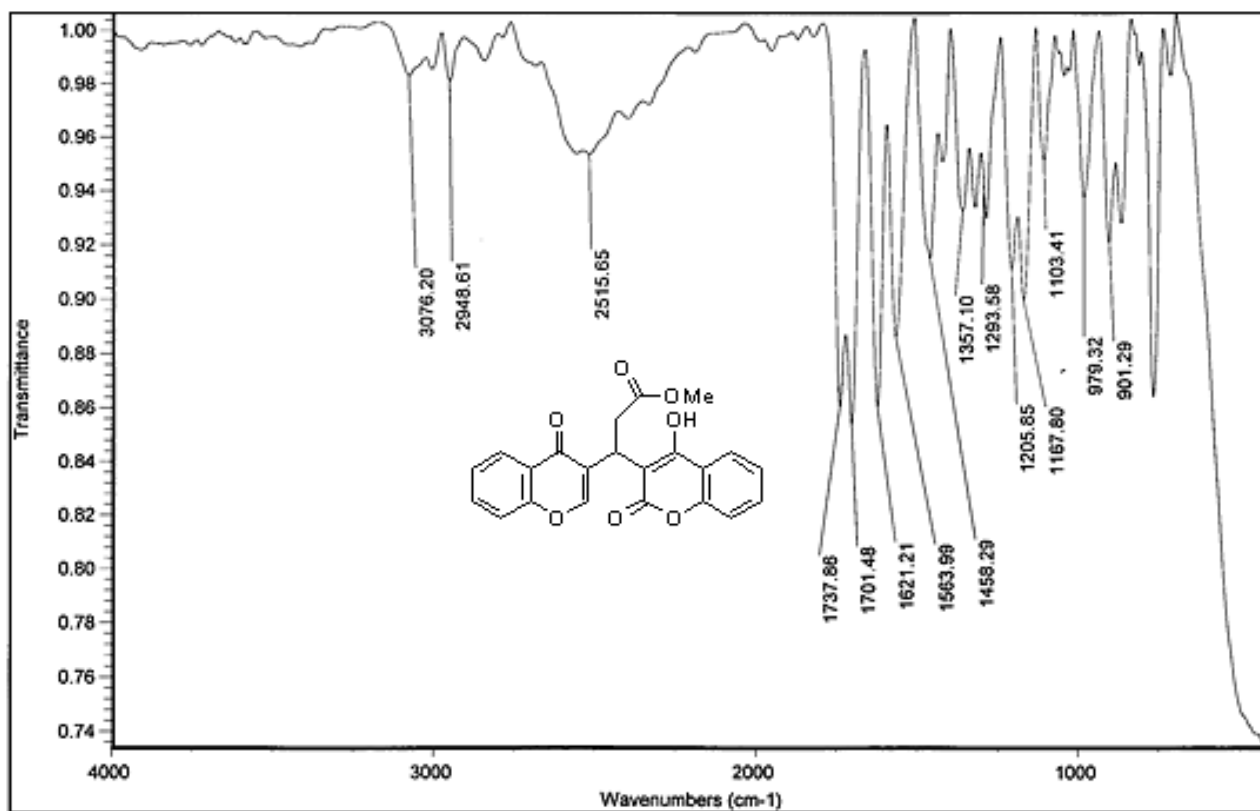
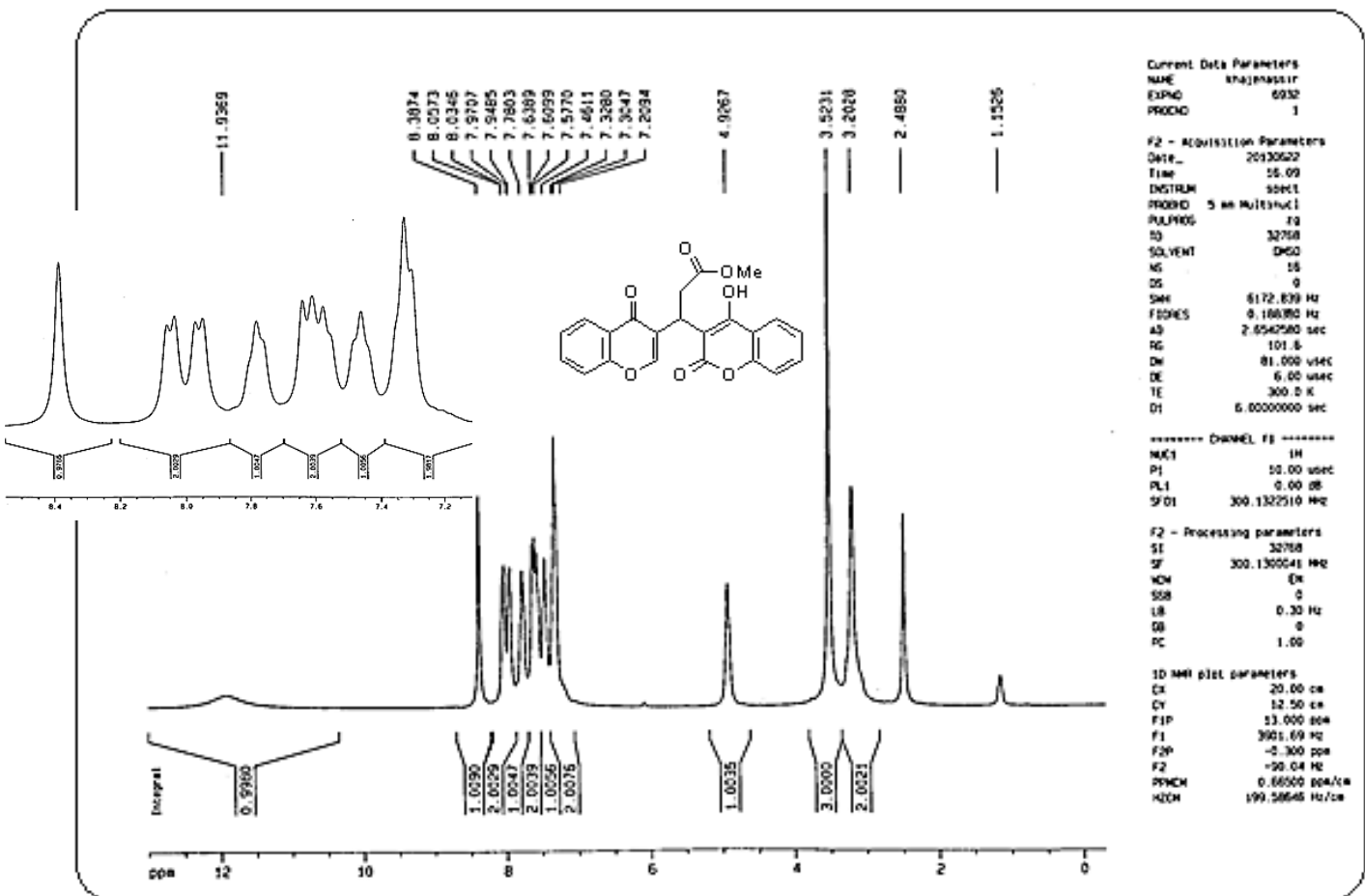


Methyl 3-(4-hydroxy-2-oxo-2H-chromen-3-yl)-3-(4-oxo-4H-chromen-3-yl)propanoate (5a)



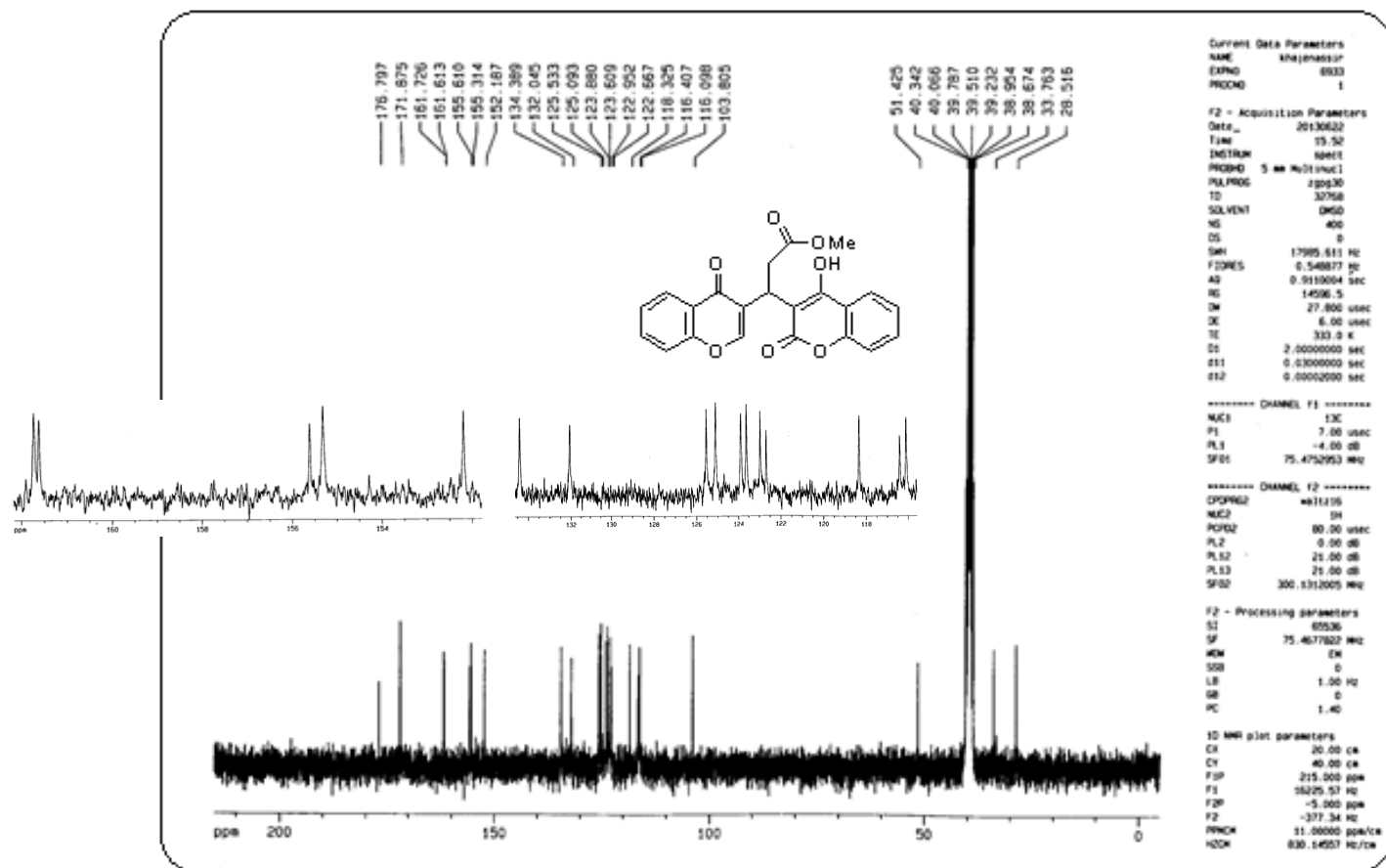
IR (KBr, cm<sup>-1</sup>)

Methyl 3-(4-hydroxy-2-oxo-2H-chromen-3-yl)-3-(4-oxo-4H-chromen-3-yl)propanoate (5a)



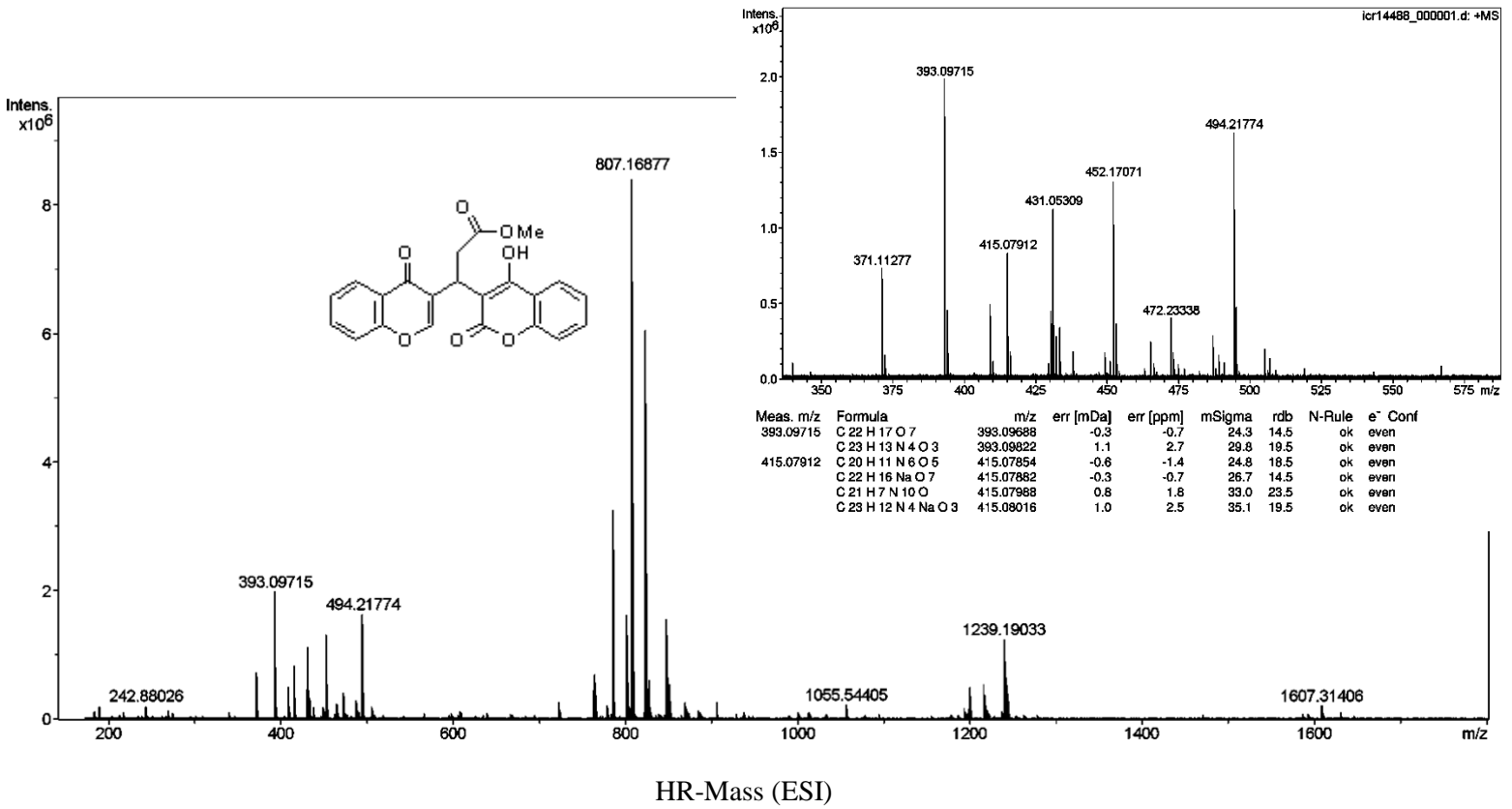
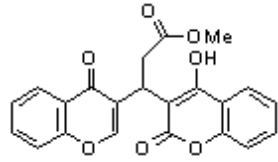
$^1\text{H}$  NMR (300 MHz,  $\text{DMSO}-d_6$ )

Methyl 3-(4-hydroxy-2-oxo-2H-chromen-3-yl)-3-(4-oxo-4H-chromen-3-yl)propanoate (5a)



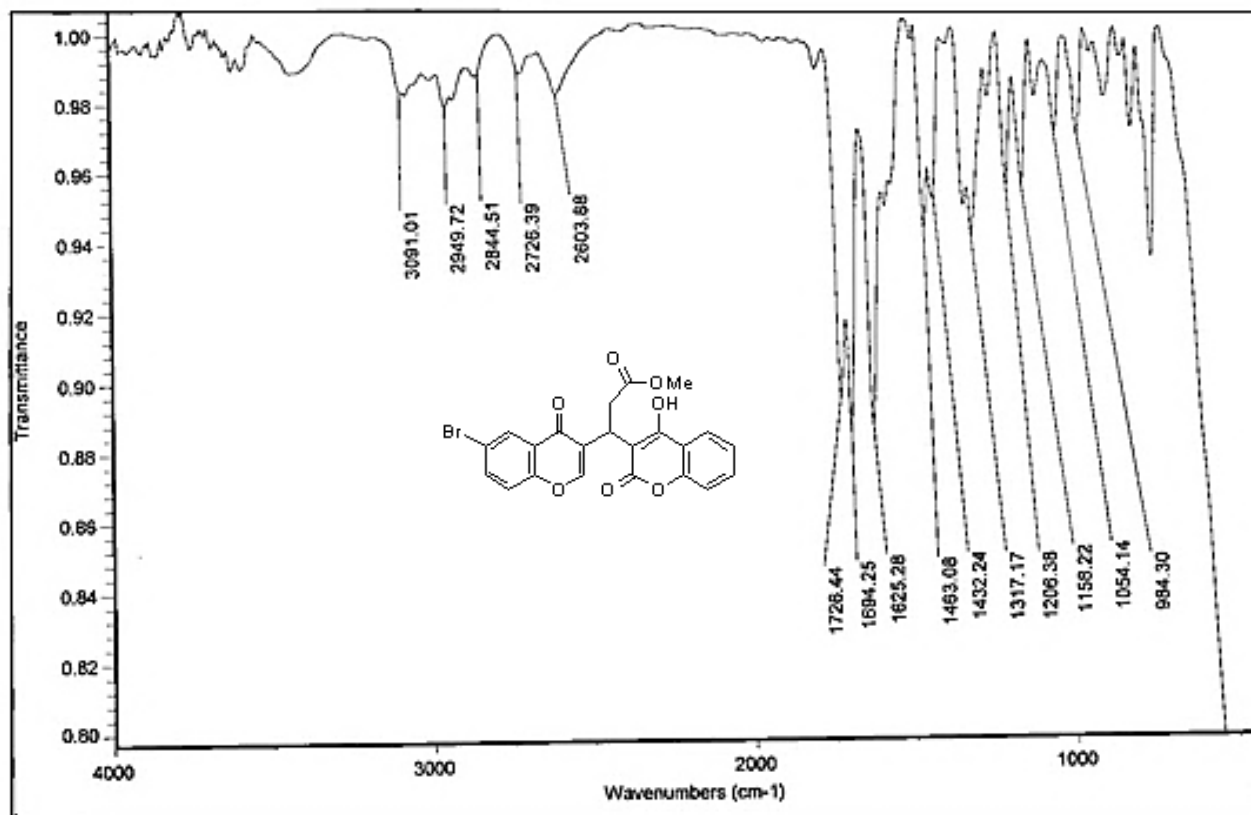
$^{13}\text{C}$  NMR (75 MHz,  $\text{DMSO-}d_6$ )

Methyl 3-(4-hydroxy-2-oxo-2H-chromen-3-yl)-3-(4-oxo-4H-chromen-3-yl)propanoate (5a)



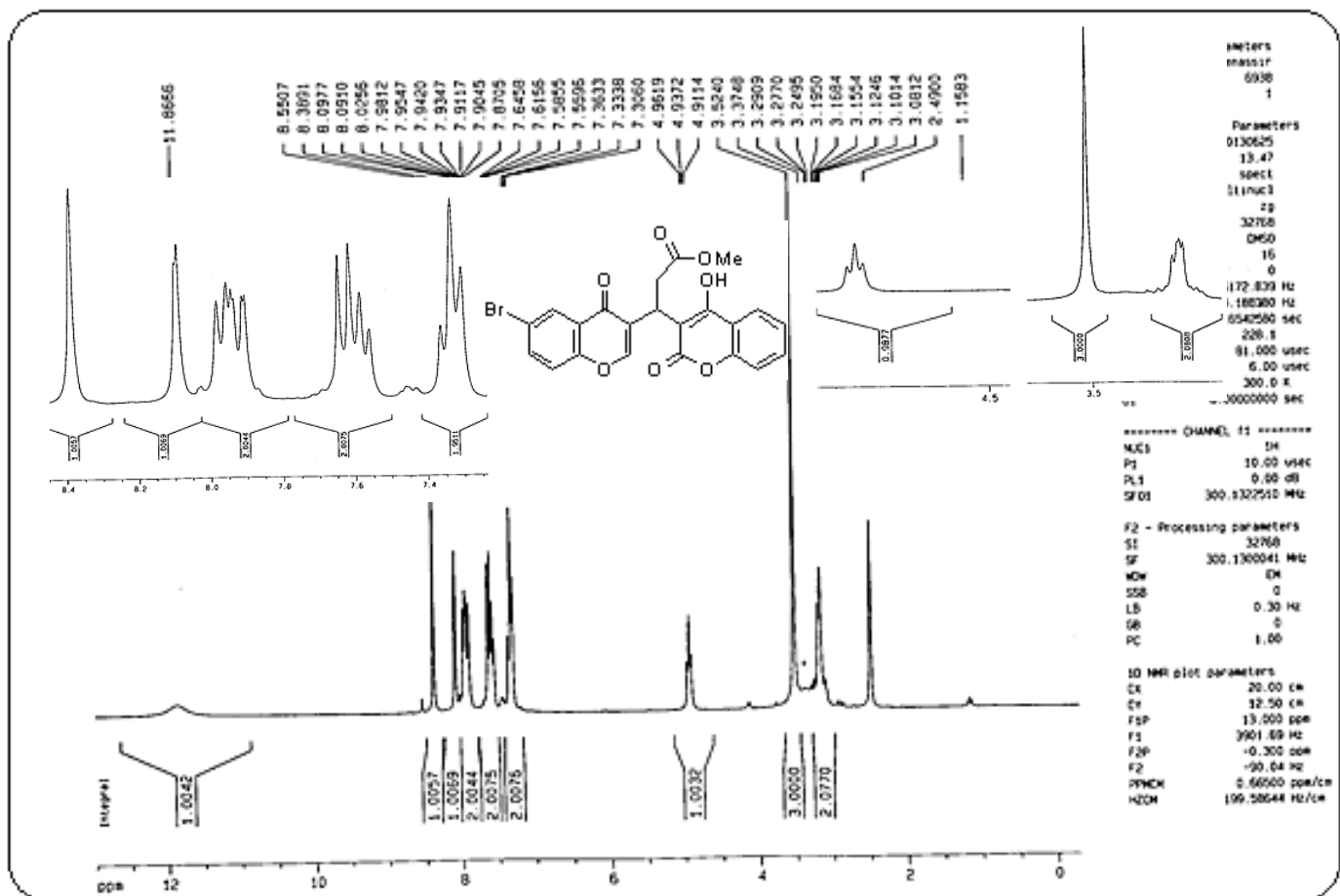
HR-Mass (ESI)

methyl 3-(6-bromo-4-oxo-4H-chromen-3-yl)-3-(4-hydroxy-2-oxo-2H-chromen-3-yl) propanoate (5b)



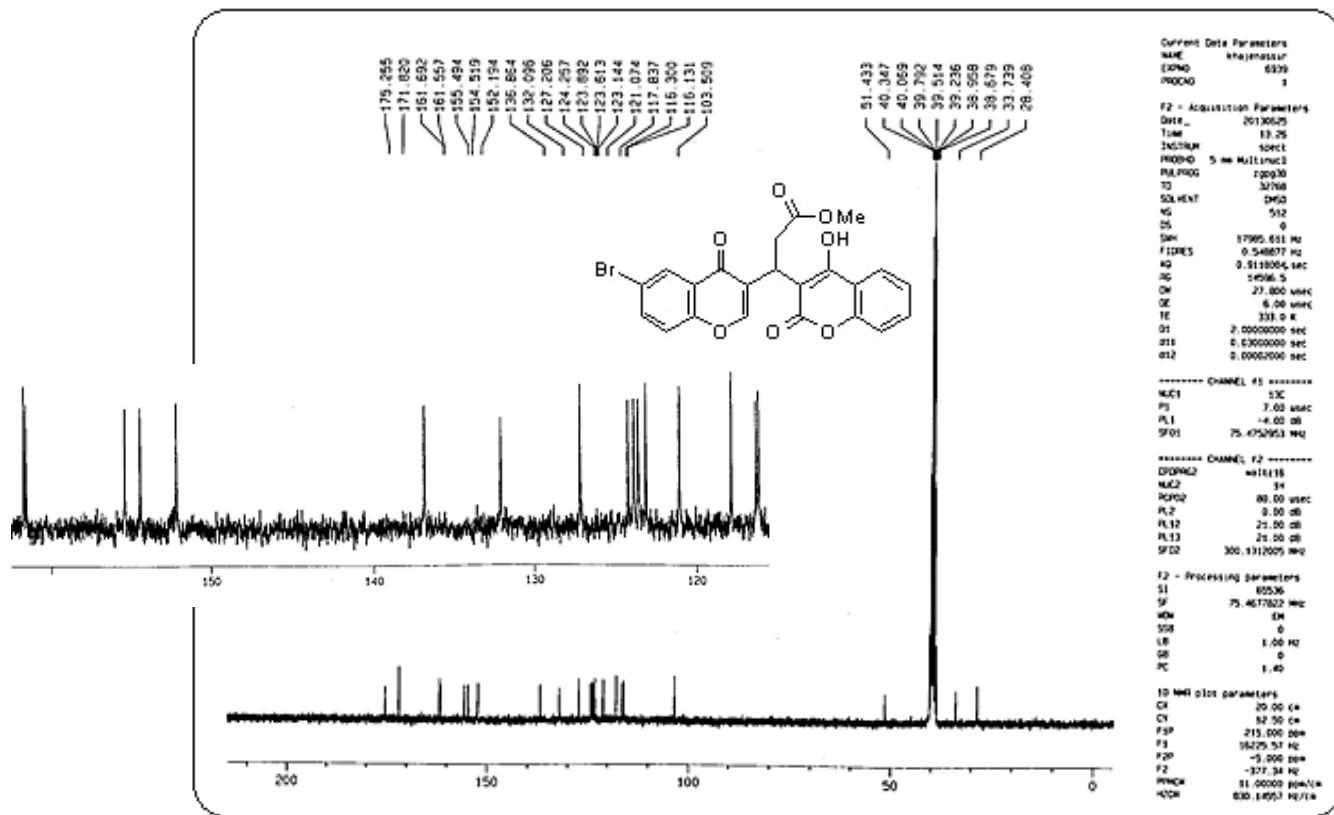
IR (KBr, cm<sup>-1</sup>)

methyl 3-(6-bromo-4-oxo-4H-chromen-3-yl)-3-(4-hydroxy-2-oxo-2H-chromen-3-yl)propanoate (5b)



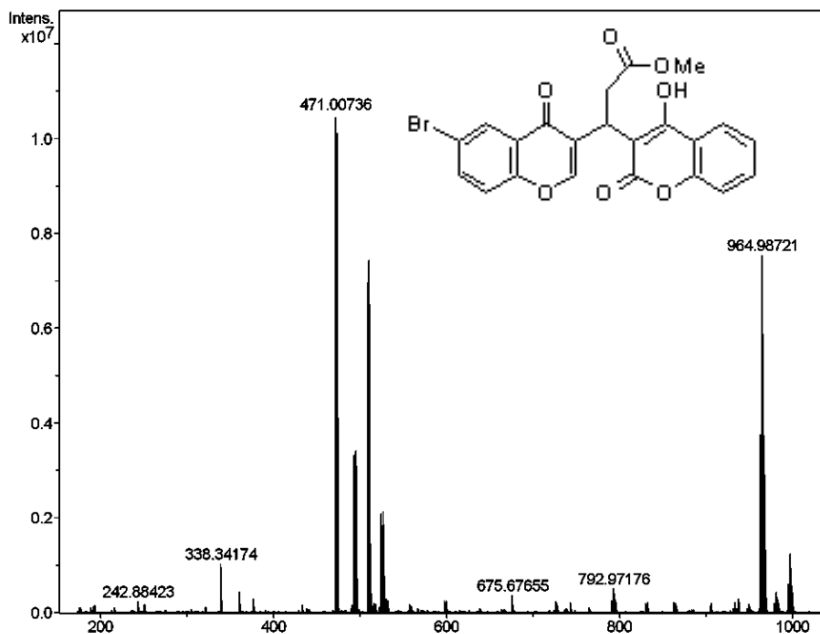
$^1\text{H}$  NMR (300 MHz,  $\text{DMSO}-d_6$ )

methyl 3-(6-bromo-4-oxo-4H-chromen-3-yl)-3-(4-hydroxy-2-oxo-2H-chromen-3-yl) propanoate (5b)

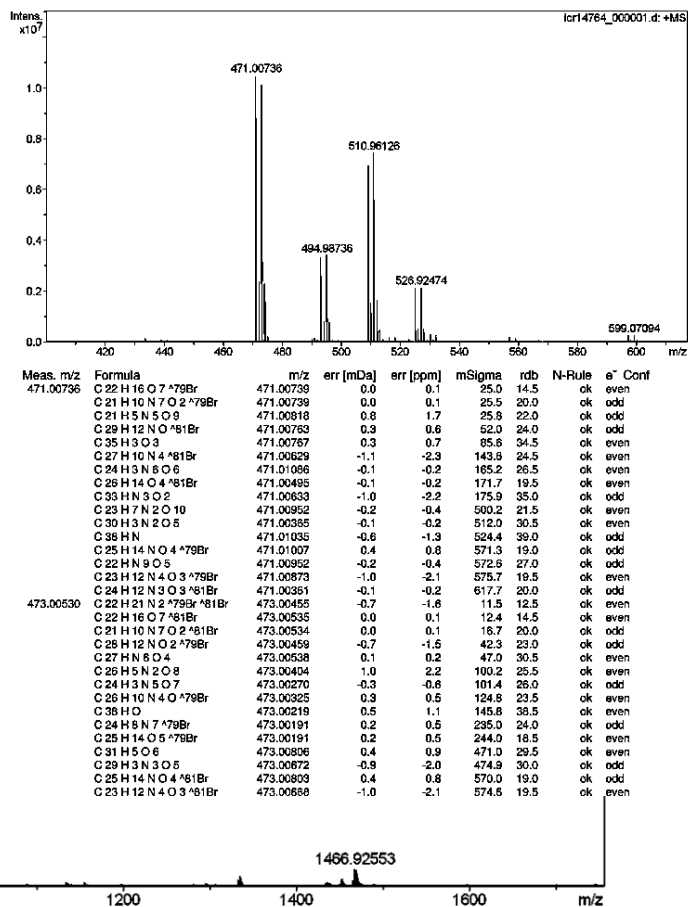


<sup>13</sup>C NMR (75 MHz, DMSO-d<sub>6</sub>)

methyl 3-(6-bromo-4-oxo-4H-chromen-3-yl)-3-(4-hydroxy-2-oxo-2H-chromen-3-yl) propanoate (5b)

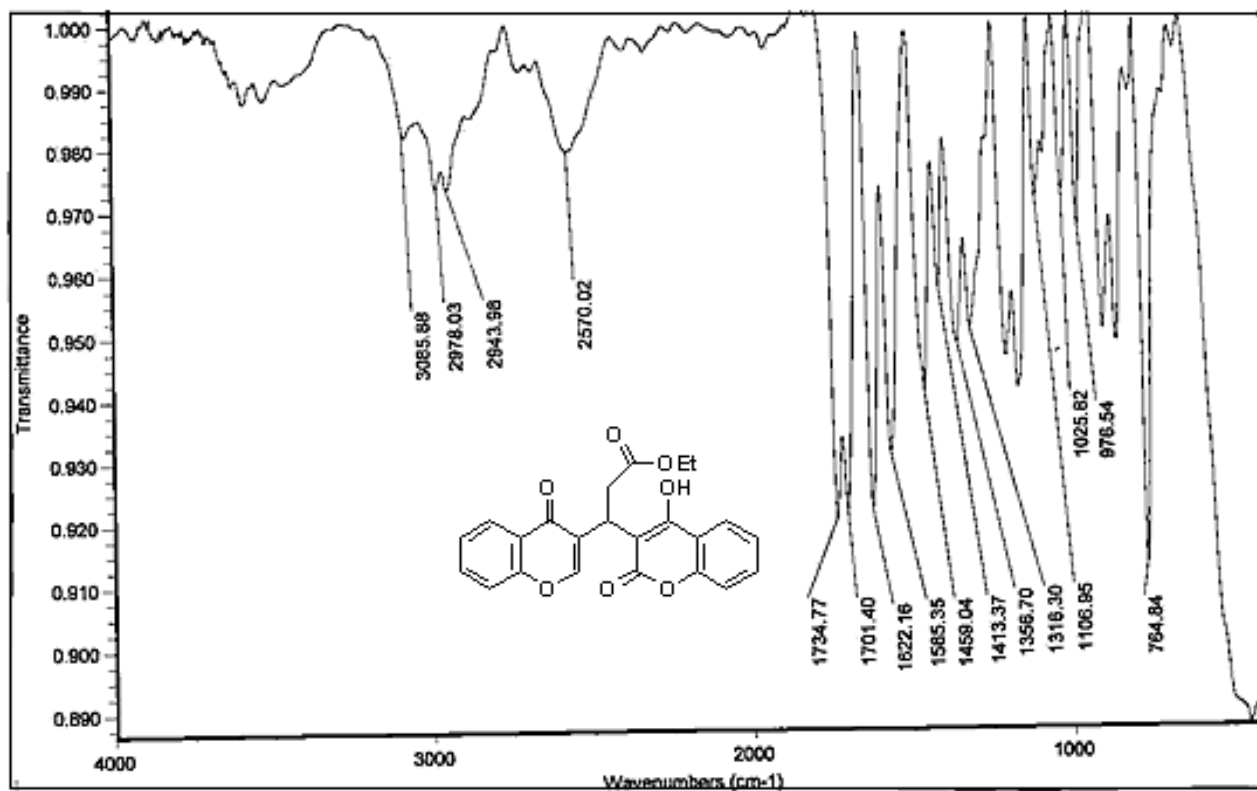


HR-Mass (ESI)



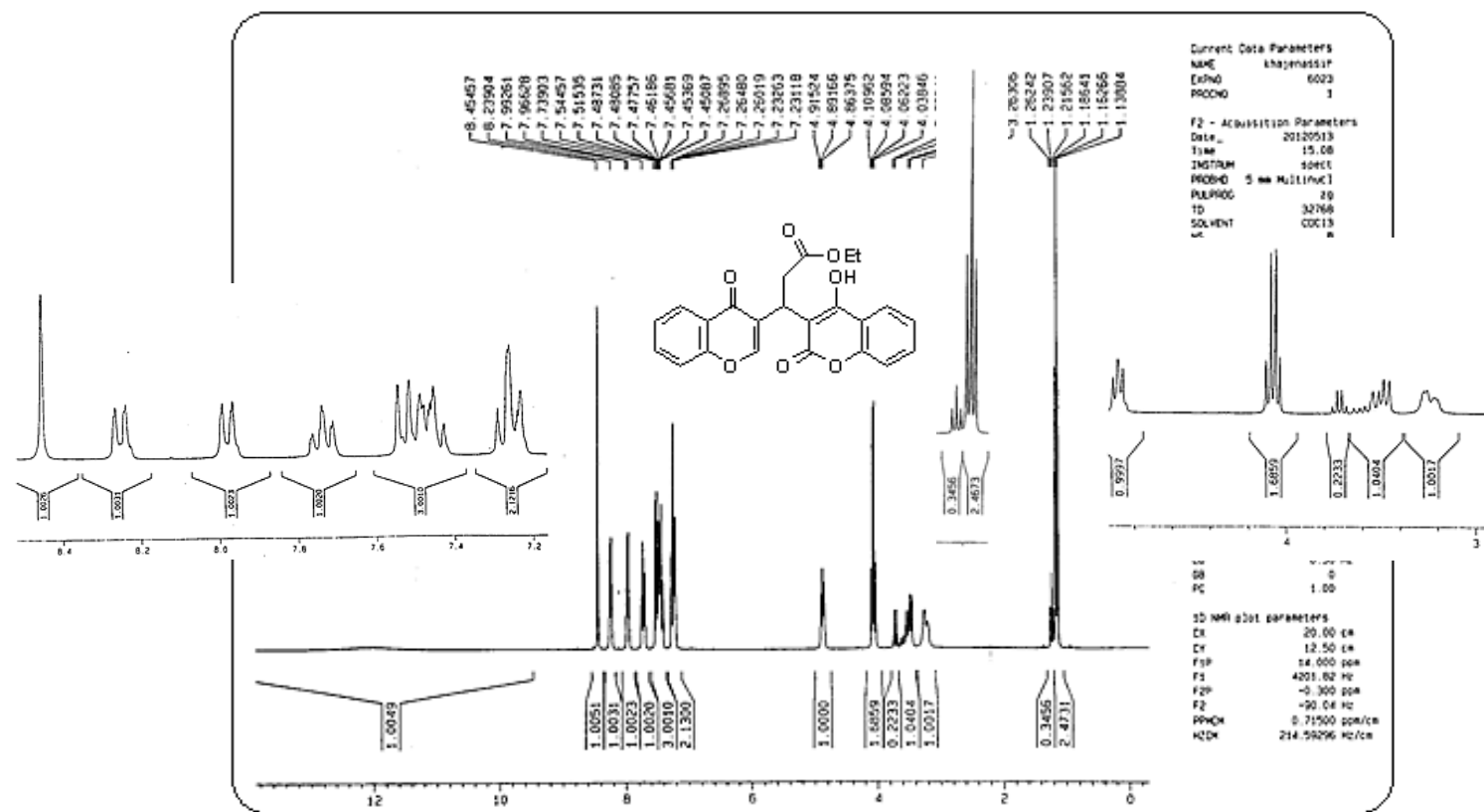


ethyl 3-(4-hydroxy-2-oxo-2H-chromen-3-yl)-3-(4-oxo-4H-chromen-3-yl) propanoate (5c)



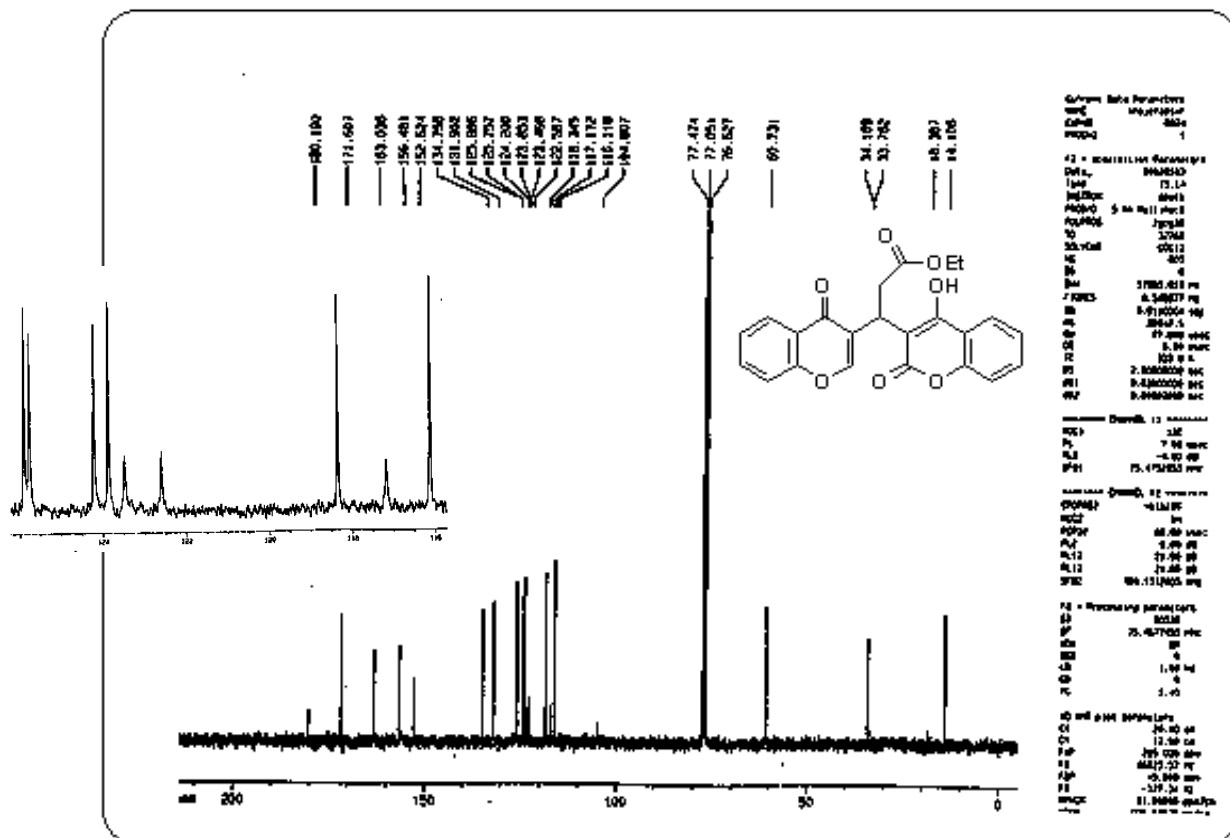
IR (KBr, cm<sup>-1</sup>)

ethyl 3-(4-hydroxy-2-oxo-2H-chromen-3-yl)-3-(4-oxo-4H-chromen-3-yl)propanoate (5c)

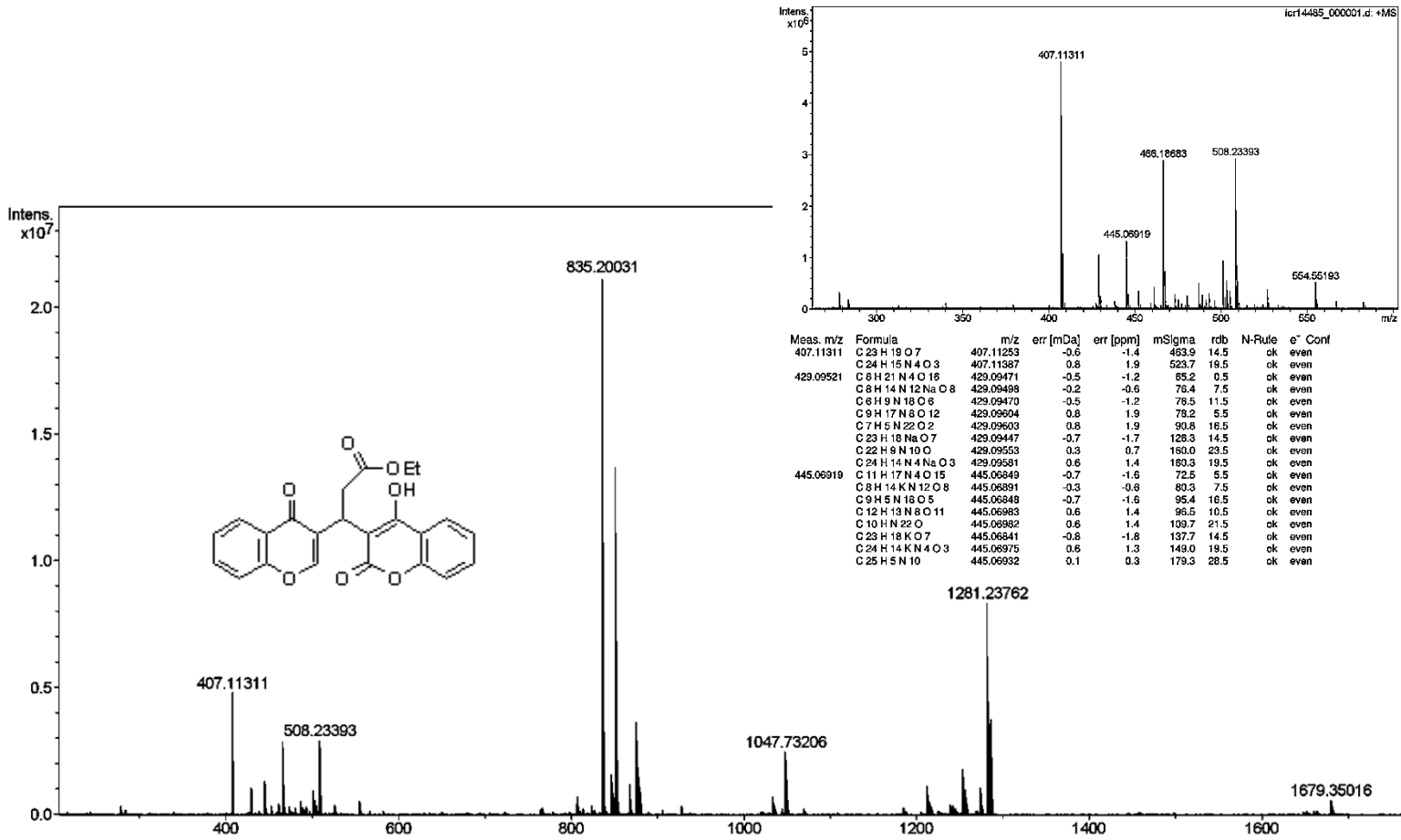


$^1\text{H}$  NMR (300 MHz,  $\text{DMSO}-d_6$ )

ethyl 3-(4-hydroxy-2-oxo-2H-chromen-3-yl)-3-(4-oxo-4H-chromen-3-yl)propanoate (5c)

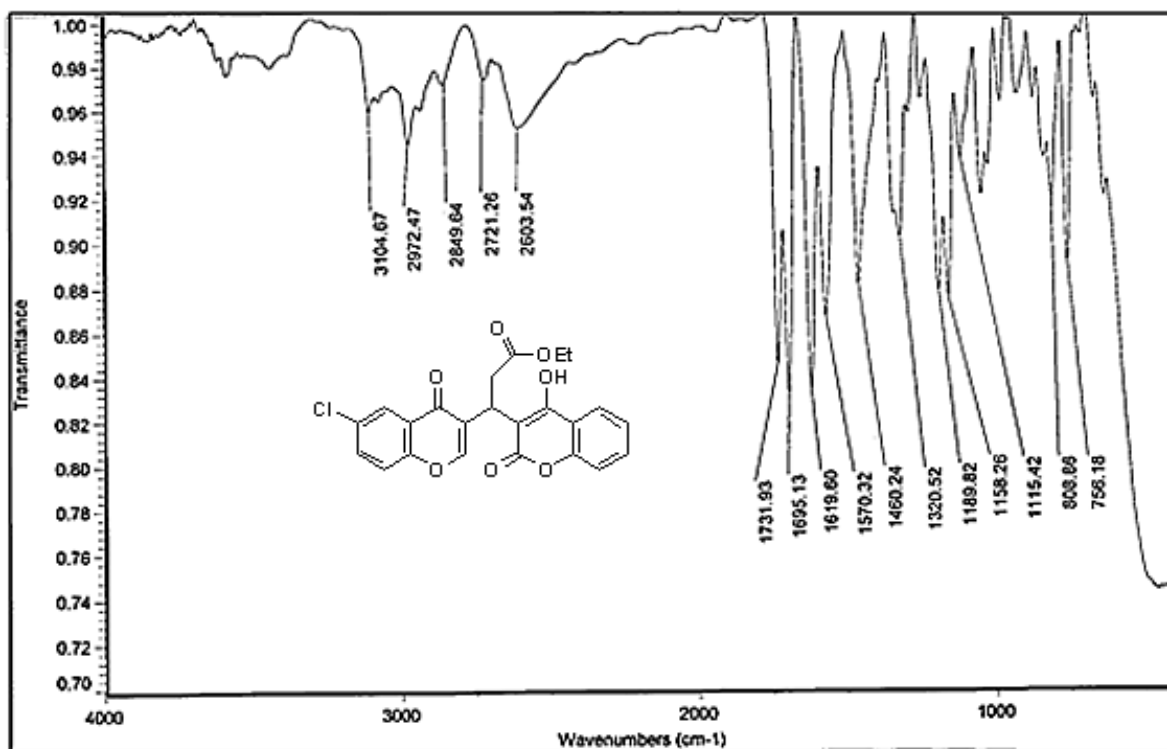


ethyl 3-(4-hydroxy-2-oxo-2H-chromen-3-yl)-3-(4-oxo-4H-chromen-3-yl)propanoate (5c)



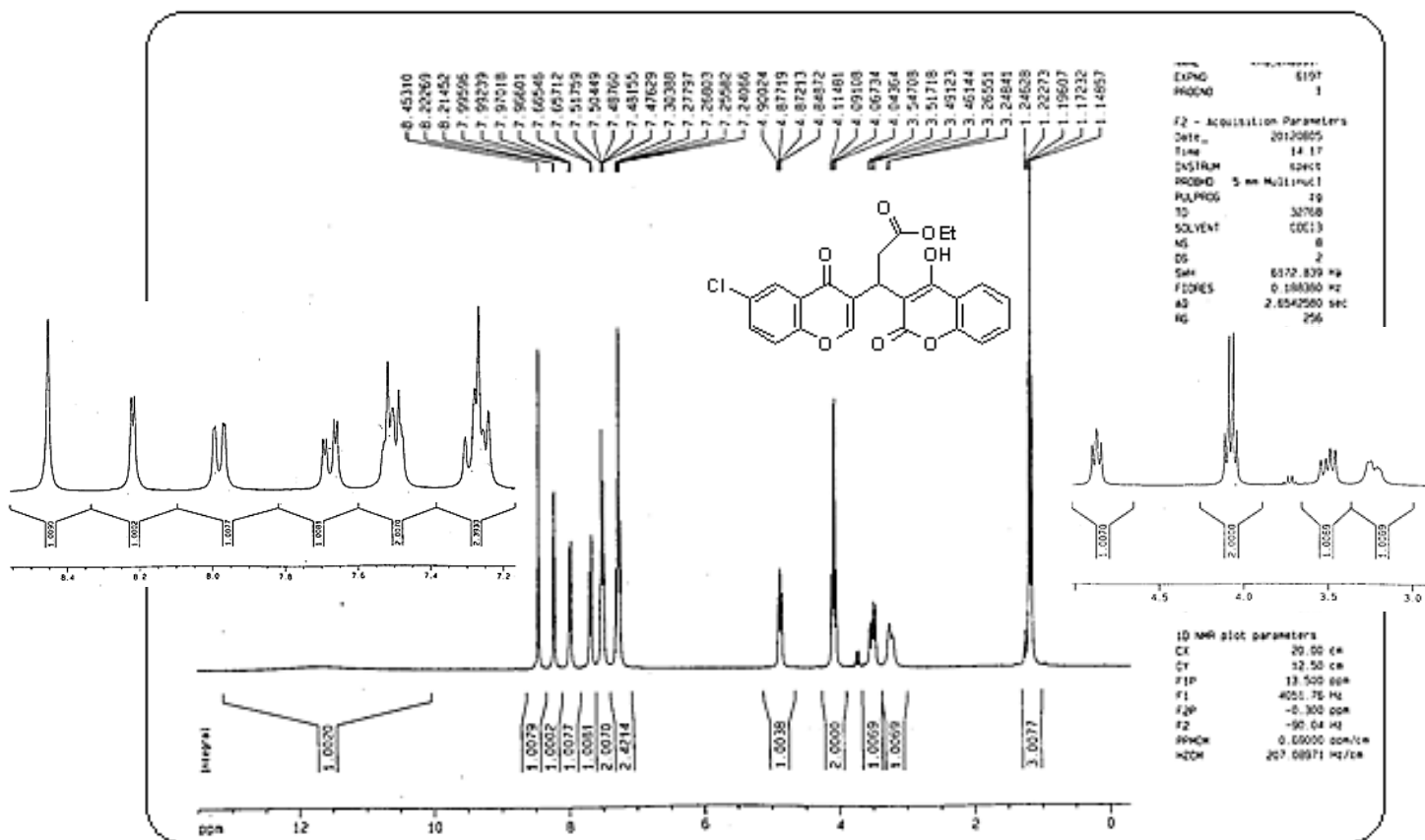
HR-Mass (ESI)

ethyl 3-(6-chloro-4-oxo-4H-chromen-3-yl)-3-(4-hydroxy-2-oxo-2H-chromen-3-yl)propanoate (5d)



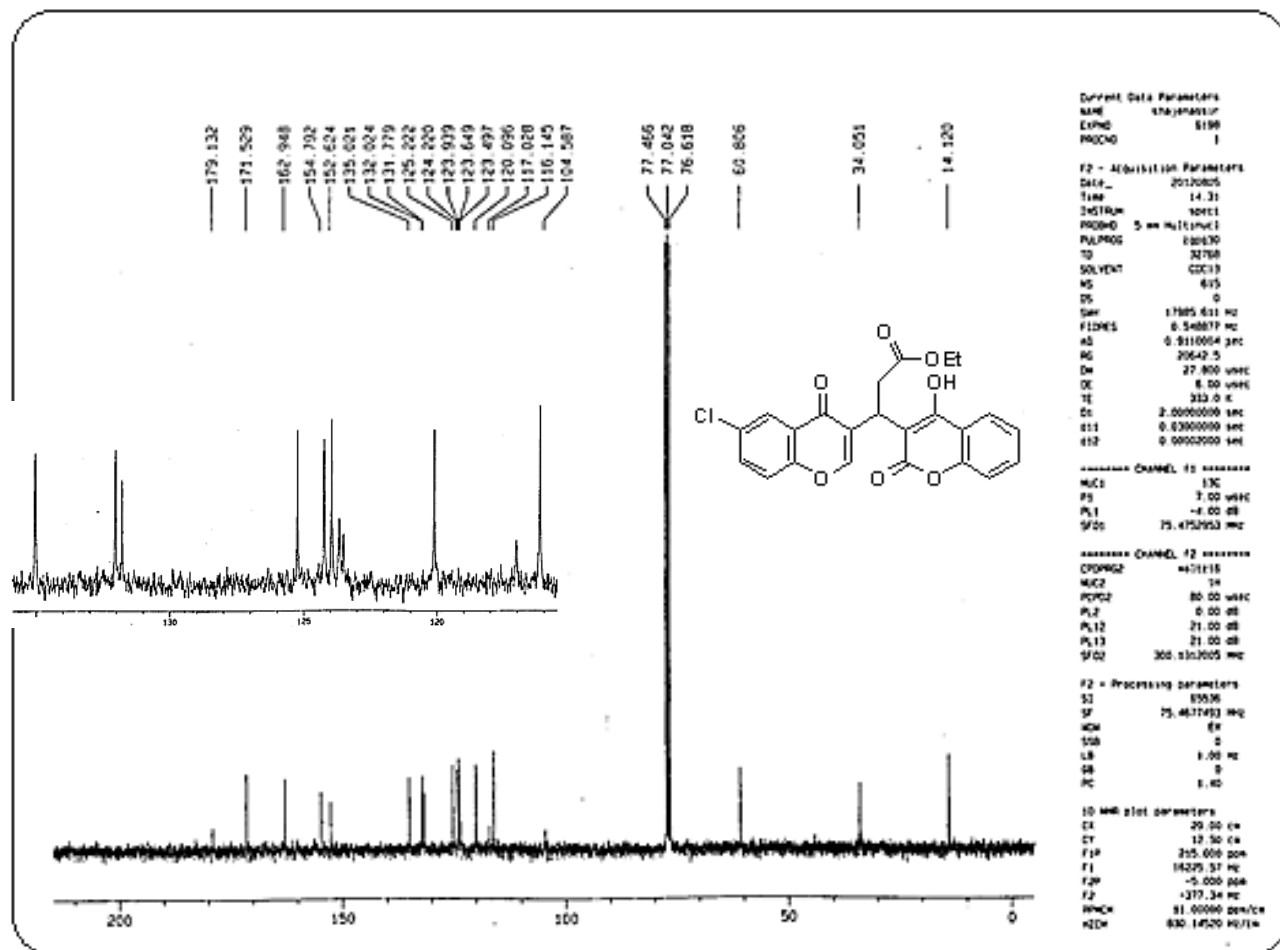
IR (KBr, cm<sup>-1</sup>)

ethyl 3-(6-chloro-4-oxo-4H-chromen-3-yl)-3-(4-hydroxy-2-oxo-2H-chromen-3-yl)propanoate (5d)



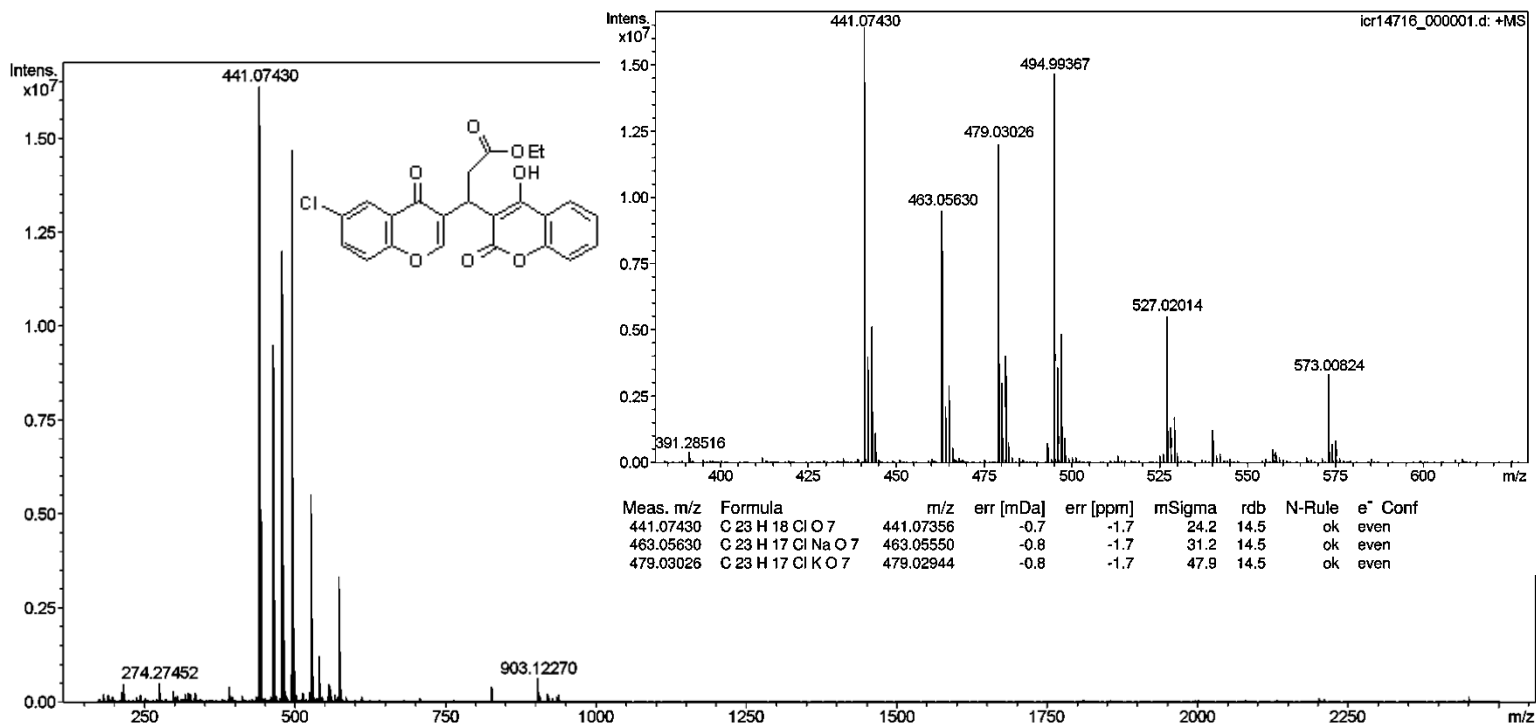
<sup>1</sup>H NMR (300 MHz, DMSO-d<sub>6</sub>)

ethyl 3-(6-chloro-4-oxo-4H-chromen-3-yl)-3-(4-hydroxy-2-oxo-2H-chromen-3-yl)propanoate (5d)



$^{13}\text{C}$  NMR (75 MHz, DMSO- $d_6$ )

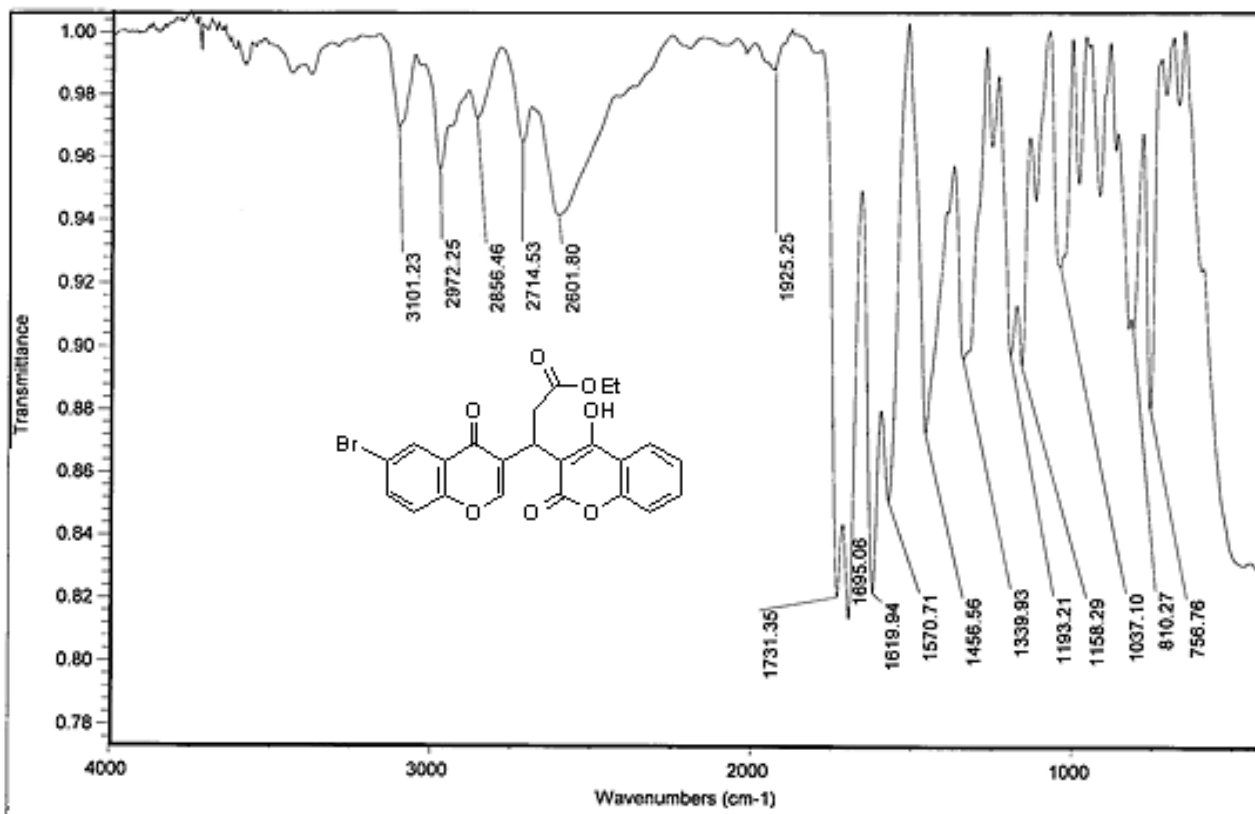
ethyl 3-(6-chloro-4-oxo-4H-chromen-3-yl)-3-(4-hydroxy-2-oxo-2H-chromen-3-yl)propanoate (5d)



HR-Mass (ESI)

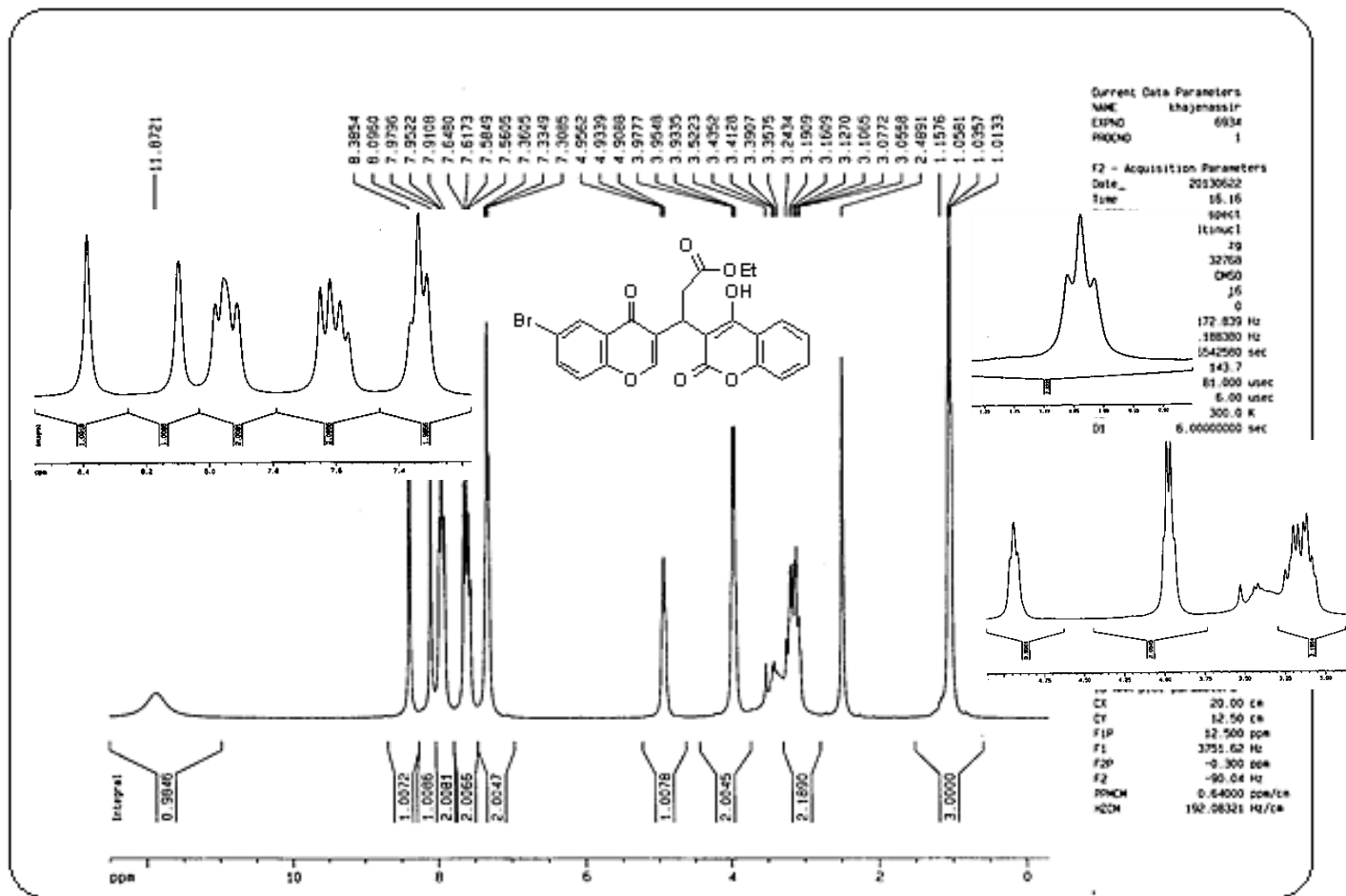


ethyl 3-(6-bromo-4-oxo-4H-chromen-3-yl)-3-(4-hydroxy-2-oxo-2H-chromen-3-yl)propanoate (5e)



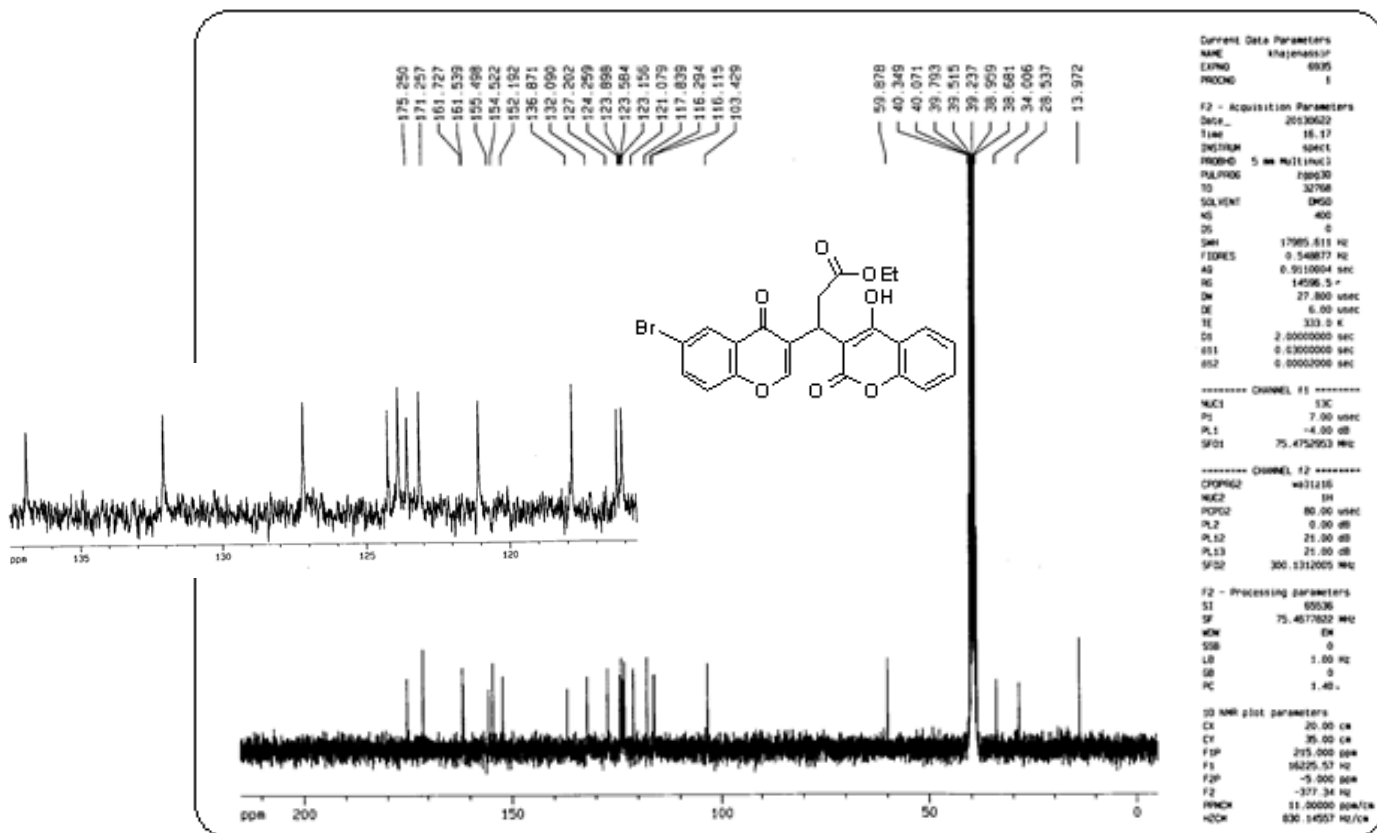
IR (KBr, cm<sup>-1</sup>)

ethyl 3-(6-bromo-4-oxo-4H-chromen-3-yl)-3-(4-hydroxy-2-oxo-2H-chromen-3-yl)propanoate (5e)



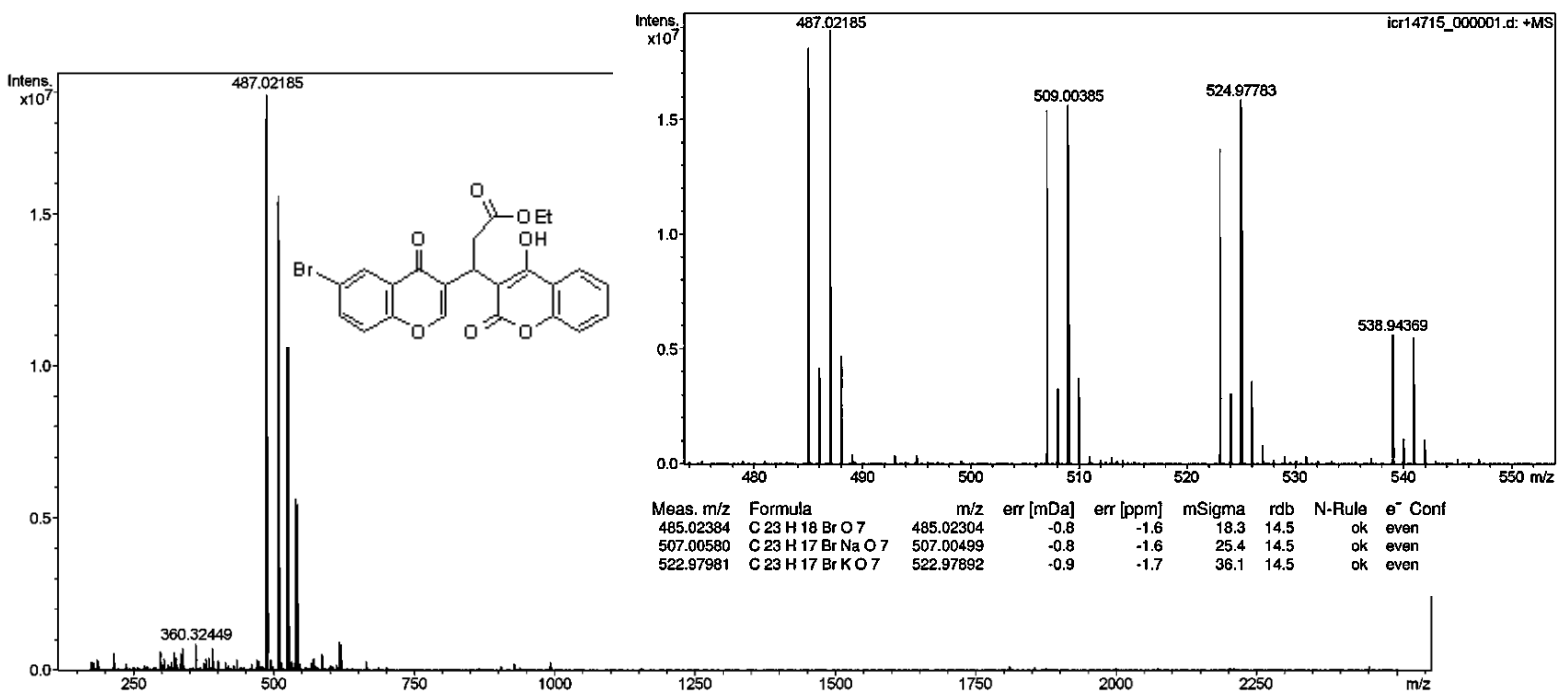
<sup>1</sup>H NMR (300 MHz, DMSO-d<sub>6</sub>)

ethyl 3-(6-bromo-4-oxo-4H-chromen-3-yl)-3-(4-hydroxy-2-oxo-2H-chromen-3-yl)propanoate (5e)



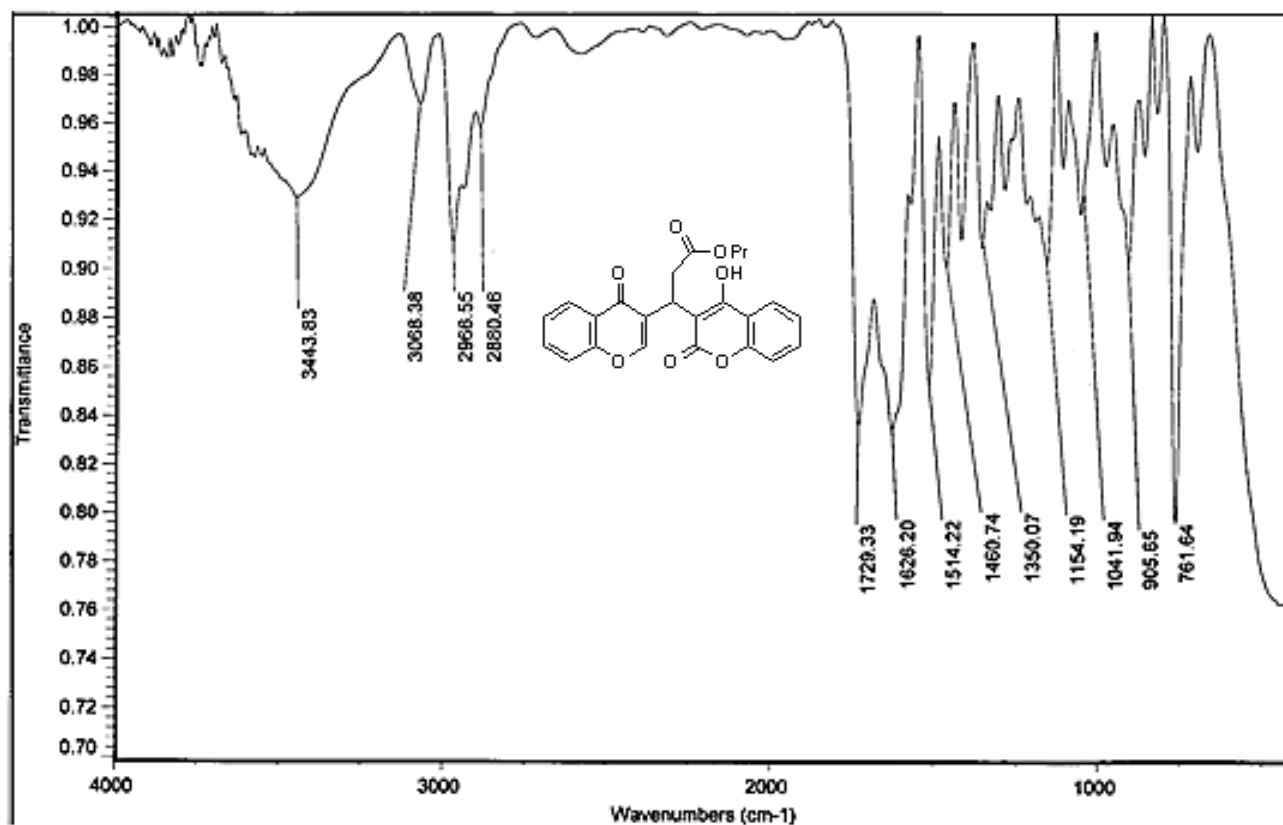
<sup>13</sup>C NMR (75 MHz, DMSO-d<sub>6</sub>)

ethyl 3-(6-bromo-4-oxo-4H-chromen-3-yl)-3-(4-hydroxy-2-oxo-2H-chromen-3-yl)propanoate (5e)



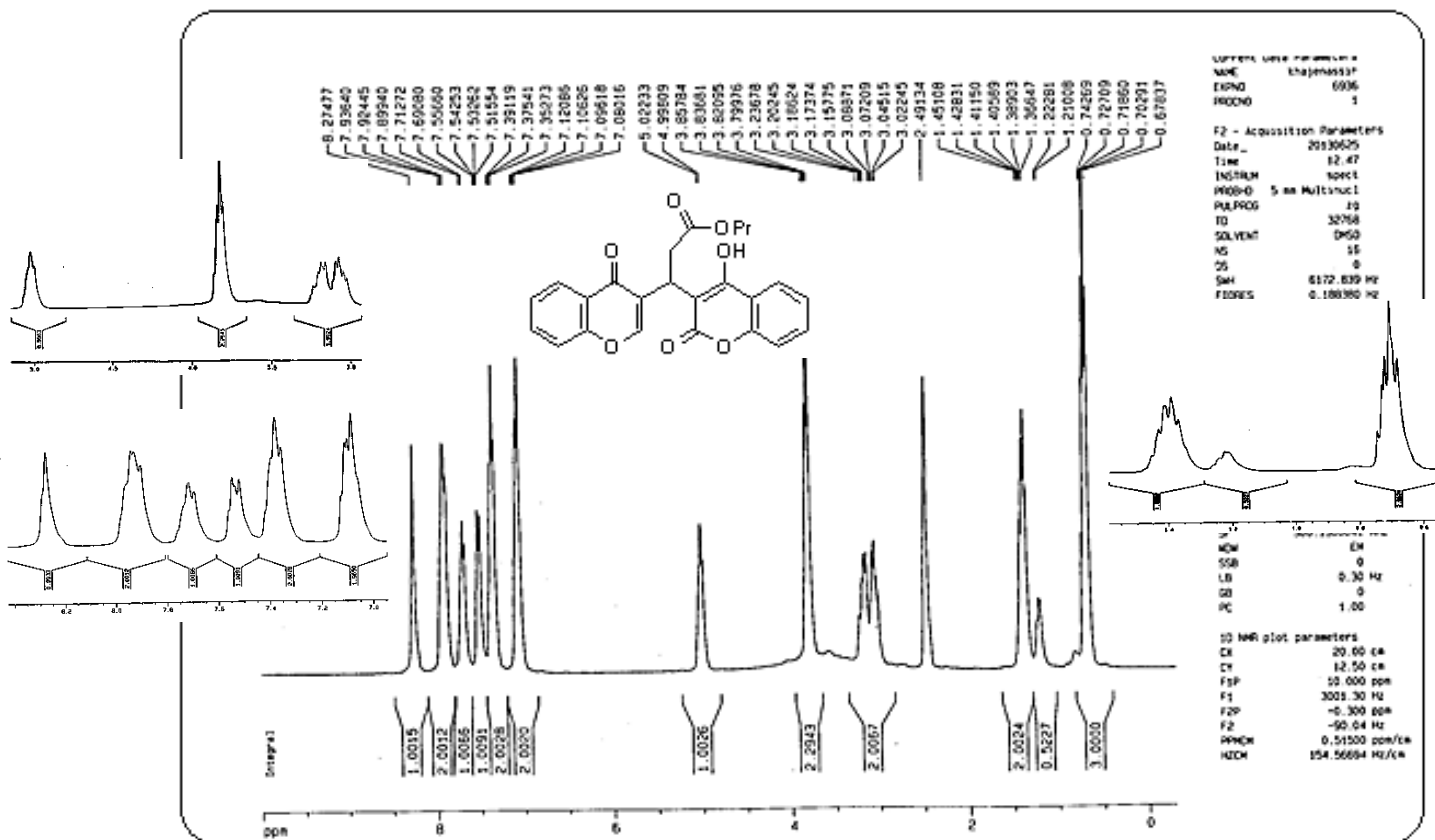
HR-Mass (ESI)

propyl 3-(4-hydroxy-2-oxo-2H-chromen-3-yl)-3-(4-oxo-4H-chromen-3-yl)propanoate (5f)



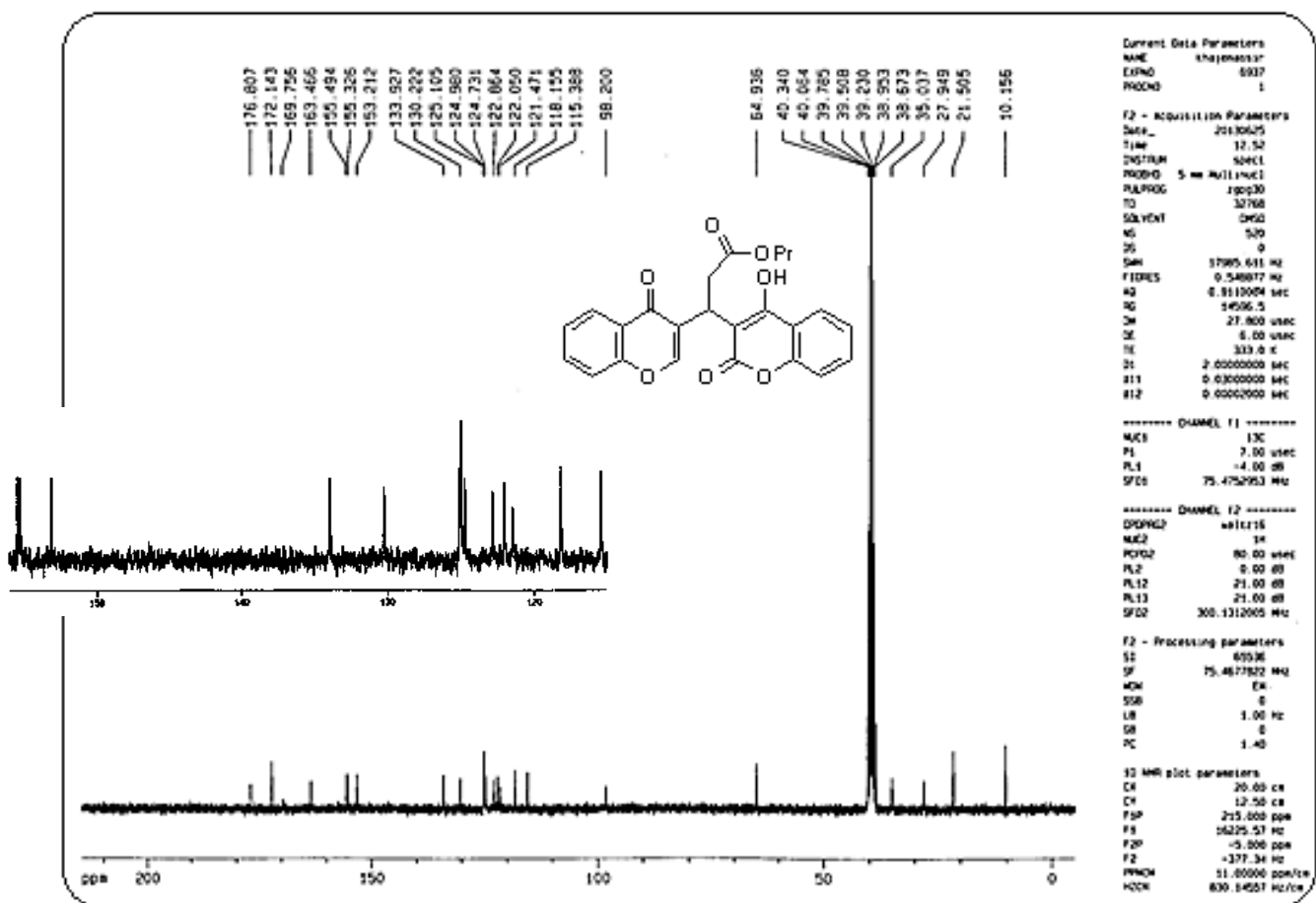
IR (KBr, cm<sup>-1</sup>)

propyl 3-(4-hydroxy-2-oxo-2H-chromen-3-yl)-3-(4-oxo-4H-chromen-3-yl)propanoate (5f)



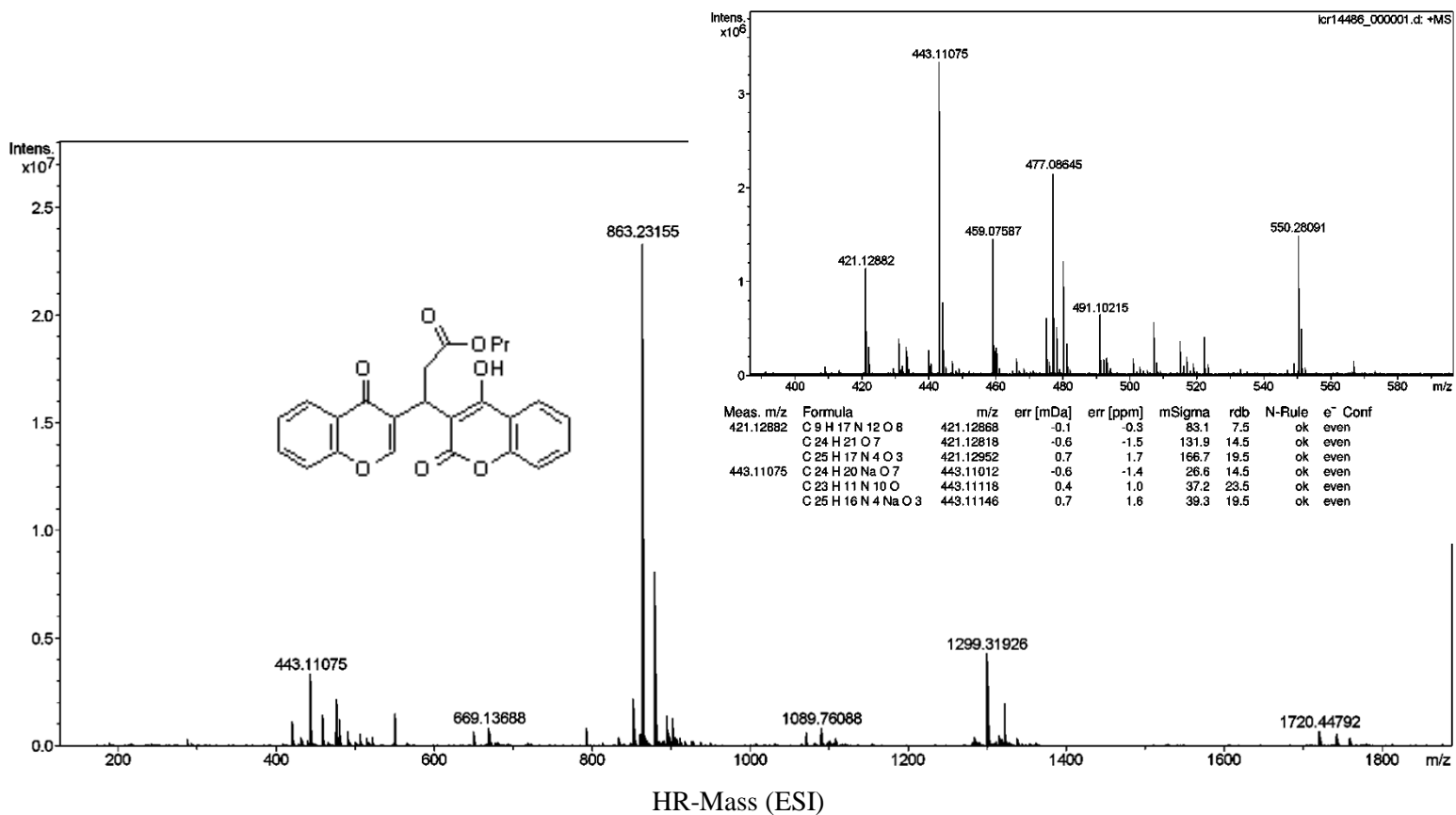
$^1\text{H}$  NMR (300 MHz,  $\text{DMSO}-d_6$ )

propyl 3-(4-hydroxy-2-oxo-2H-chromen-3-yl)-3-(4-oxo-4H-chromen-3-yl)propanoate (5f)



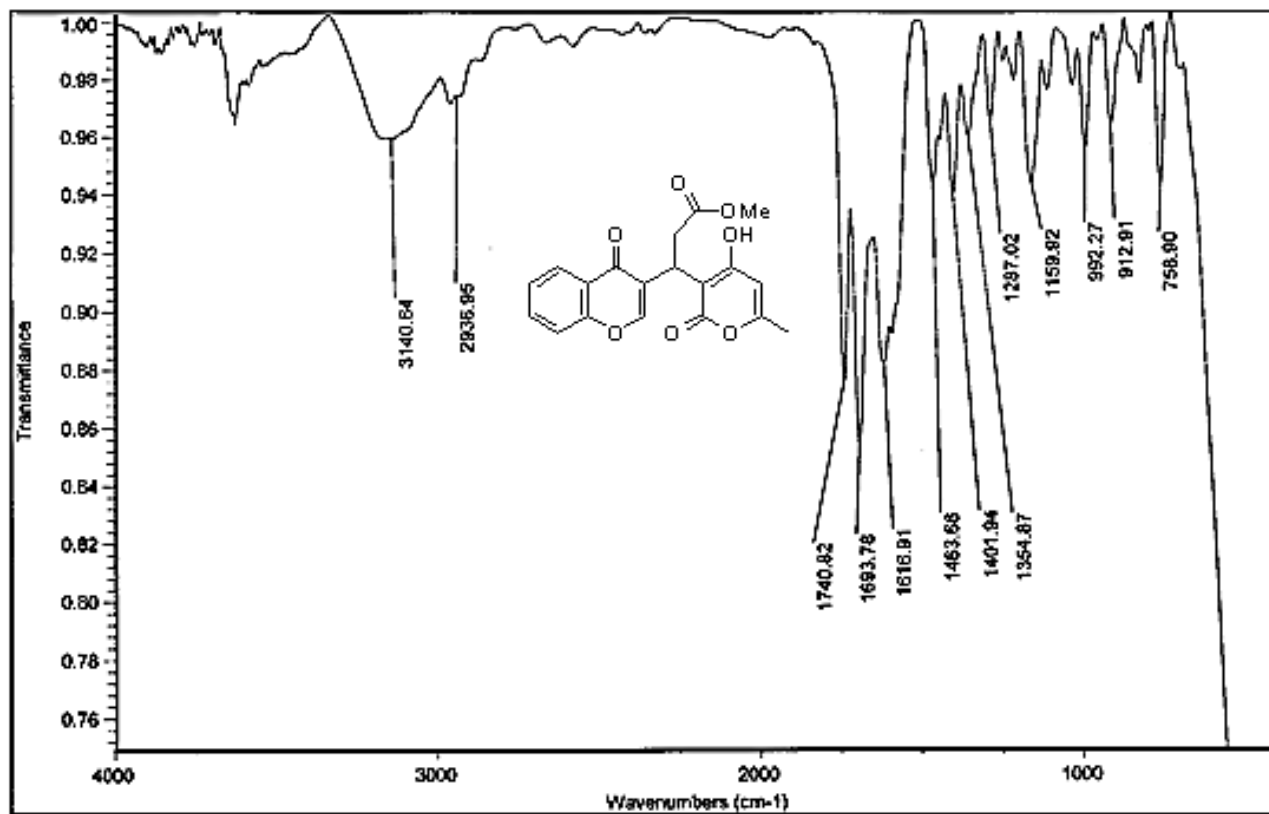
$^{13}\text{C}$  NMR (75 MHz, DMSO- $d_6$ )

propyl 3-(4-hydroxy-2-oxo-2H-chromen-3-yl)-3-(4-oxo-4H-chromen-3-yl)propanoate (5f)



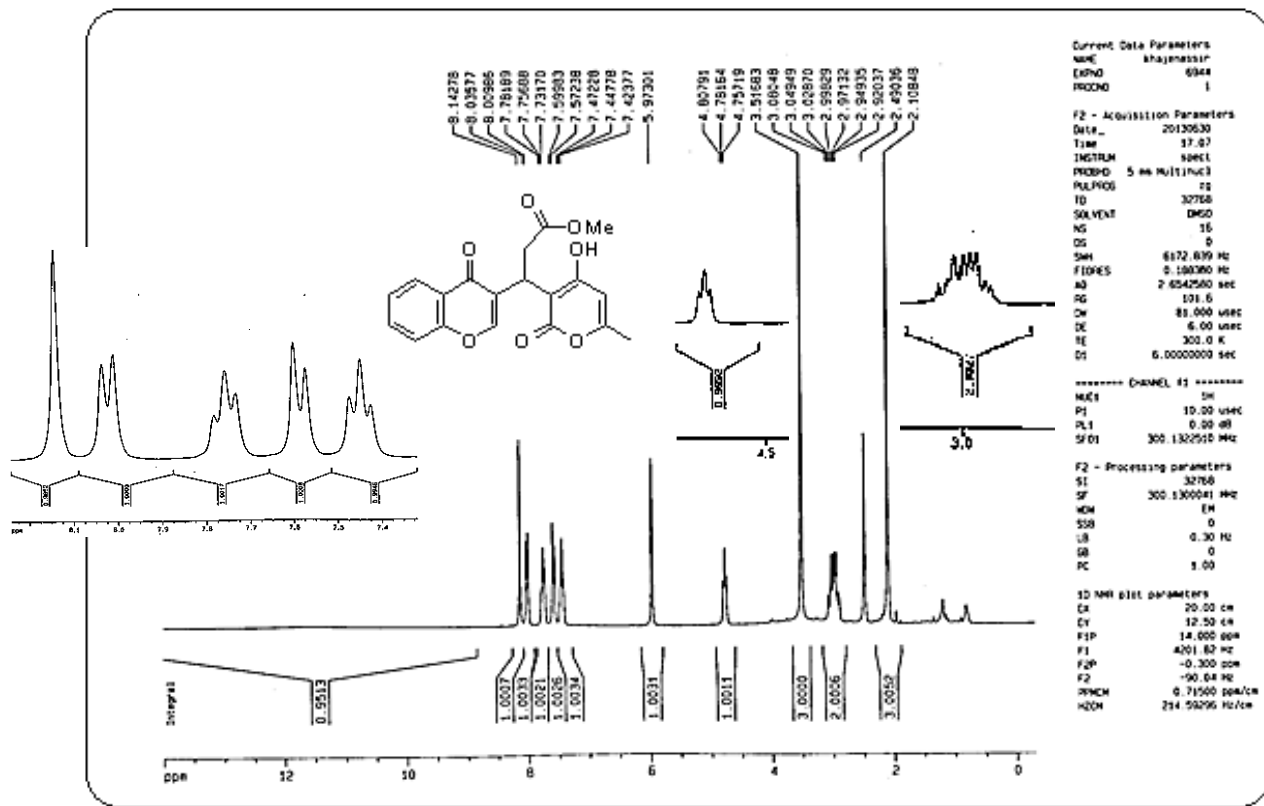


methyl 3-(4-hydroxy-6-methyl-2-oxo-2H-pyran-3-yl)-3-(4-oxo-4H-chromen-3-yl)propanoate (5g)



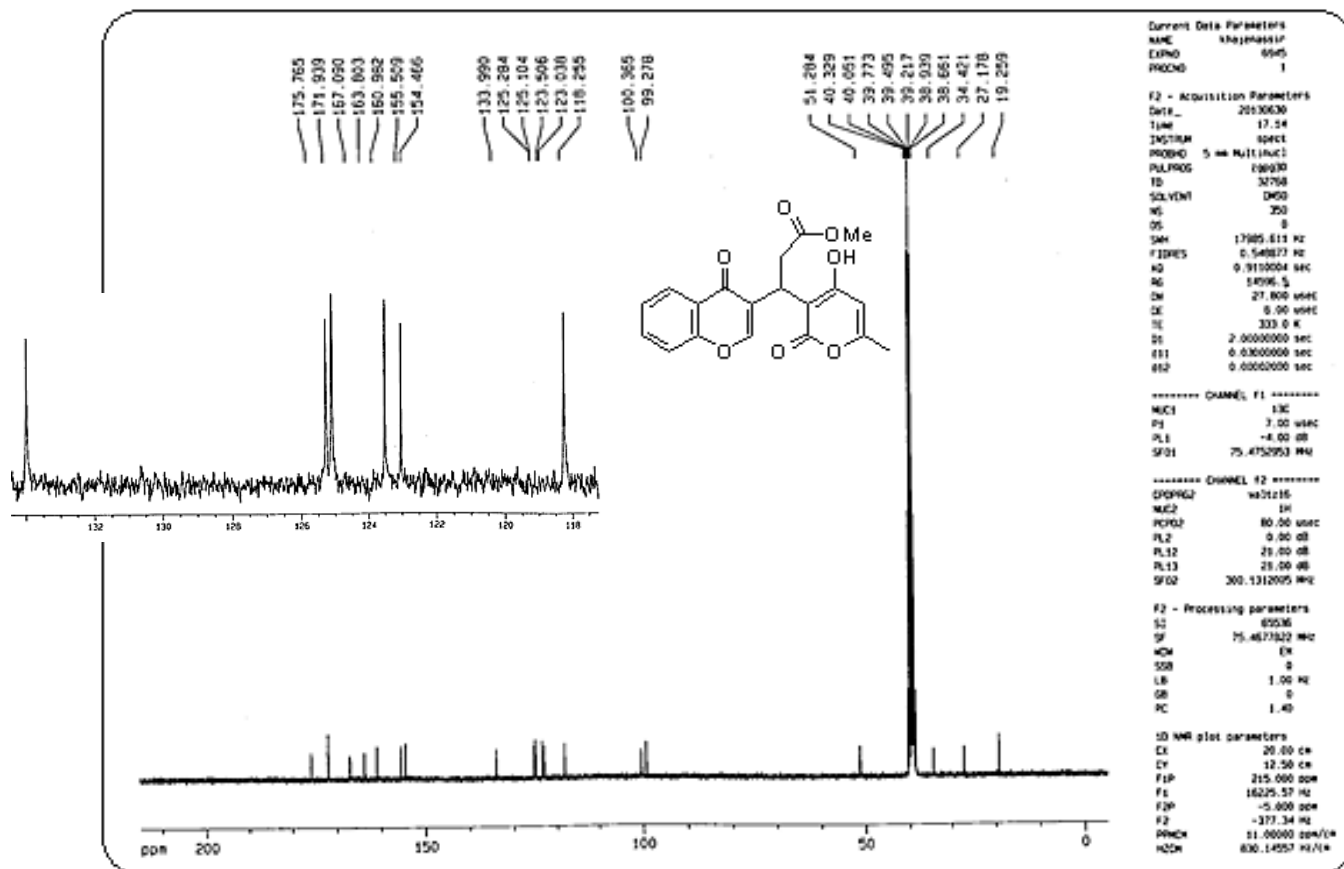
IR (KBr, cm<sup>-1</sup>)

methyl 3-(4-hydroxy-6-methyl-2-oxo-2H-pyran-3-yl)-3-(4-oxo-4H-chromen-3-yl)propanoate (5g)



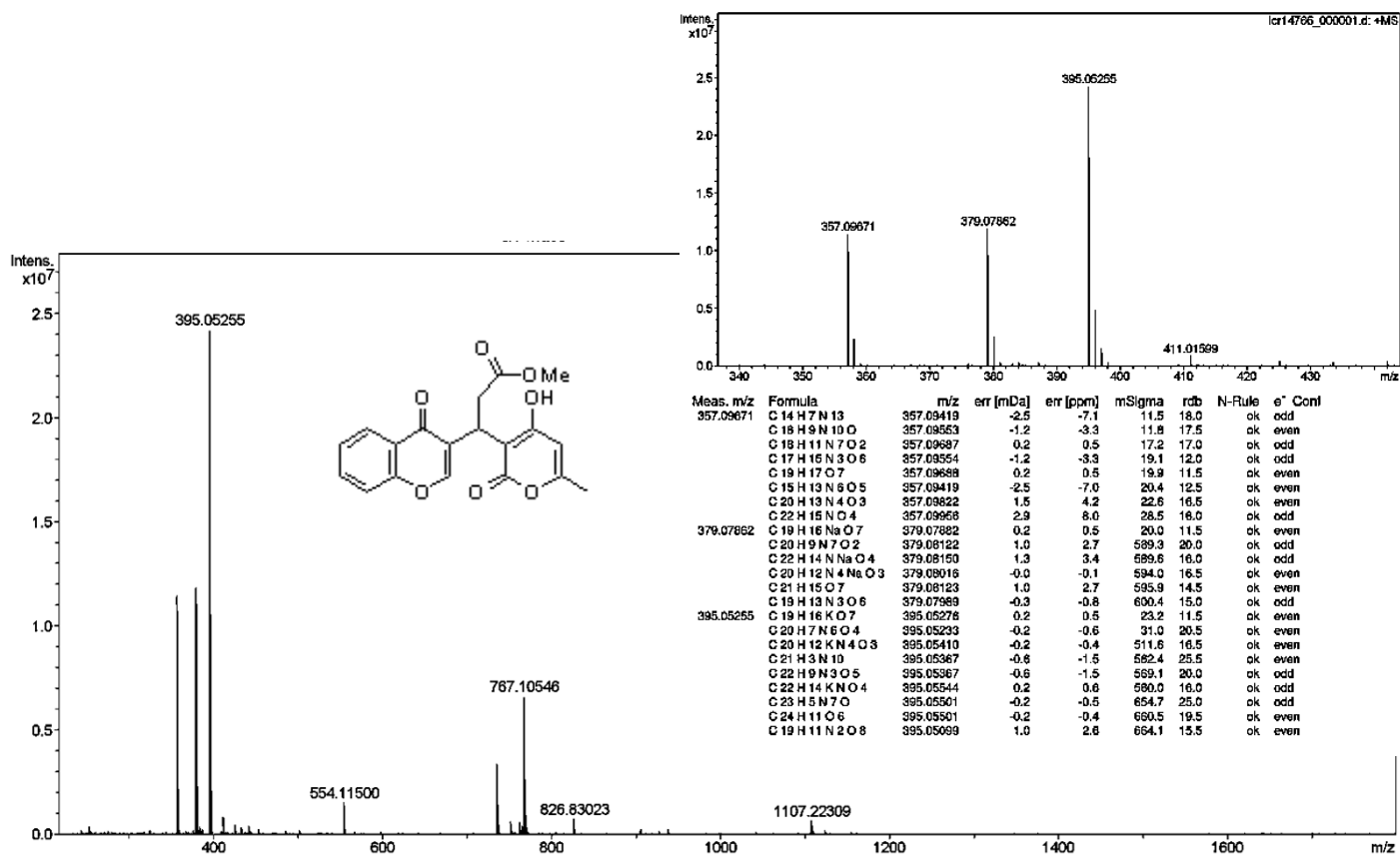
$^1\text{H}$  NMR (300 MHz, DMSO- $d_6$ )

methyl 3-(4-hydroxy-6-methyl-2-oxo-2H-pyran-3-yl)-3-(4-oxo-4H-chromen-3-yl)propanoate (5g)



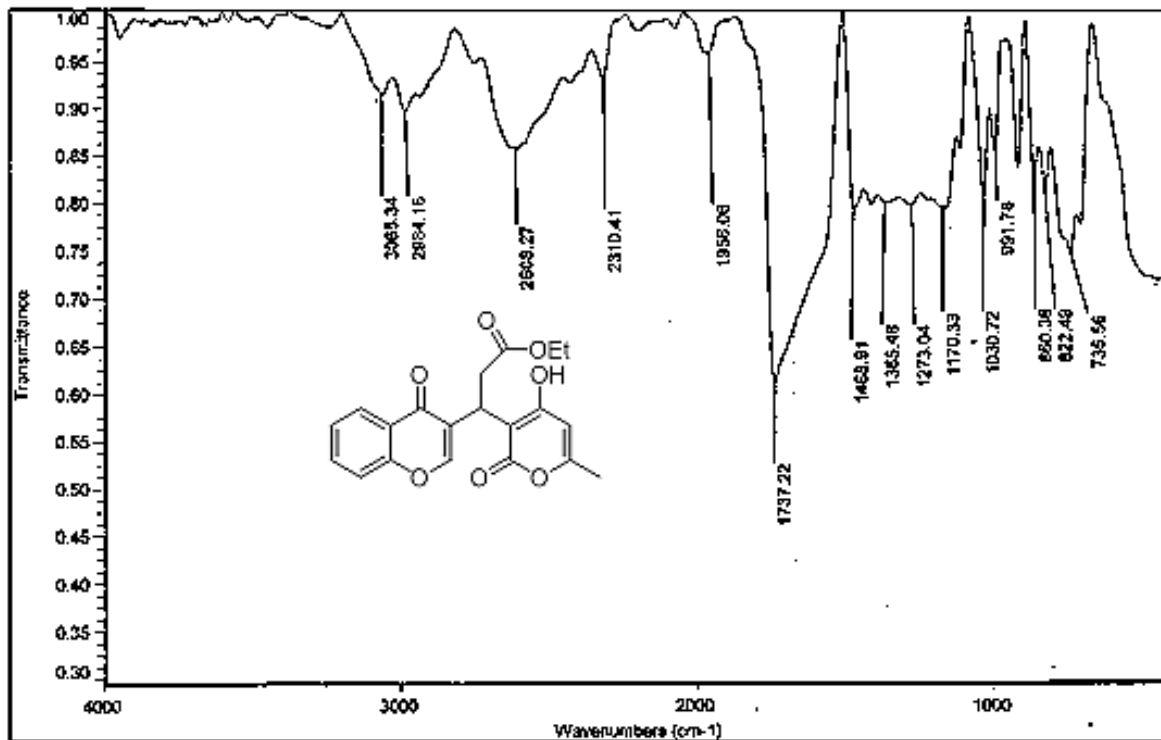
<sup>13</sup>C NMR (75 MHz, DMSO-d<sub>6</sub>)

methyl 3-(4-hydroxy-6-methyl-2-oxo-2H-pyran-3-yl)-3-(4-oxo-4H-chromen-3-yl)propanoate (5g)



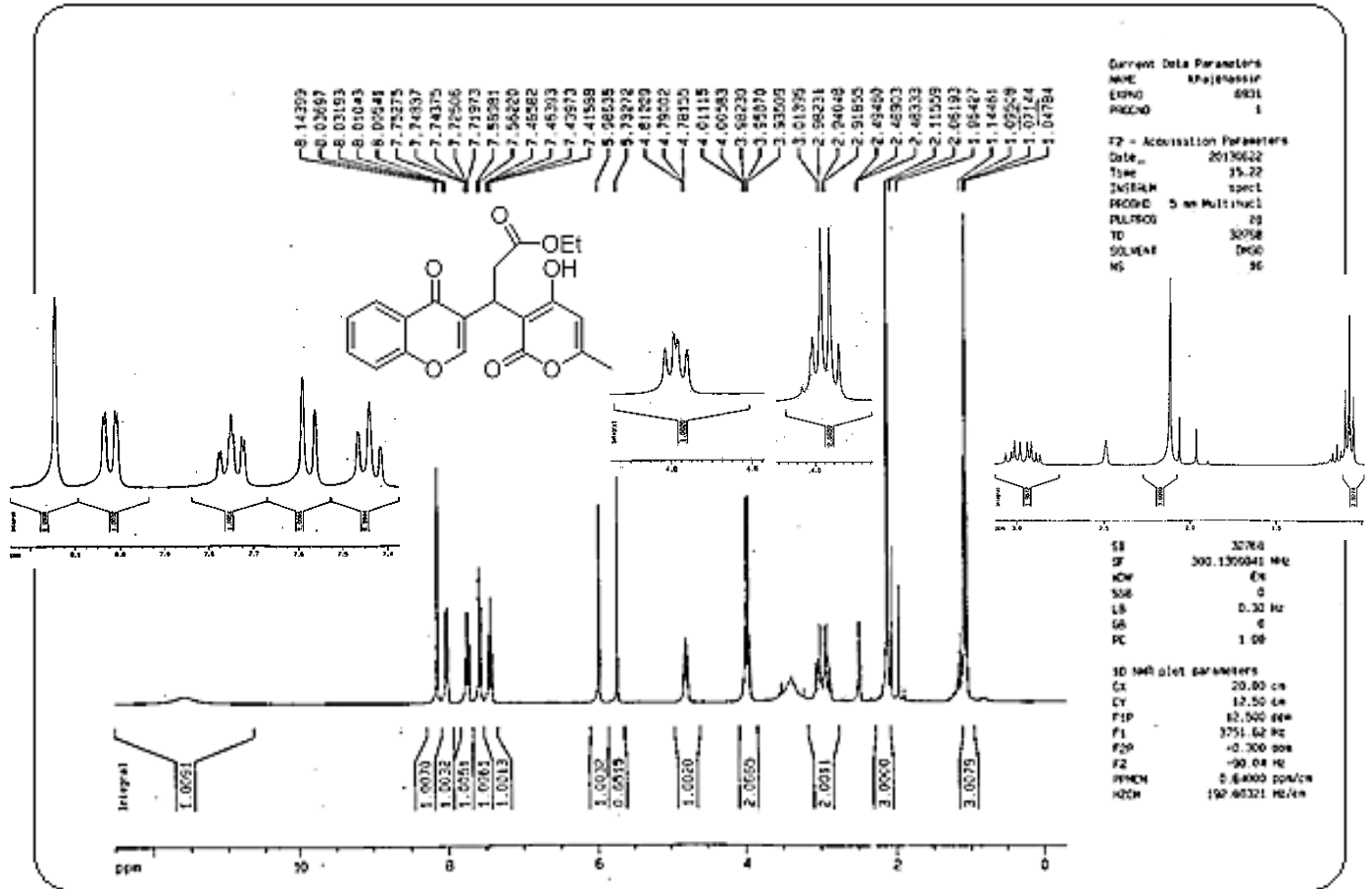
HR-Mass (ESI)

ethyl 3-(4-hydroxy-6-methyl-2-oxo-2H-pyran-3-yl)-3-(4-oxo-4H-chromen-3-yl)propanoate (5h)



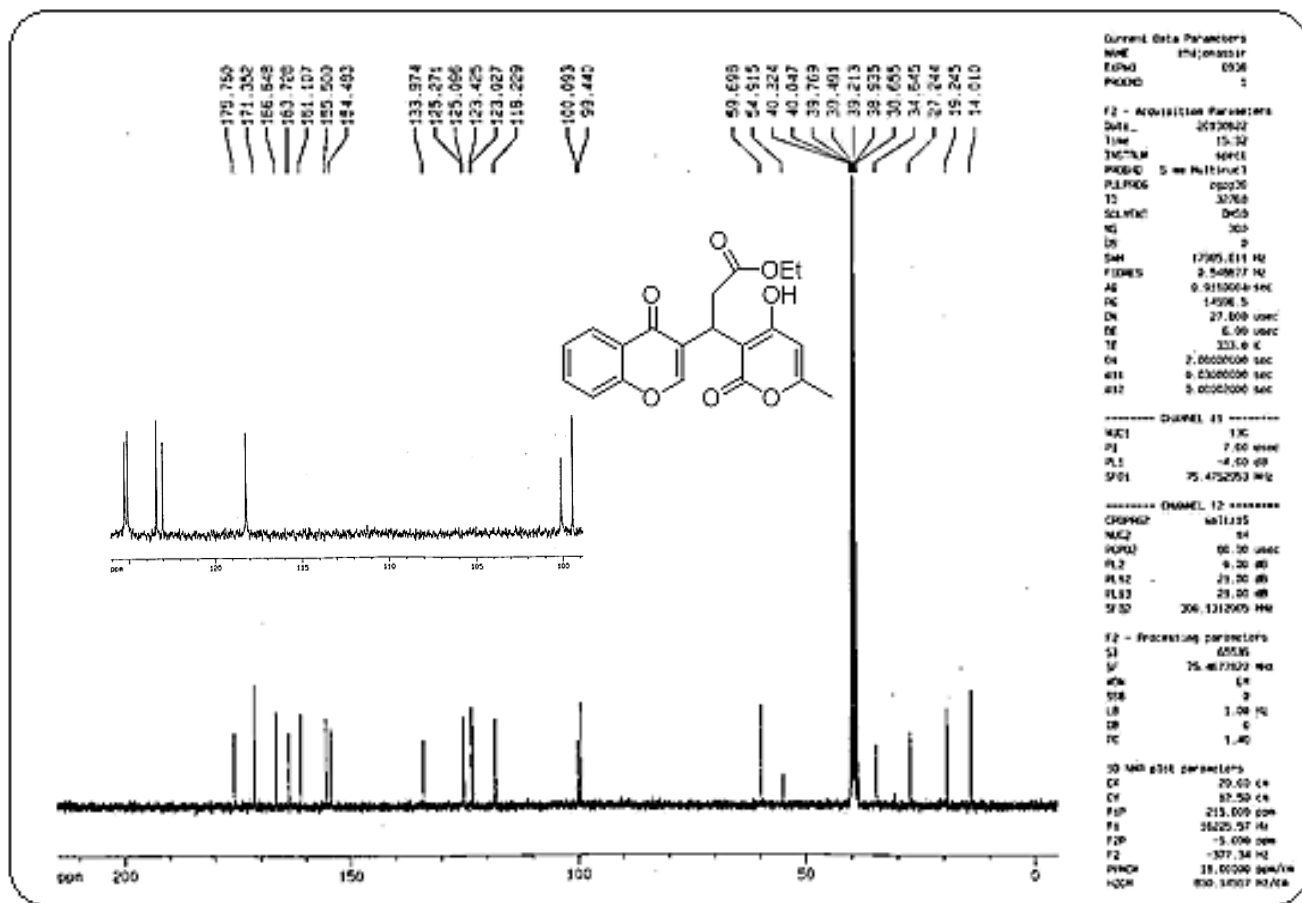
IR (KBr, cm<sup>-1</sup>)

ethyl 3-(4-hydroxy-6-methyl-2-oxo-2H-pyran-3-yl)-3-(4-oxo-4H-chromen-3-yl)propanoate (5h)



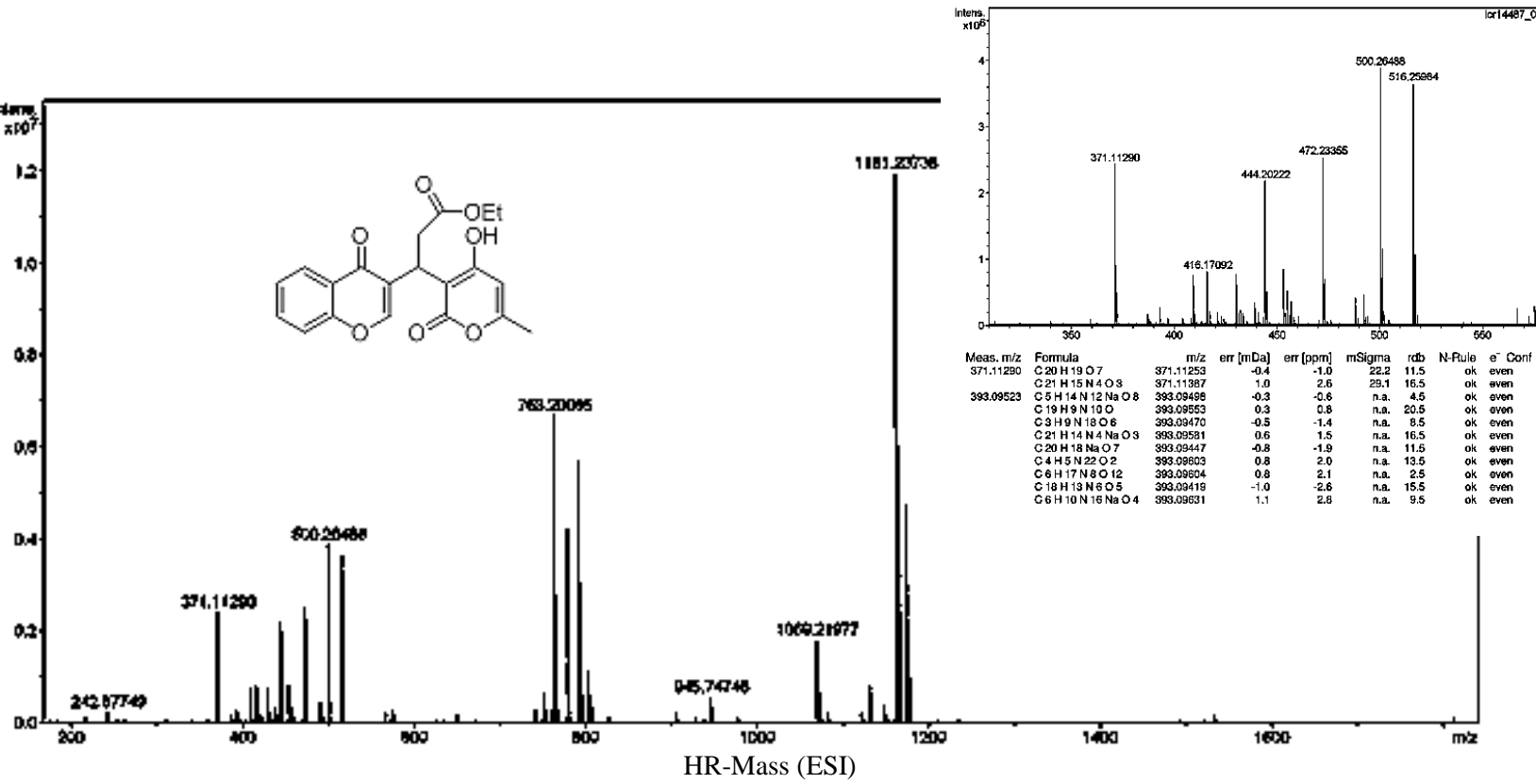
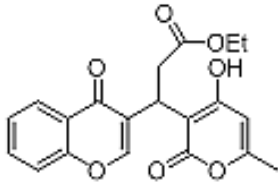
<sup>1</sup>H NMR (300 MHz, DMSO-d<sub>6</sub>)

ethyl 3-(4-hydroxy-6-methyl-2-oxo-2H-pyran-3-yl)-3-(4-oxo-4H-chromen-3-yl)propanoate (5h)



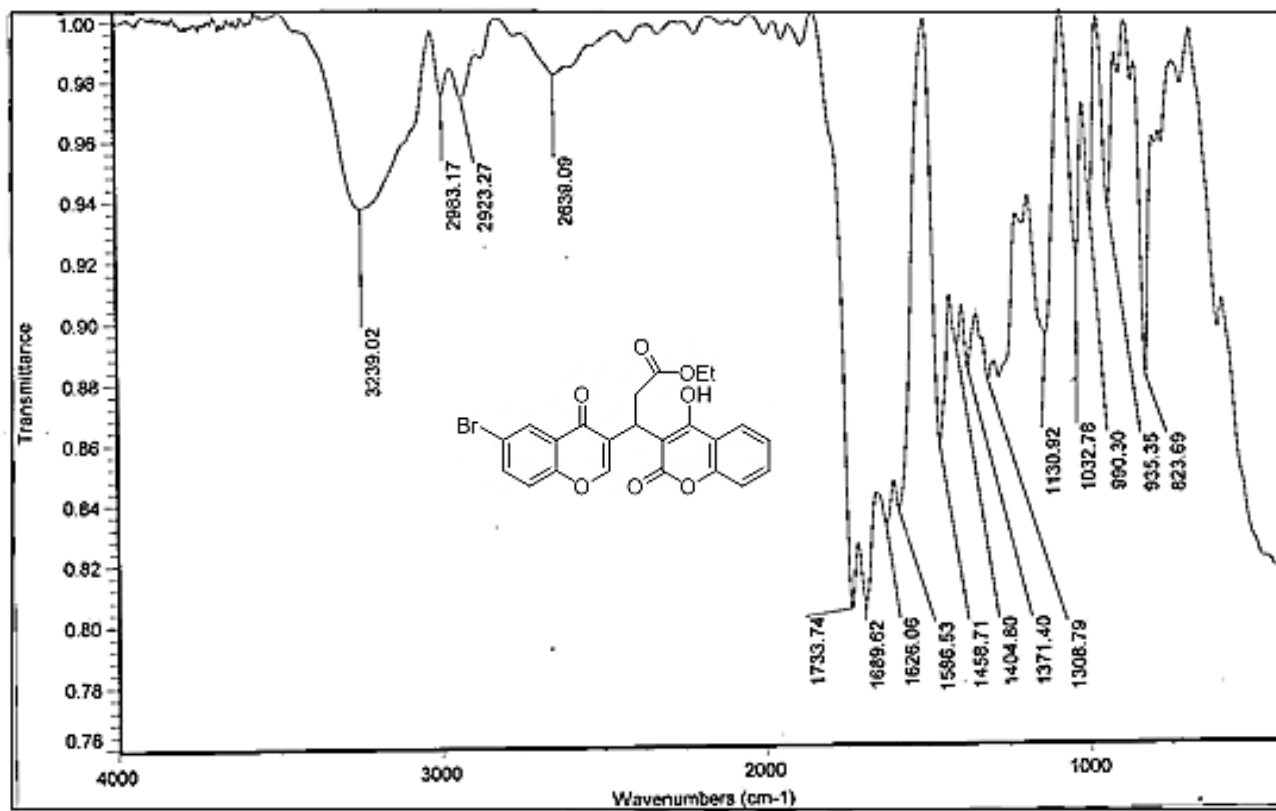
$^{13}\text{C}$  NMR (75 MHz, DMSO- $d_6$ )

ethyl 3-(4-hydroxy-6-methyl-2-oxo-2H-pyran-3-yl)-3-(4-oxo-4H-chromen-3-yl)propanoate (5h)



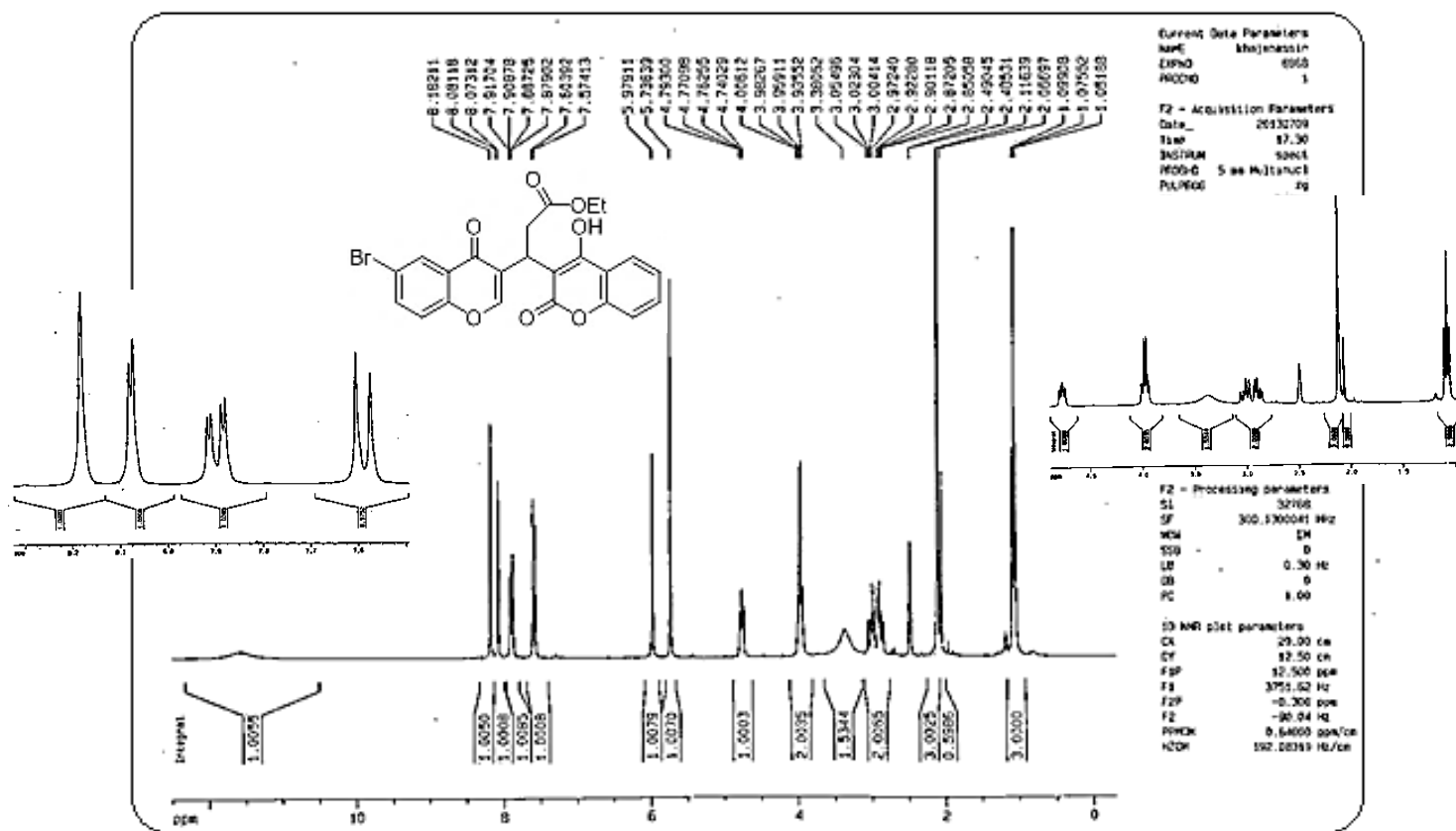


ethyl 3-(6-bromo-4-oxo-4H-chromen-3-yl)-3-(4-hydroxy-2-oxo-2H-chromen-3-yl)propanoate (5i)



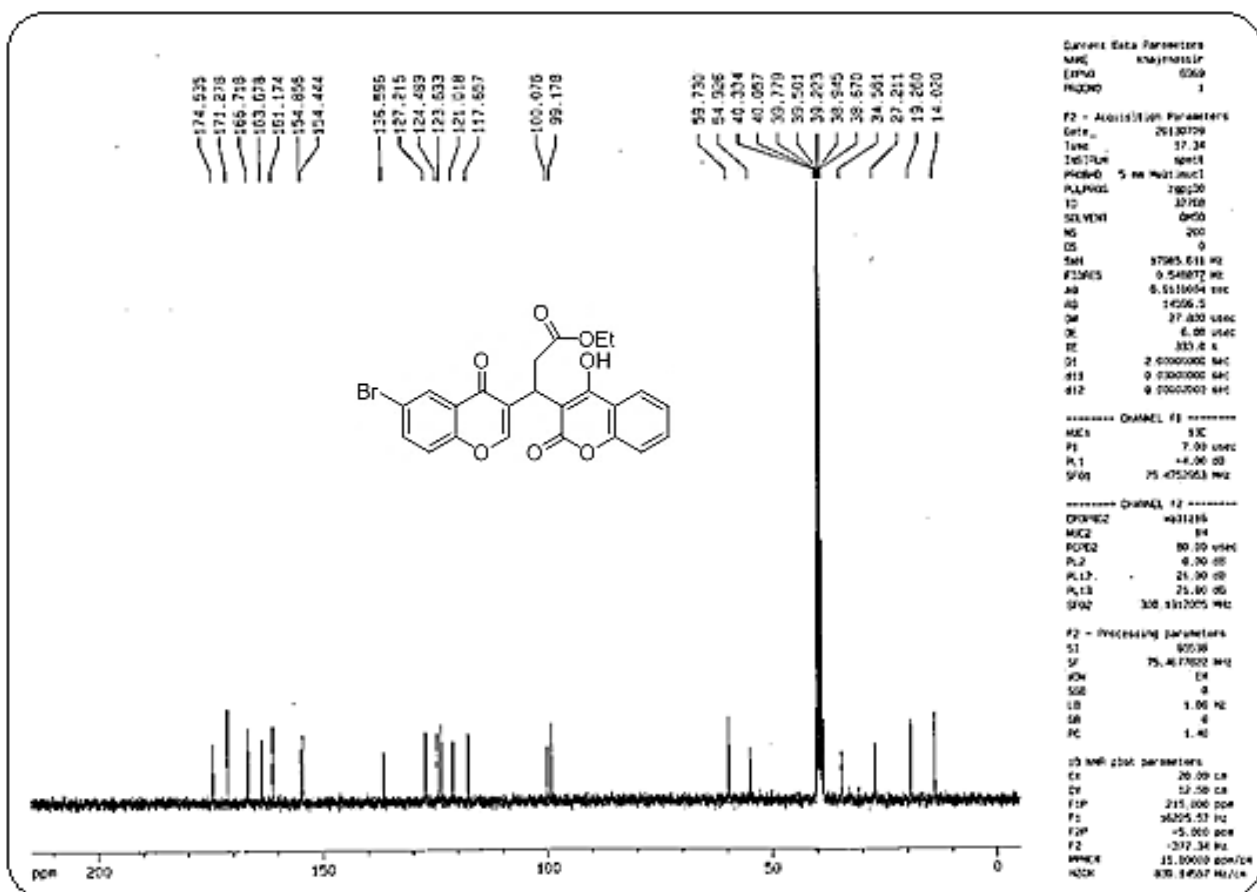
IR (KBr, cm<sup>-1</sup>)

ethyl 3-(6-bromo-4-oxo-4H-chromen-3-yl)-3-(4-hydroxy-2-oxo-2H-chromen-3-yl)propanoate (5i)



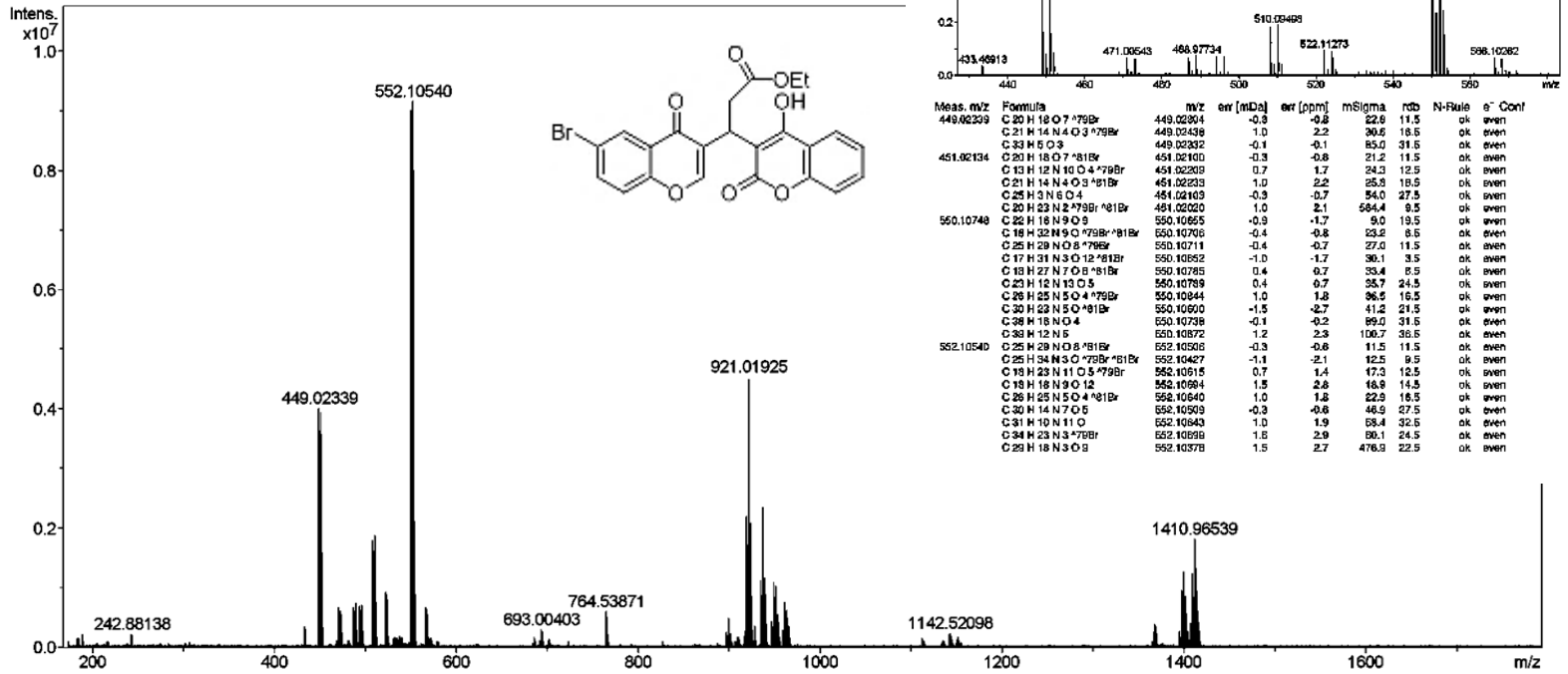
$^1\text{H}$  NMR (300 MHz,  $\text{DMSO}-d_6$ )

ethyl 3-(6-bromo-4-oxo-4H-chromen-3-yl)-3-(4-hydroxy-2-oxo-2H-chromen-3-yl)propanoate (5i)



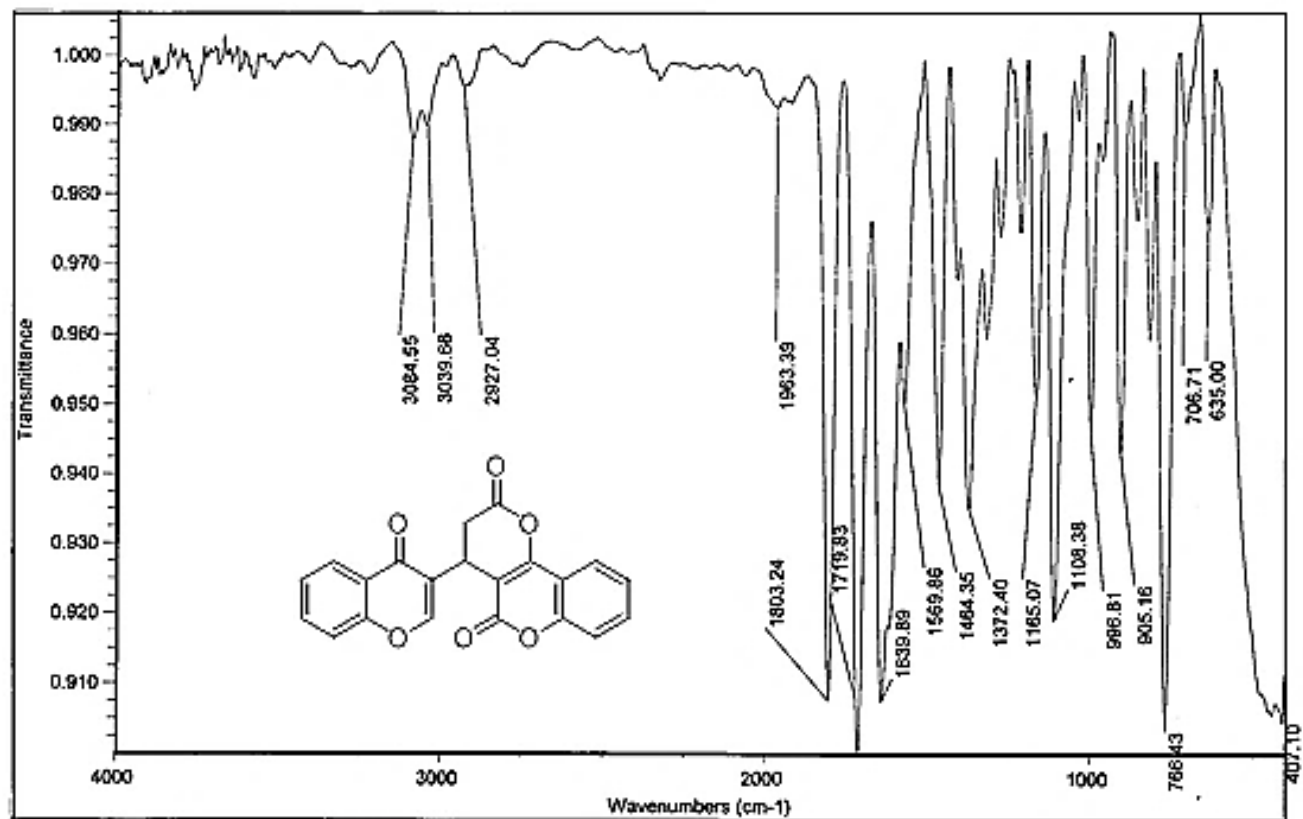
<sup>13</sup>C NMR (75 MHz, DMSO-d<sub>6</sub>)

ethyl 3-(6-bromo-4-oxo-4H-chromen-3-yl)-3-(4-hydroxy-2-oxo-2H-chromen-3-yl)propanoate (5i)



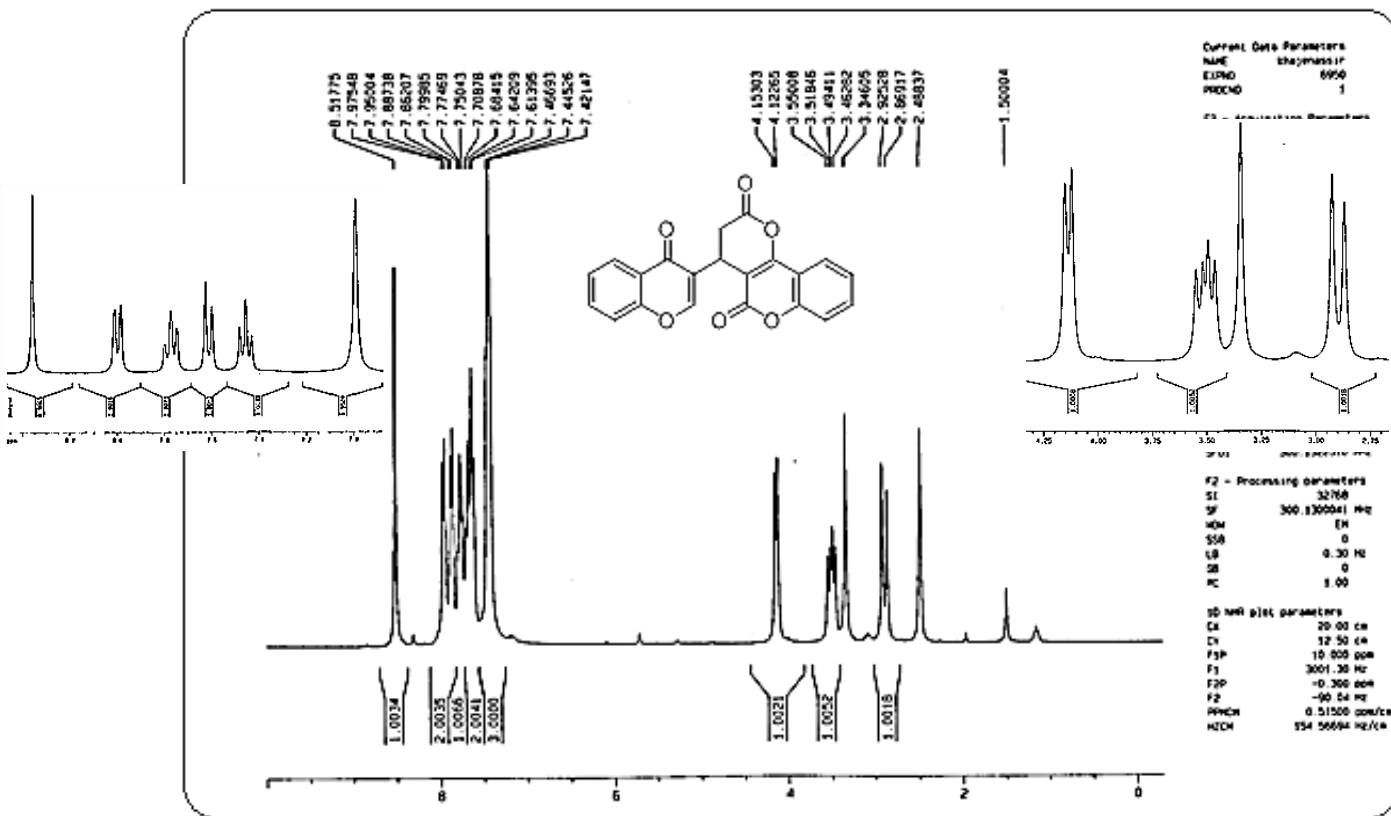
HR-Mass (ESI)

4-(4-oxo-4H-chromen-3-yl)-3,4-dihydropyrano[3,2-c]chromene-2,5-dione (10)



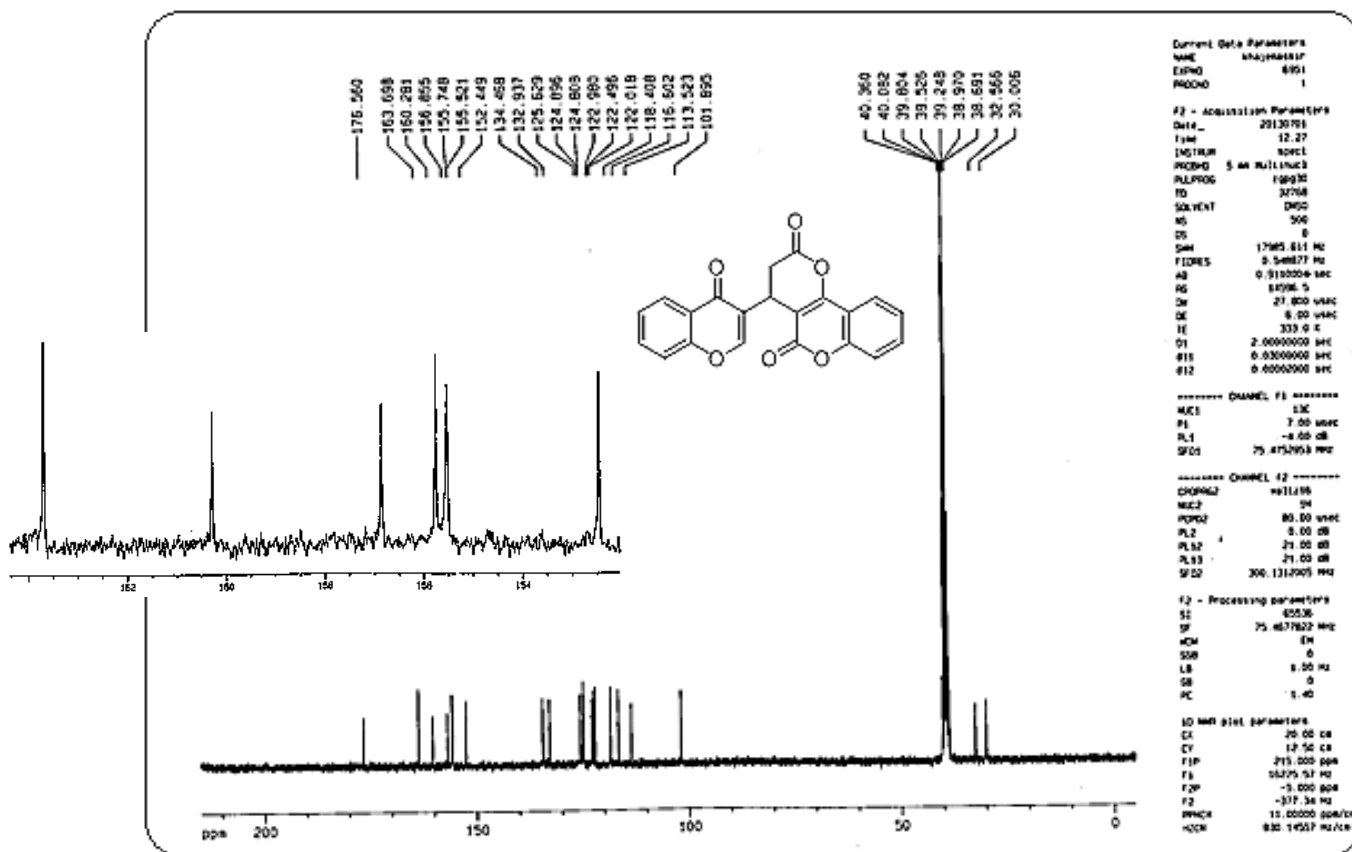
IR (KBr, cm<sup>-1</sup>)

4-(4-oxo-4H-chromen-3-yl)-3,4-dihydroprano[3,2-c]chromene-2,5-dione (10)



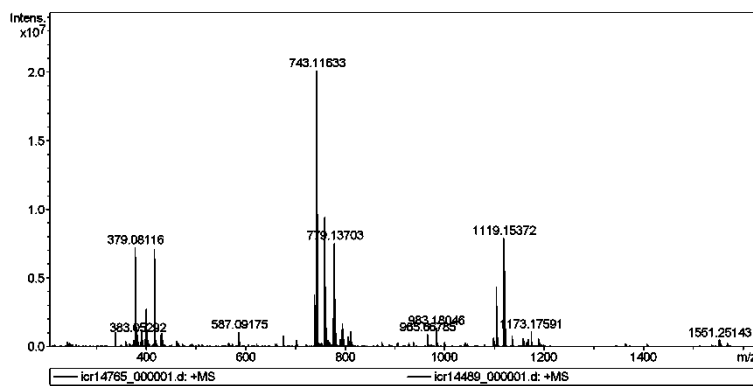
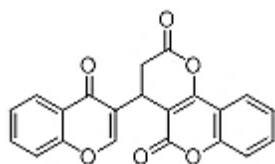
$^1\text{H}$  NMR (300 MHz,  $\text{DMSO-}d_6$ )

4-(4-oxo-4H-chromen-3-yl)-3,4-dihydropyrano[3,2-c]chromene-2,5-dione (10)

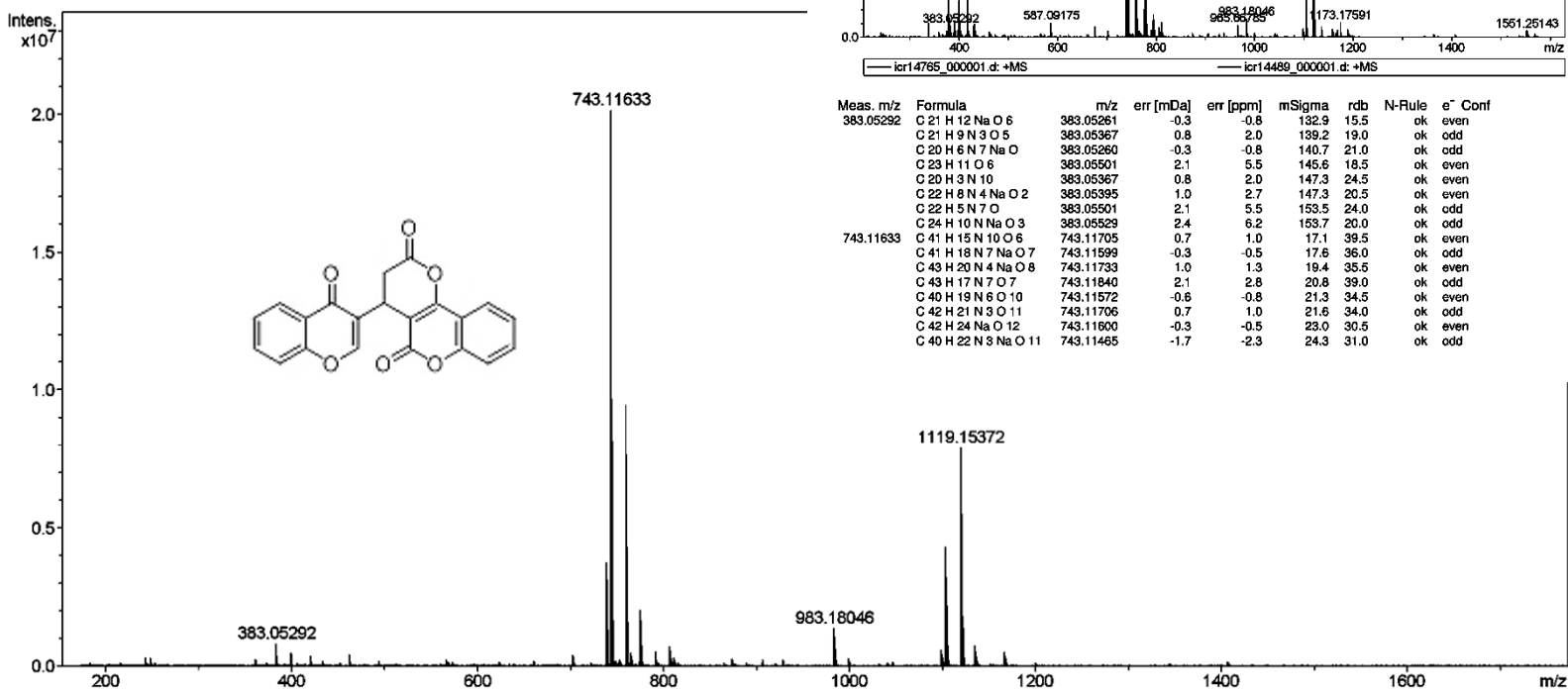


$^{13}\text{C}$  NMR (75 MHz,  $\text{DMSO-}d_6$ )

4-(4-oxo-4H-chromen-3-yl)-3,4-dihydropyrano[3,2-c]chromene-2,5-dione (10)



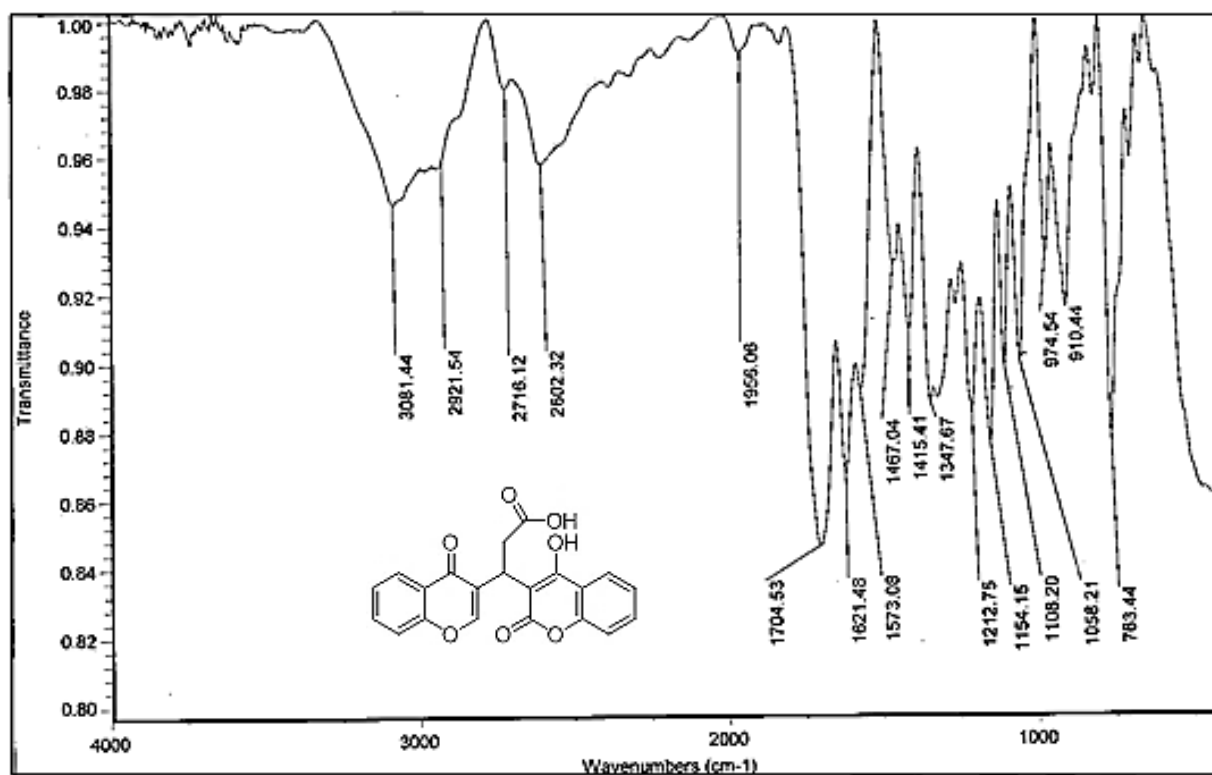
Meas. m/z	Formula	m/z	err [mDa]	err [ppm]	mSigma	rdB	N-Rule	e <sup>-</sup> Conf
383.05292	C 21 H 12 Na O 6	383.05261	-0.3	-0.8	132.9	15.5	ok	even
	C 21 H 9 N 3 O 5	383.05367	0.8	2.0	139.2	19.0	ok	odd
	C 20 H 6 N 7 Na O	383.05260	-0.3	-0.8	140.7	21.0	ok	odd
	C 23 H 11 O 6	383.05501	2.1	5.5	145.6	18.5	ok	even
	C 20 H 3 N 10	383.05367	0.8	2.0	147.3	24.5	ok	even
	C 22 H 8 N 4 Na O 2	383.05395	1.0	2.7	147.3	20.5	ok	even
	C 22 H 5 N 7 O	383.05501	2.1	5.5	153.5	24.0	ok	odd
	C 24 H 10 N Na O 3	383.05529	2.4	6.2	153.7	20.0	ok	odd
743.11633	C 41 H 15 N 10 O 6	743.11705	0.7	1.0	17.1	39.5	ok	even
	C 41 H 18 N 7 Na O 7	743.11599	-0.3	-0.5	17.6	36.0	ok	odd
	C 43 H 20 N 4 Na O 8	743.11733	1.0	1.3	19.4	35.5	ok	even
	C 43 H 17 N 7 O 7	743.11840	2.1	2.8	20.8	39.0	ok	odd
	C 40 H 19 N 6 O 10	743.11572	-0.6	-0.8	21.3	34.5	ok	even
	C 42 H 21 N 3 O 11	743.11706	0.7	1.0	21.6	34.0	ok	odd
	C 42 H 24 Na O 12	743.11600	-0.3	-0.5	23.0	30.5	ok	even
	C 40 H 22 N 3 Na O 11	743.11465	-1.7	-2.3	24.3	31.0	ok	odd



HR-Mass (ESI)

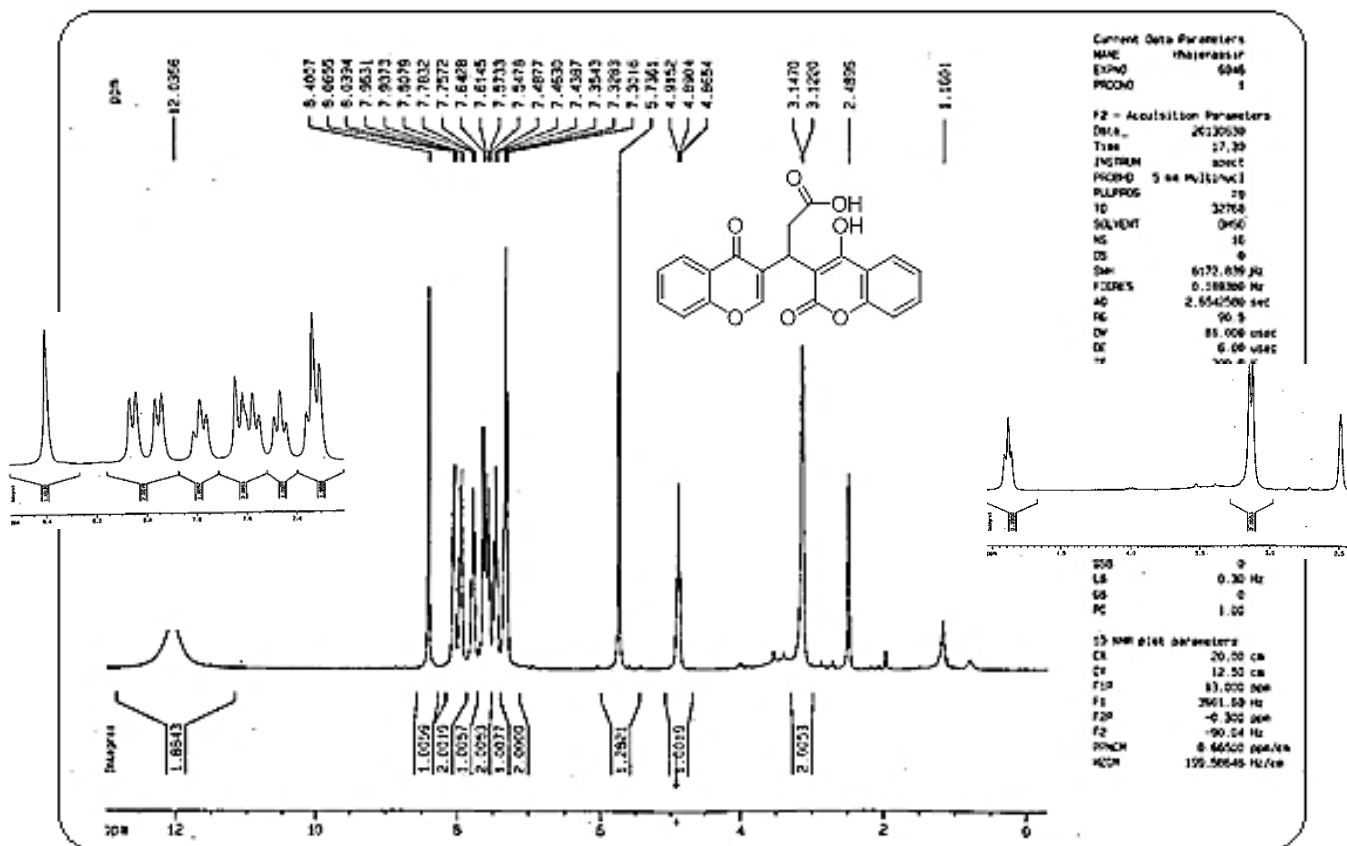


3-(4-hydroxy-2-oxo-2H-chromen-3-yl)-3-(4-oxo-4H-chromen-3-yl) propanoic acid (11)



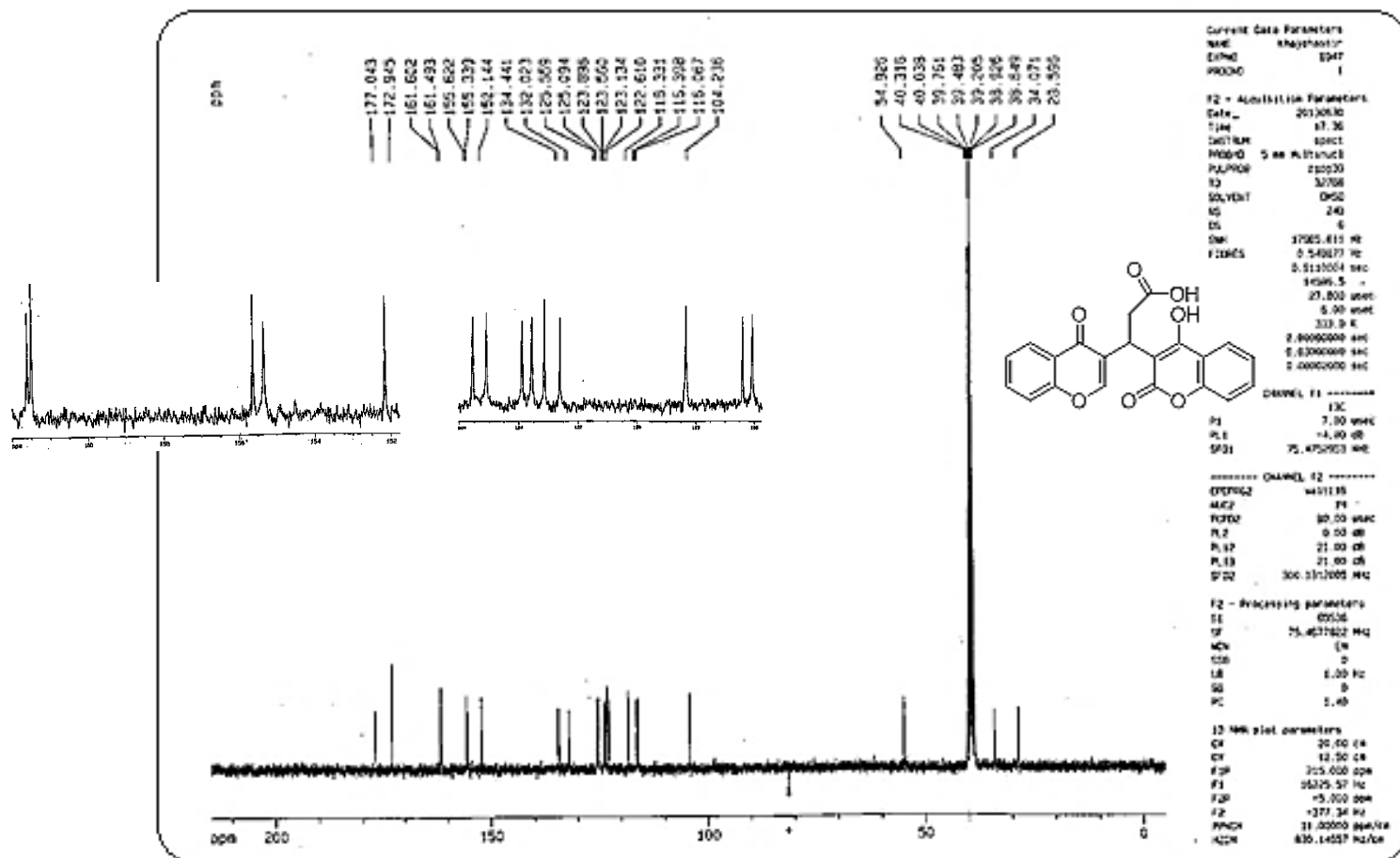
IR (KBr,  $\text{cm}^{-1}$ )

3-(4-hydroxy-2-oxo-2H-chromen-3-yl)-3-(4-oxo-4H-chromen-3-yl) propanoic acid (11)



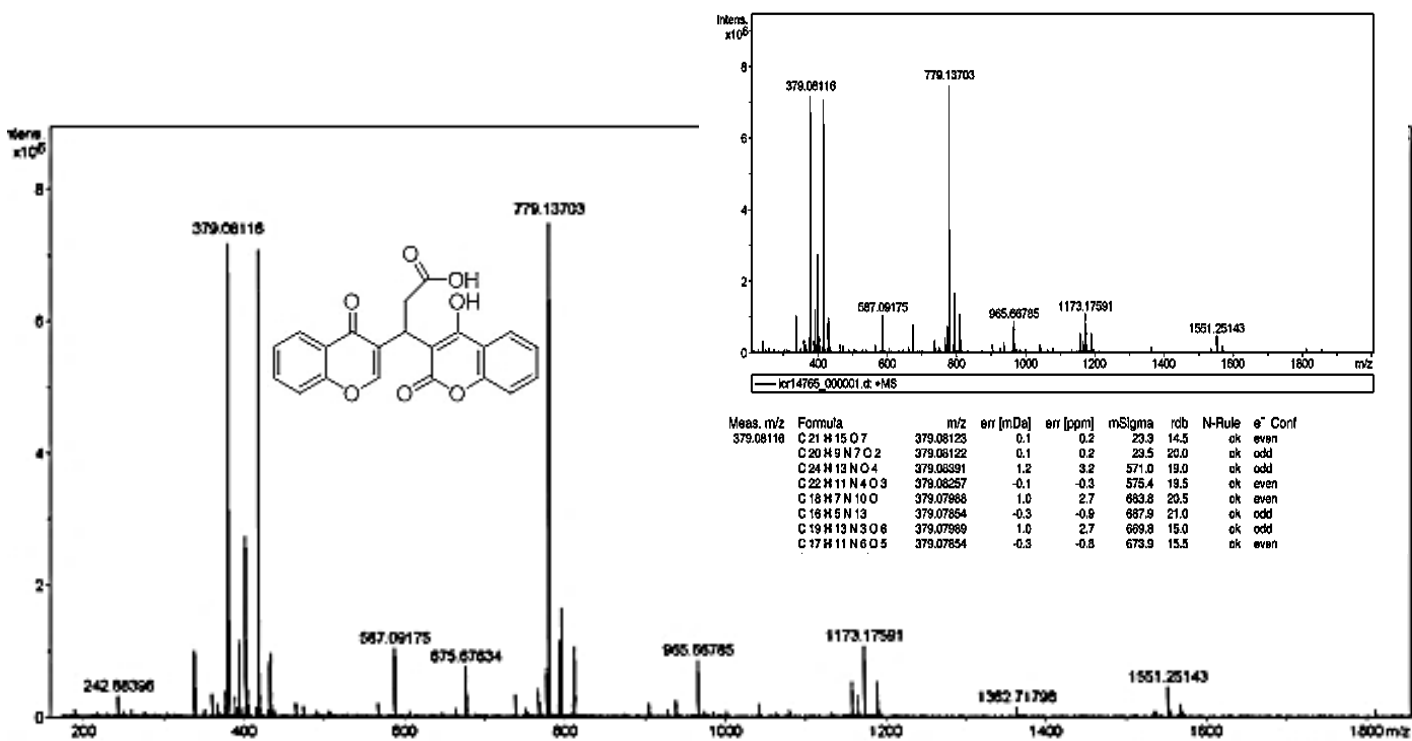
$^1\text{H}$  NMR (300 MHz,  $\text{DMSO}-d_6$ )

3-(4-hydroxy-2-oxo-2H-chromen-3-yl)-3-(4-oxo-4H-chromen-3-yl) propanoic acid (11)



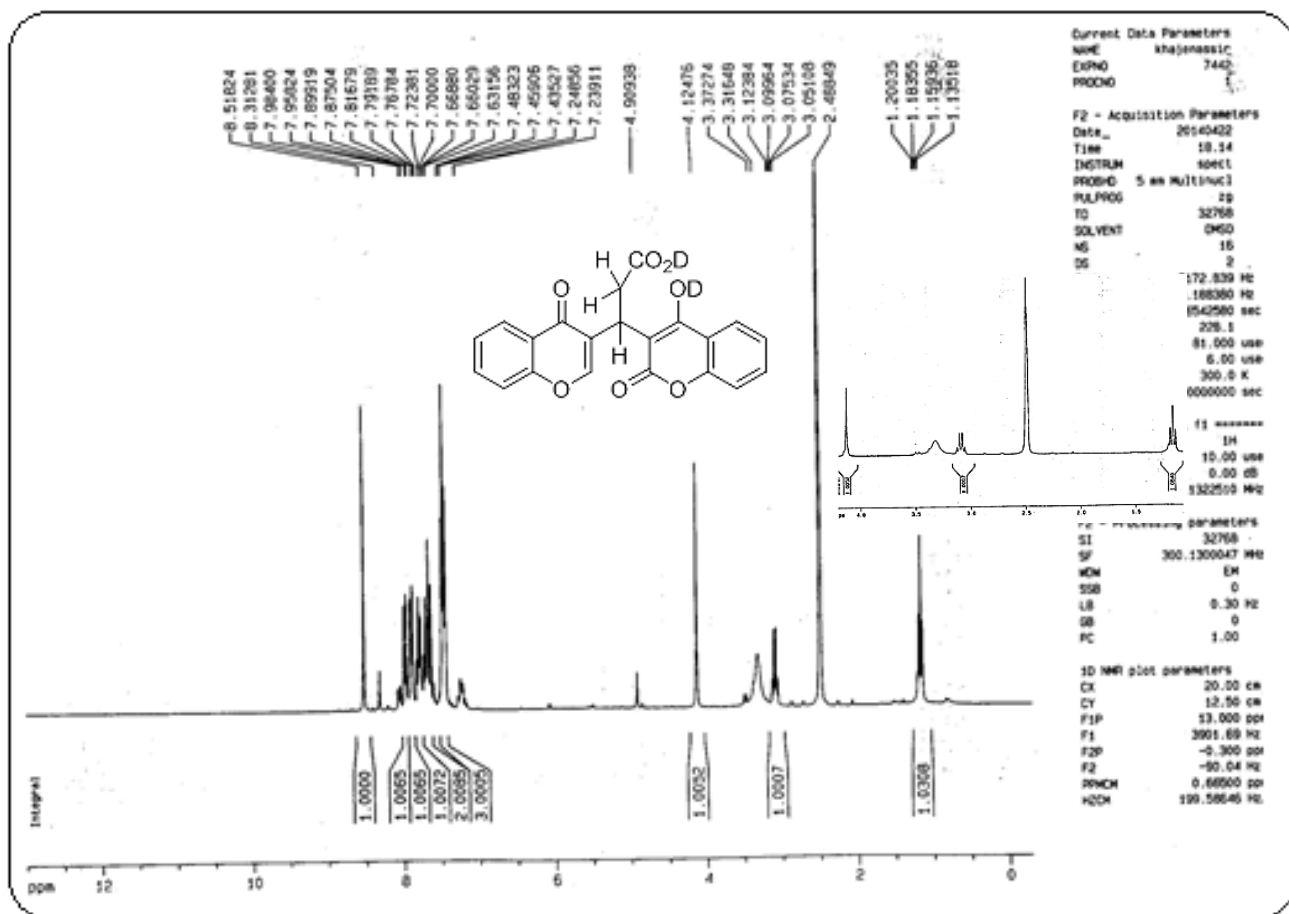
<sup>13</sup>C NMR (75 MHz, DMSO-d<sub>6</sub>)

3-(4-hydroxy-2-oxo-2H-chromen-3-yl)-3-(4-oxo-4H-chromen-3-yl) propanoic acid (11)



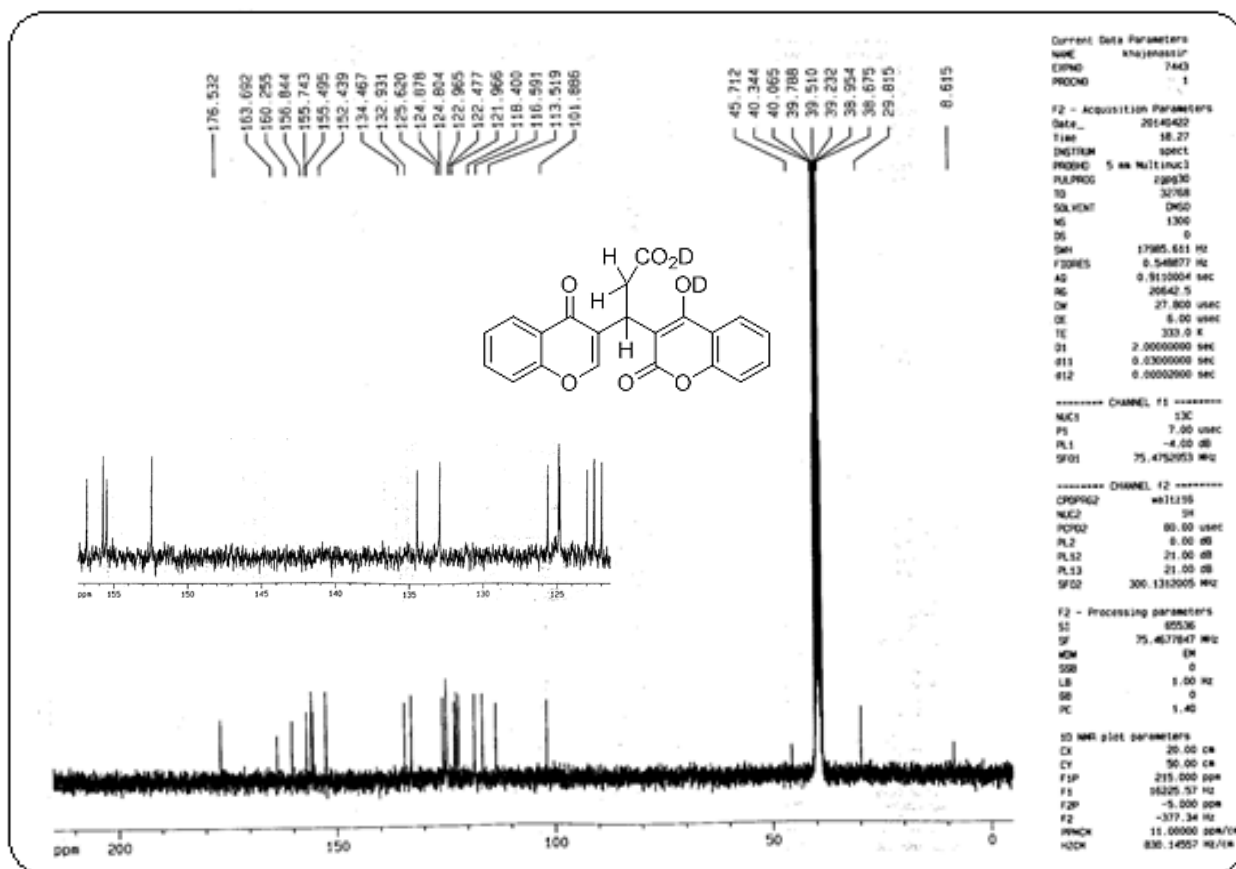
HR-Mass (ESI)

3-(4-(hydroxy-d)-2-oxo-2H-chromen-3-yl)-3-(4-oxo-4H-chromen-3-yl)propanoic acid-d (12)



$^1\text{H}$  NMR (300 MHz,  $\text{DMSO}-d_6$ )

3-(4-(hydroxy-d)-2-oxo-2H-chromen-3-yl)-3-(4-oxo-4H-chromen-3-yl)propanoic acid-d (12)



$^{13}\text{C}$  NMR (75 MHz, DMSO- $d_6$ )