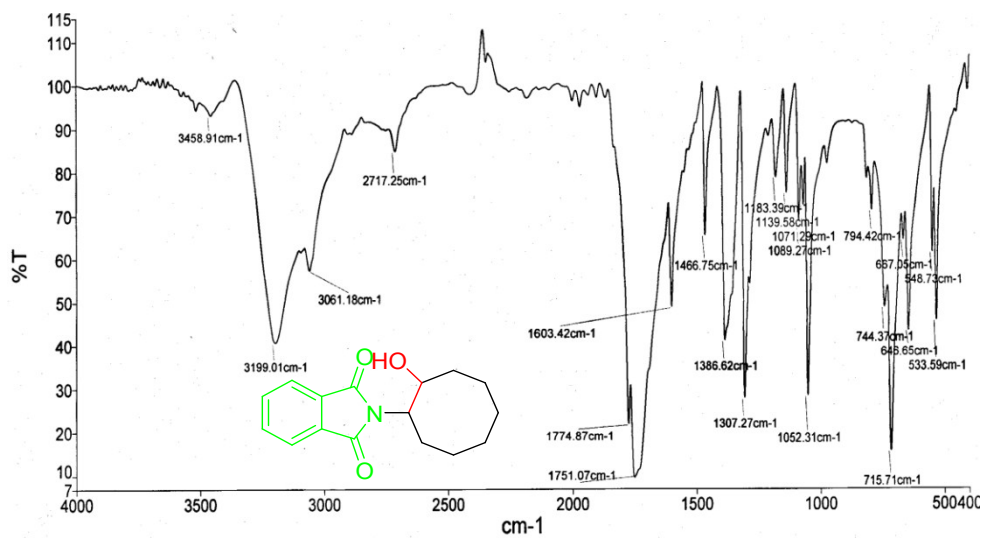
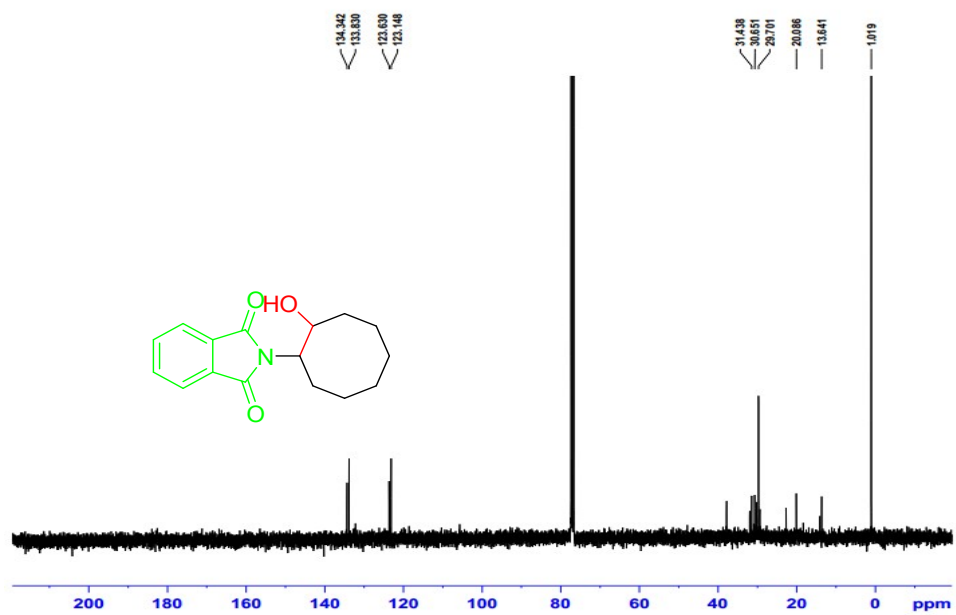


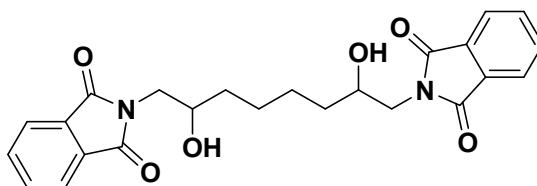
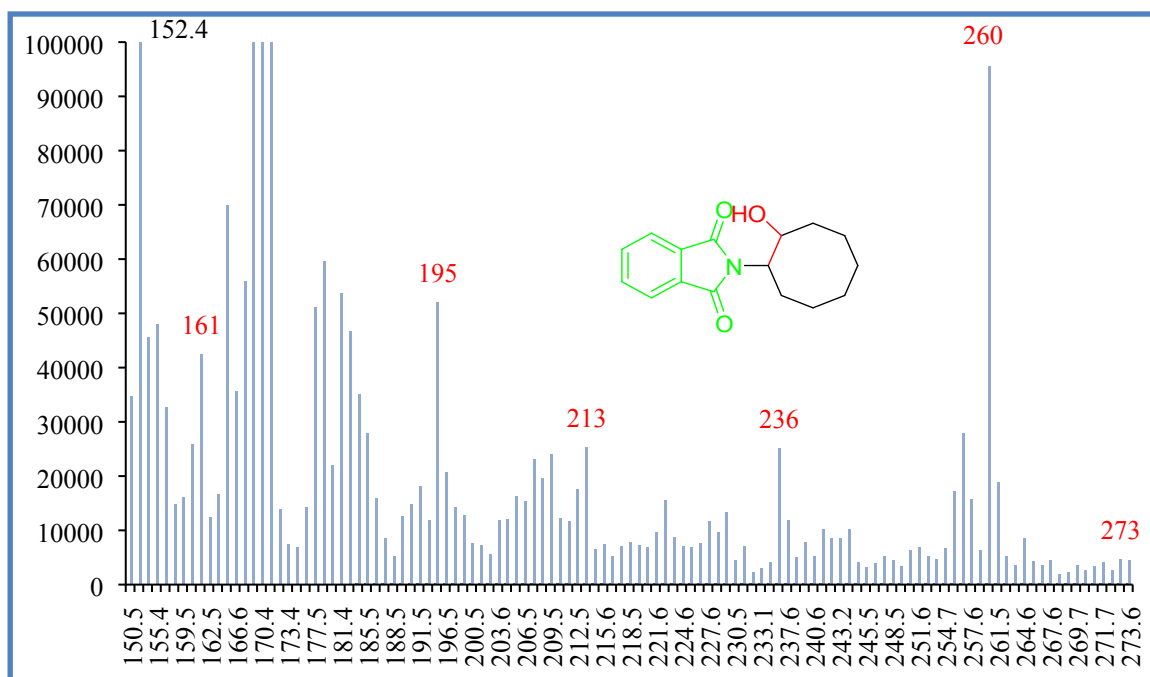


2-(2-hydroxycyclooctyl)isoindoline-1,3-dione (4)

Colorless solid; mp 234-238 °C; IR (KBr) ν_{max} (cm^{-1}): 1751, 1774, 2717, 3061, 3199; ^1H NMR (CDCl_3): δ 0.95-0.98 (m, 2H); 1.27-1.46 (m, 6H); 1.64-1.72 (m, 2H); 3.71 (t, $J = 6.9$, 2H); 7.71-7.91 (m, 4H); ^{13}C NMR (CDCl_3): δ 13.64, 20.08, 29.07, 30.65, 31.43, 123.14, 123.63, 131.83, 13434, 168.78; MS m/z (%): 273 (M^+).

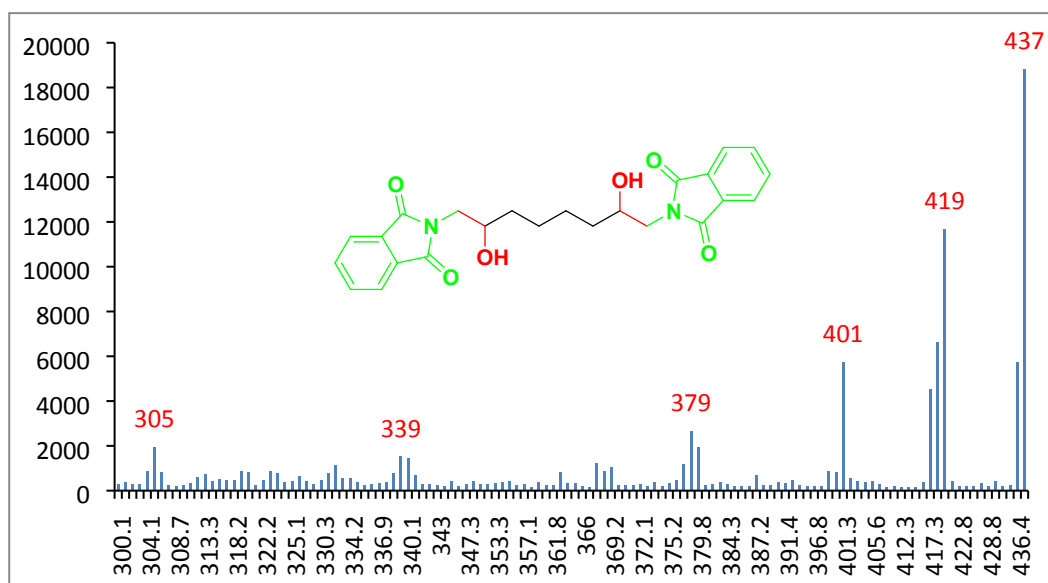
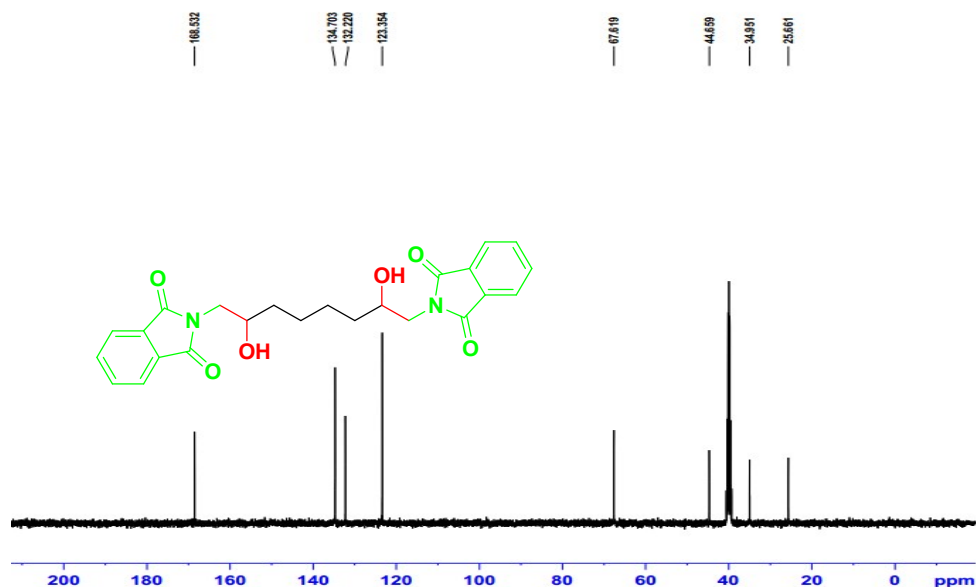
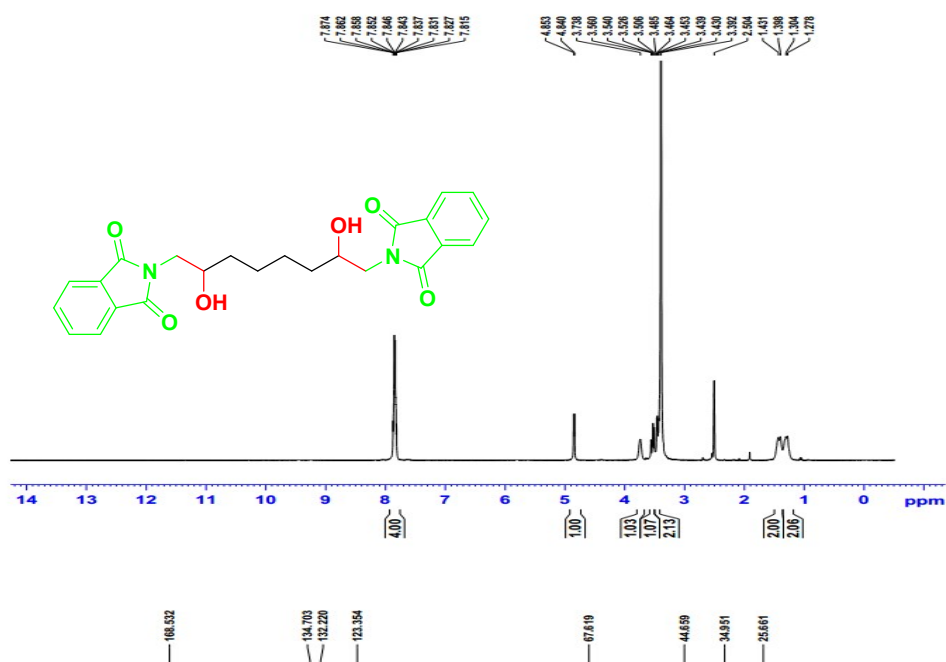


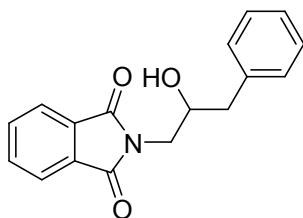
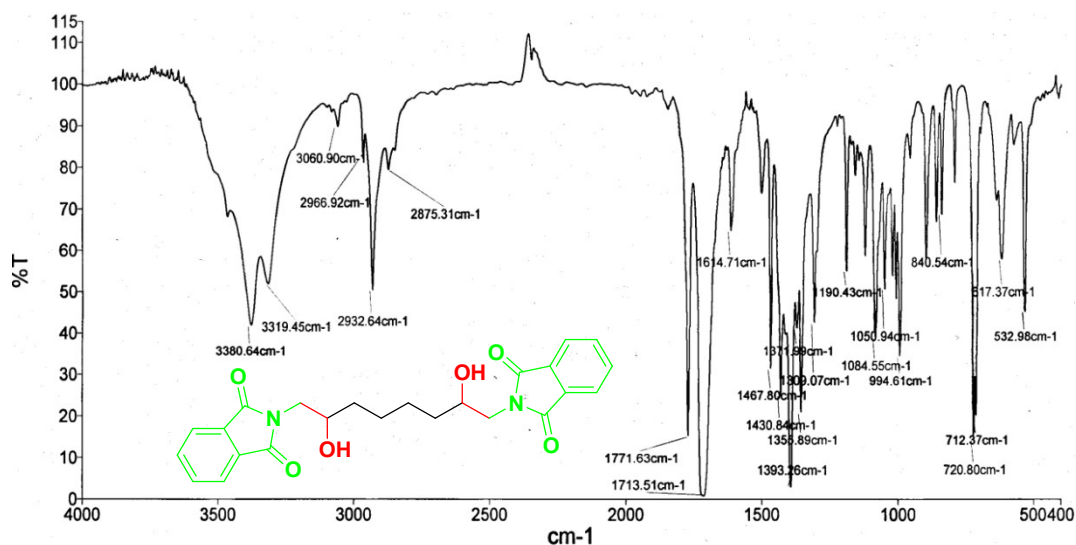




(2,2'-(2,7-dihydroxyoctane-1,8-diyl)diisoindoline-1,3-dione) (5)

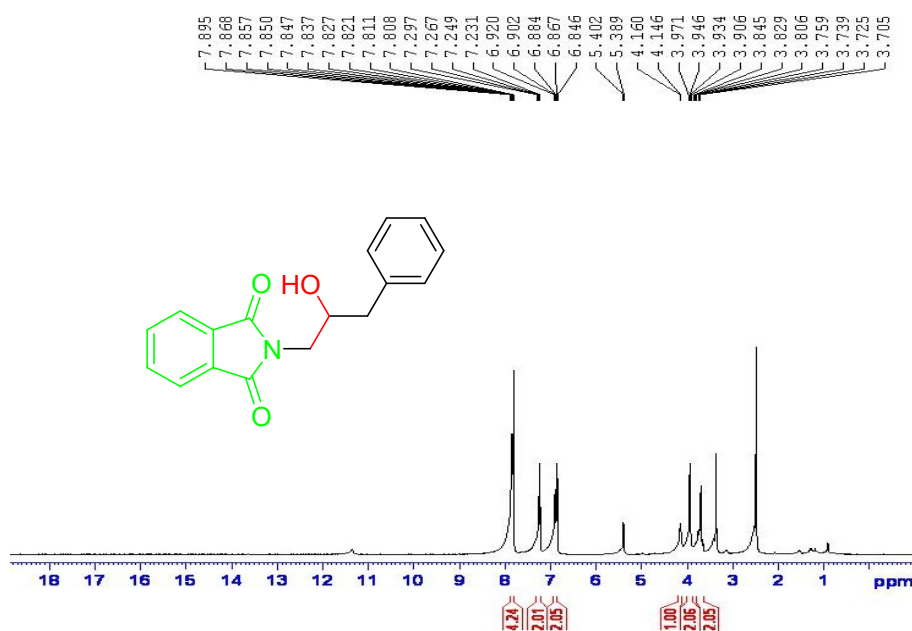
Colorless solid; mp 203-205 °C; IR (KBr) ν_{max} (cm^{-1}): 1713, 1771, 2932, 3319, 3380; ^1H NMR (DMSO-d_6): δ 1.27-1.3 (d, $J = 13.2$, 2H); 1.39-1.43 (d, $J = 10.4$, 2H); 3.43-3.56 (m, 3H); 3.73 (s, 1H); 4.84-4.85 (d, $J = 5.2$, 1H); 7.81-7.84 (m, 4H); ^{13}C NMR (DMSO-d_6): δ 25.66, 34.95, 44.65, 67.61, 123.35, 132.22, 134.7, 168.53; MS m/z (%): 437 (M^+ , 1).

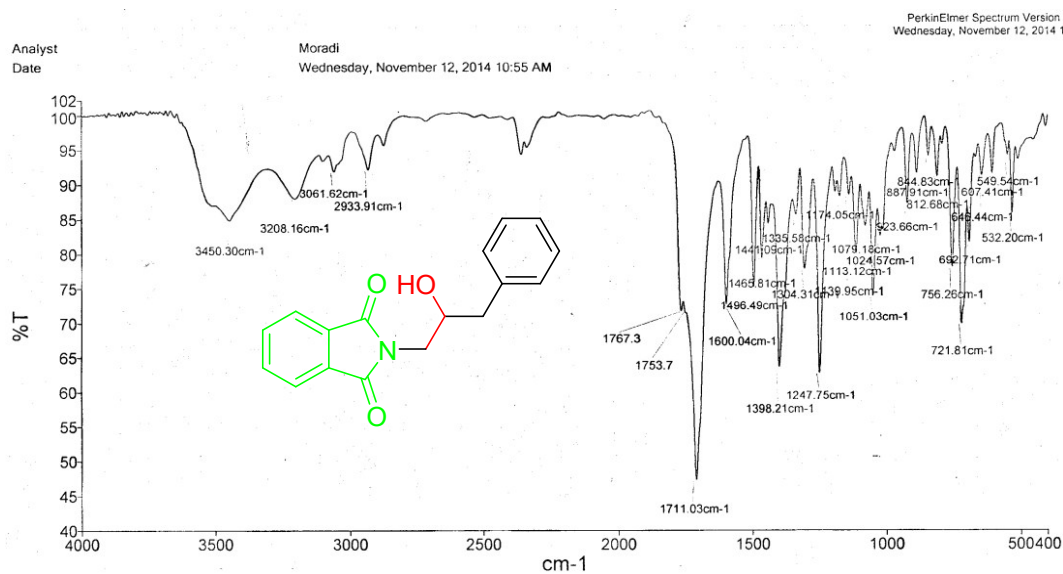
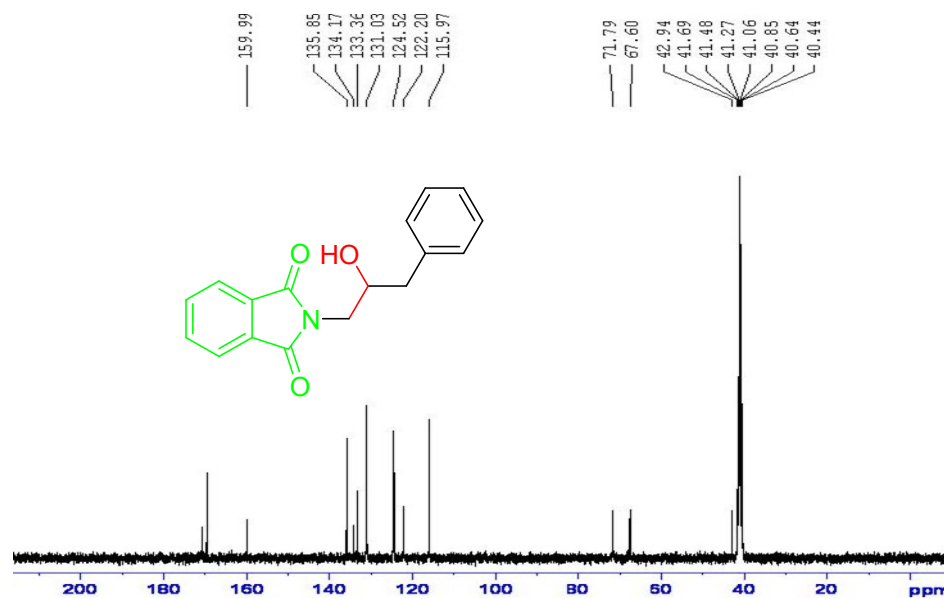




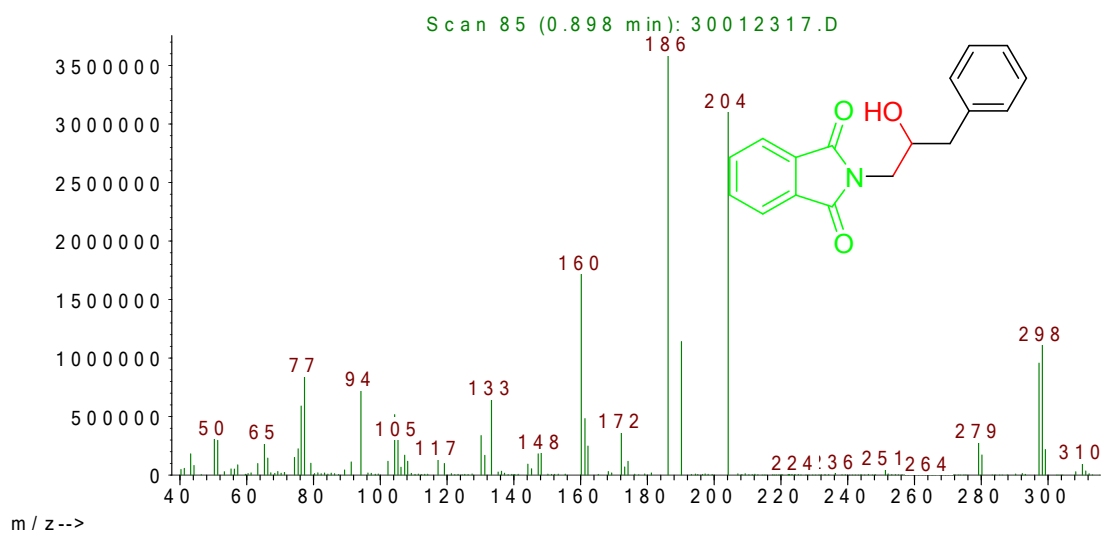
2-(2-hydroxy-3-phenylpropyl)isoindoline-1,3-dione (6)

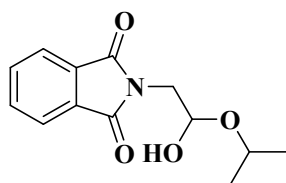
Colorless solid; mp 121-123 °C; IR (KBr) ν_{max} (cm⁻¹): 1711, 1753, 2993, 3450; ¹H NMR (DMSO-d₆): δ 3.64-3.75 (m, 2H); 3.95 (d, J = 7.5, 2H); 4.15 (d, J = 4.2, 1H); 5.39 (d, J = 3.9, 1H); 6.84-6.92 (m, 2H); 7.23-7.29 (m, 2H); 7.8-7.89 (m, 4H); ¹³C NMR (DMSO-d₆): δ 42.94, 67.6, 71.4, 115.97, 122.2, 124.2, 131.03, 133.3, 134.1, 135.8, 159.9; MS m/z (%): 281 (M⁺).





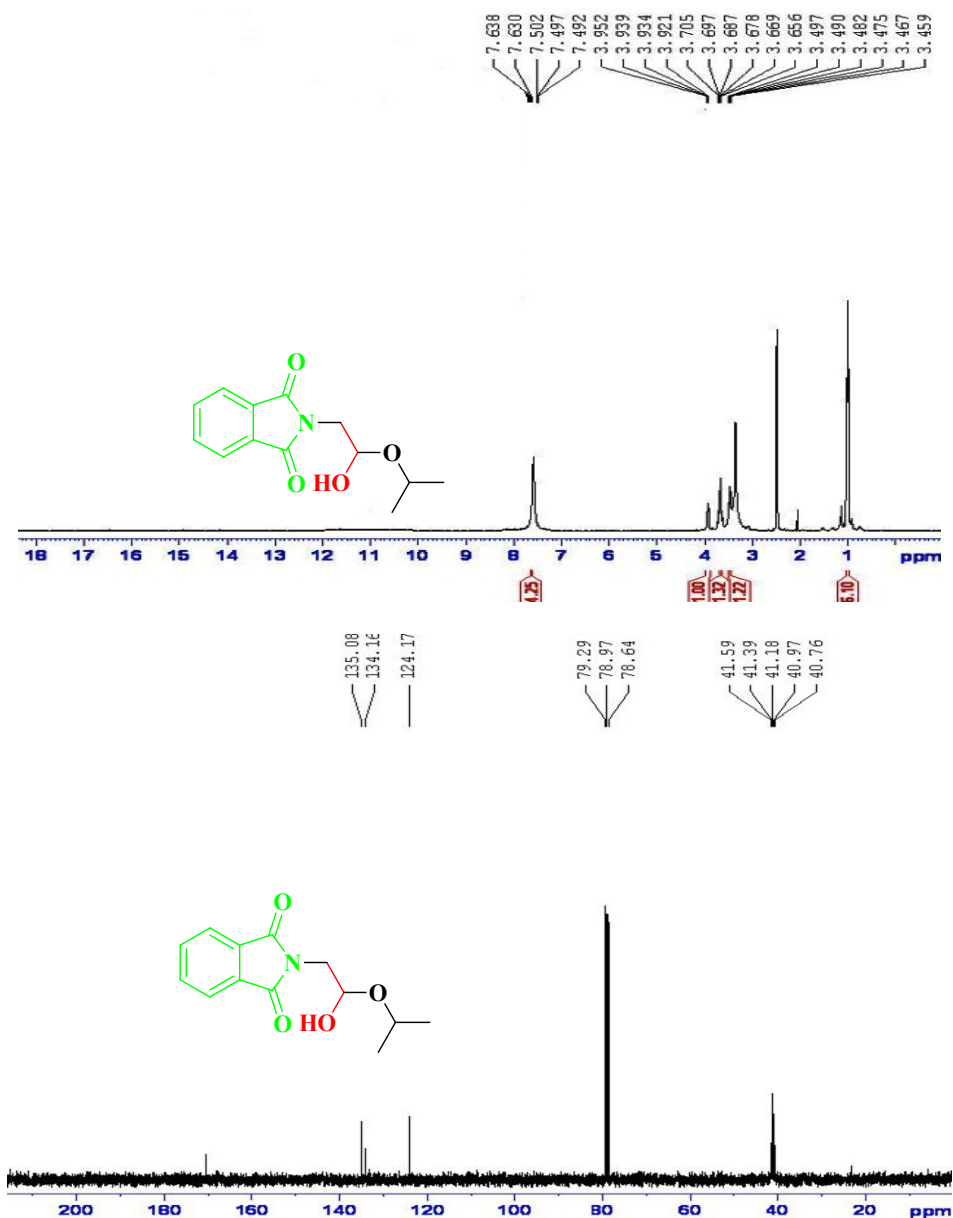
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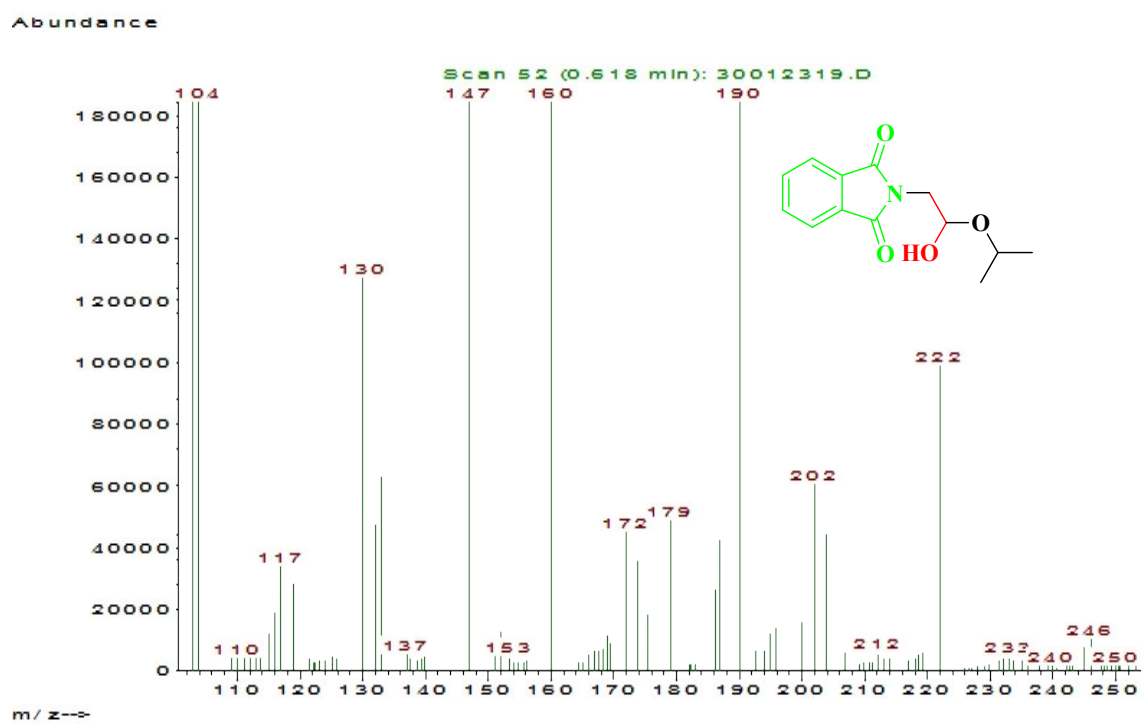
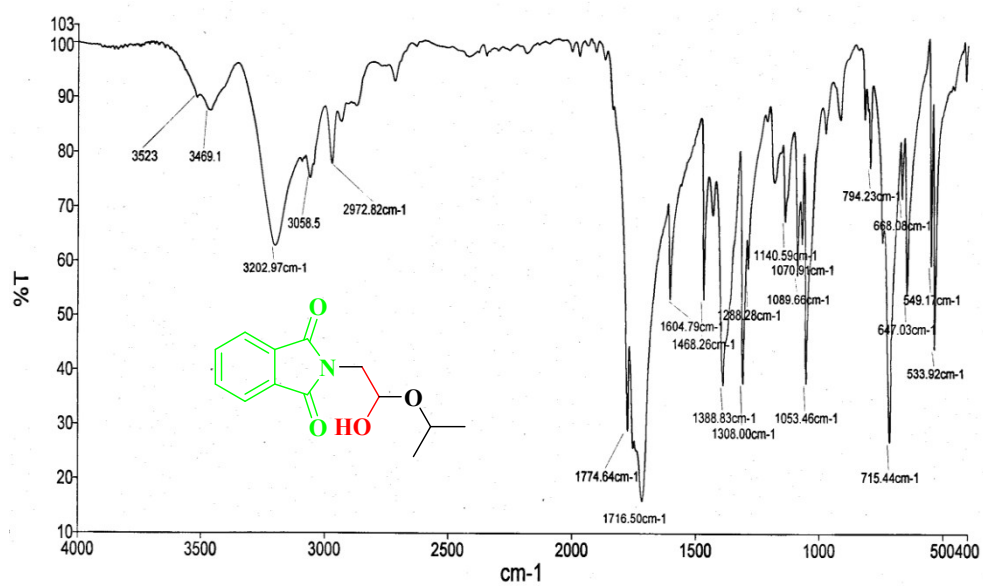


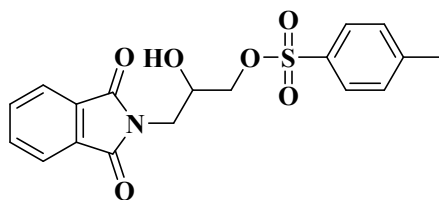


2-(2-hydroxy-2-isopropoxyethyl)isoindoline-1,3-dione (7)

Colorless solid; mp 125-128 °C; IR (KBr) ν_{max} (cm⁻¹): 1715, 1774, 2972, 3202, 3469; ¹H NMR (DMSO-d₆): δ 0.99-1.02 (s, 6H); 3.28-3.49 (m, 3H); 3.65-3.7 (m, 1H); 3.92-3.95 (m, 1H); 7.49-7.5 (m, 4H); ¹³C NMR (DMSO-d₆): δ 23, 124.17, 134.16, 135.08, 170 ; MS m/z (%): 249 (M⁺).

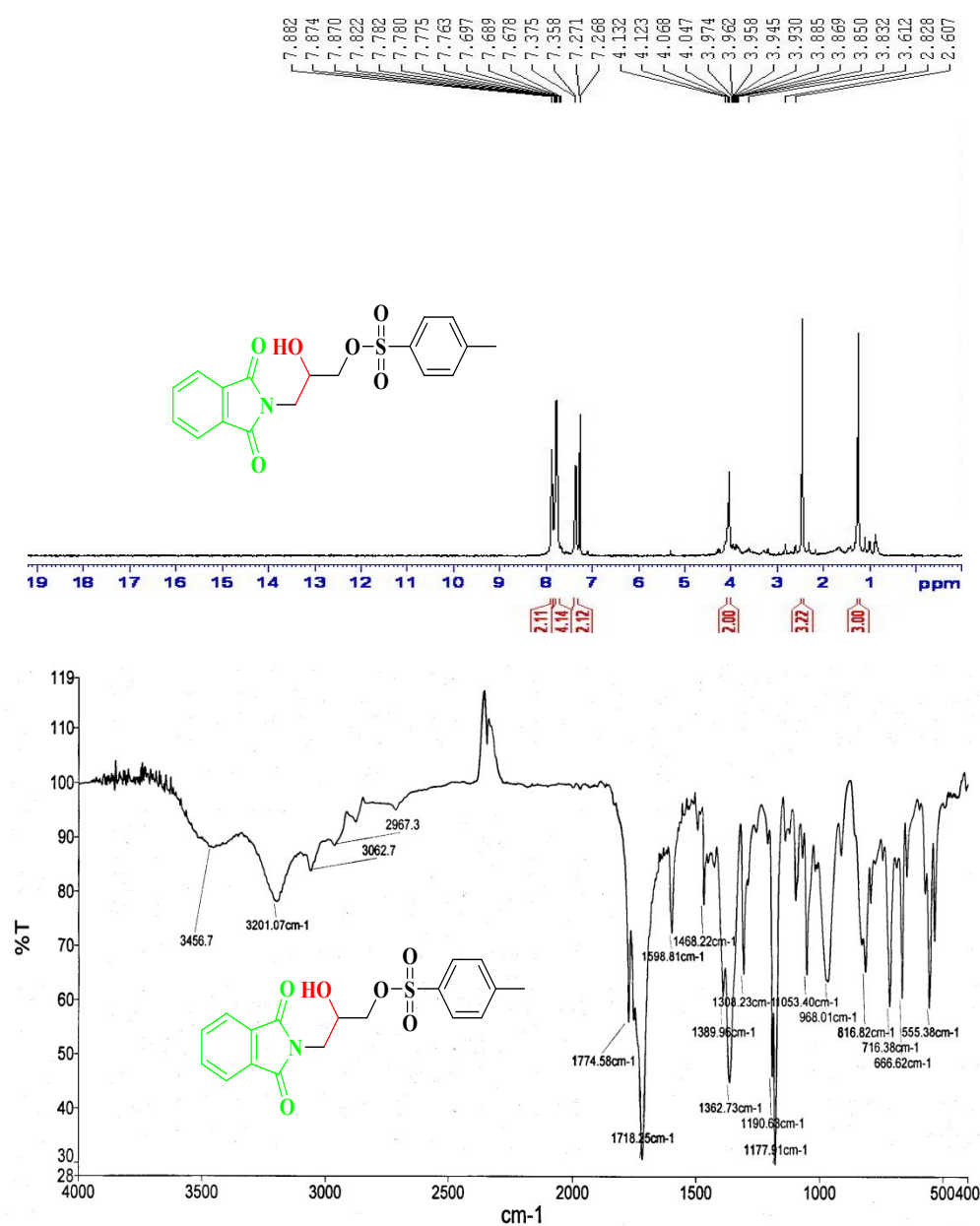


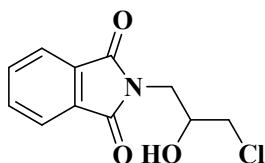
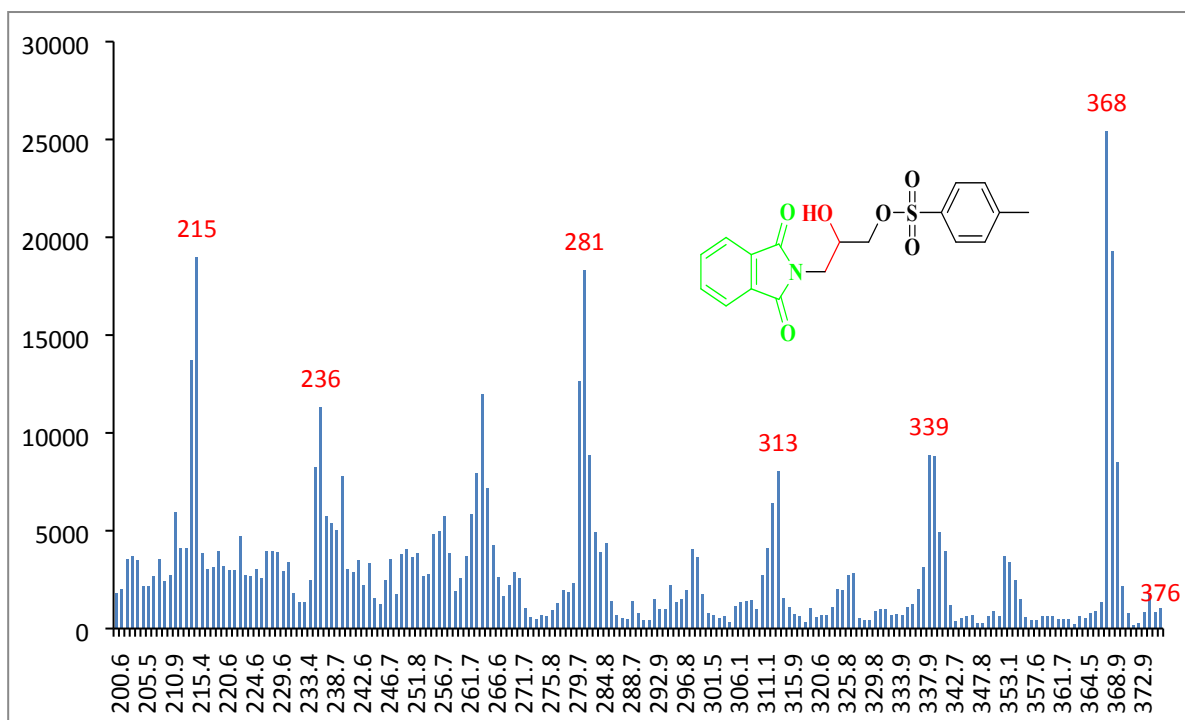




3-(1,3-dioxoisindolin-2-yl)-2-hydroxypropyl 4-methylbenzenesulfonate (8)

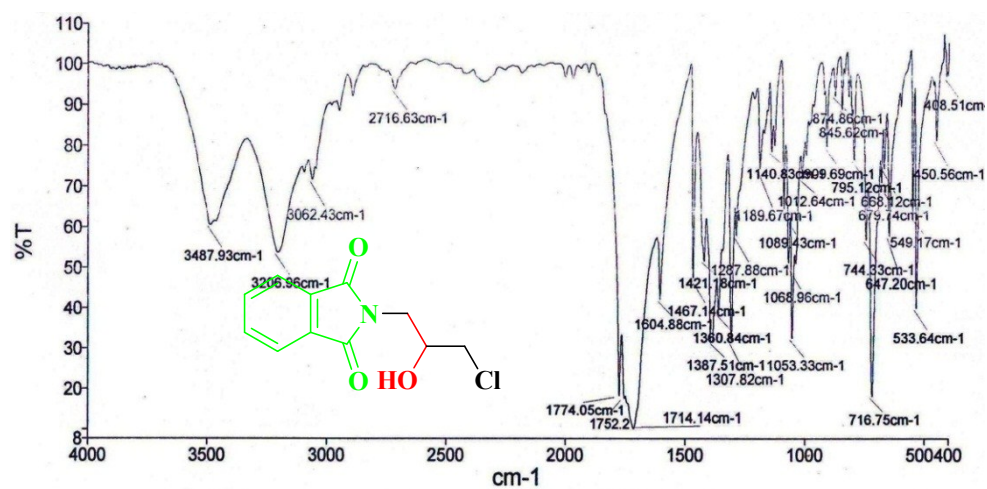
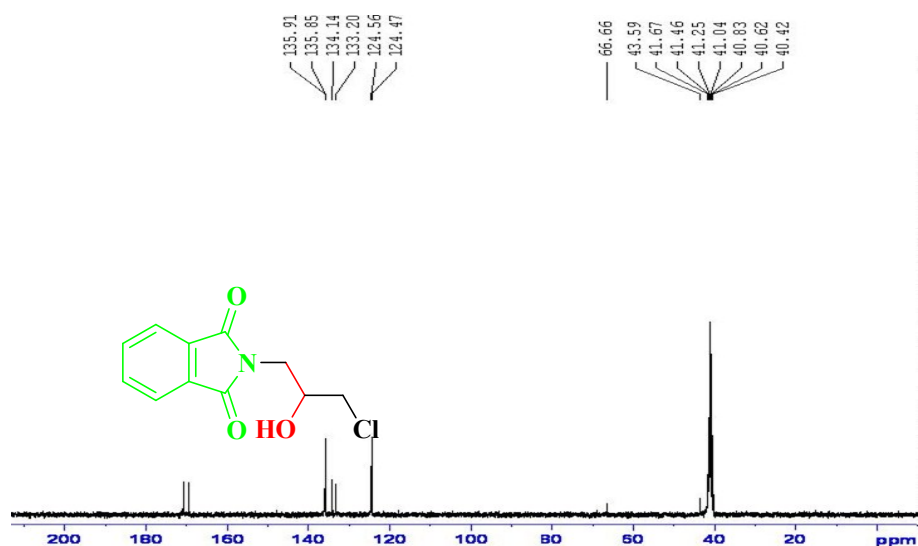
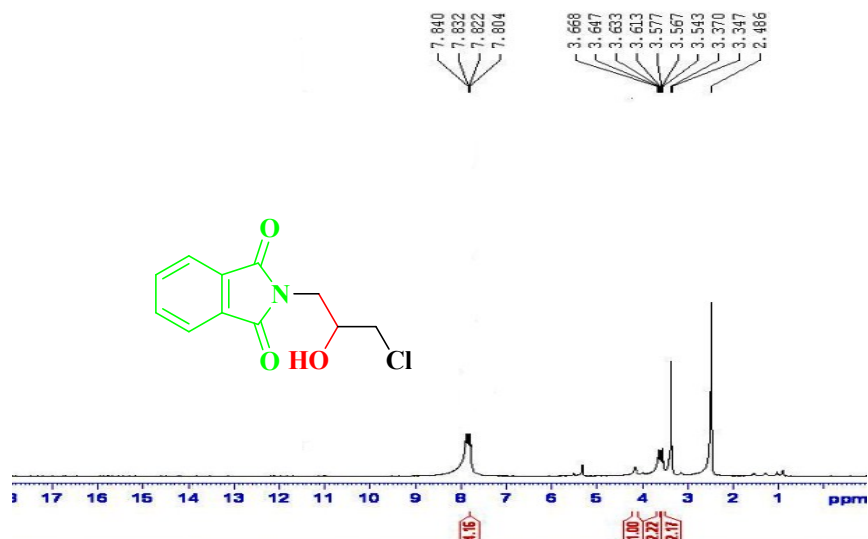
Colorless solid; mp 132-135 °C; IR (KBr) $\nu_{\max}$ (cm⁻¹): 1716, 1774, 3027, 3201, 3456; ¹H NMR (CDCl₃): δ 1.25 (s, 3H); 2.46 (s, 3H); 4.04 (s, 2H); 7.36 (d, J = 5.1, 2H); 7.76-7.82 (m, 4H); 7.87-7.88 (m, 2H); MS m/z (%): 376 (M⁺, 1).

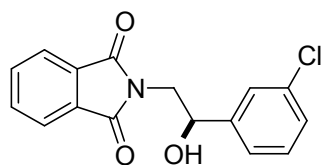
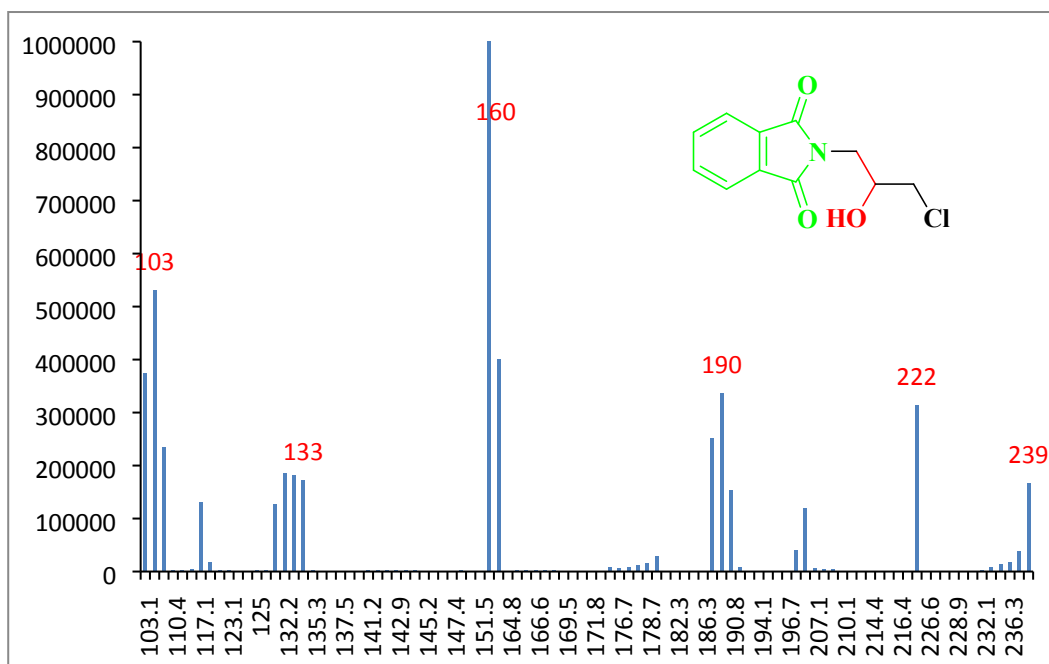




2-(3-chloro-2-hydroxypropyl)isoindoline-1,3-dione (9)

Colorless solid; mp 173-176 °C; IR (KBr) $\nu_{\max}$ (cm⁻¹): 1714, 1752, 1774, 2716, 3062, 3206, 3487; ¹H NMR (DMSO-d₆): δ 3.54-3.57 (m, 2H); 3.63-3.66 (m, 2H); 4.2 (s, 2H); 5.2 (s, OH); 7.8-7.84 (m, 4H); ¹³C NMR (DMSO-d₆): δ 43.5, 66.6, 124.4, 124.5, 133.2, 134.1, 135.8, 135.9, 159, 161 ; MS m/z (%): 239 (M⁺).





(R)-2-(2-(3-chlorophenyl)-2-hydroxyethyl)isoindoline-1,3-dione (10)

Colorless solid; mp 109-112 °C; IR (KBr) ν_{max} (cm⁻¹): 1714, 1774, 2937, 3447; ¹H NMR (DMSO-d₆): δ 3.62-3.79 (m, 2H); 4.89-4.91 (t, 1H); 5.84 (s, OH); 7.31-7.36 (t, 3H); 7.41 (s, 1H); 7.82-7.86 (t, 4H); ¹³C NMR (DMSO-d₆): δ 45.6, 69.3, 123.3, 123.4, 126.2, 127.8, 130.5, 132.0, 133.0, 133.4, 134.7, 134.8, 145.4, 168.2, 169.7.

