

Supporting Information

Highly selective salicylketoxime-based estrogen receptor beta agonists display antiproliferative activities in a glioma model

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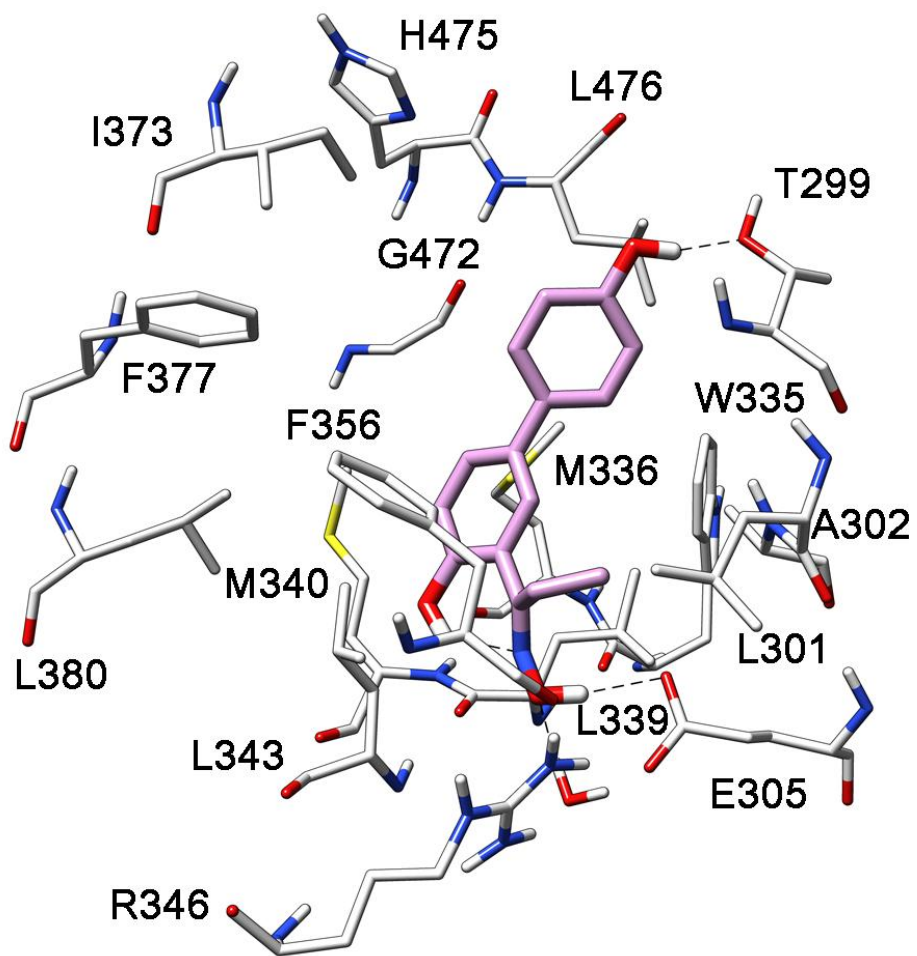
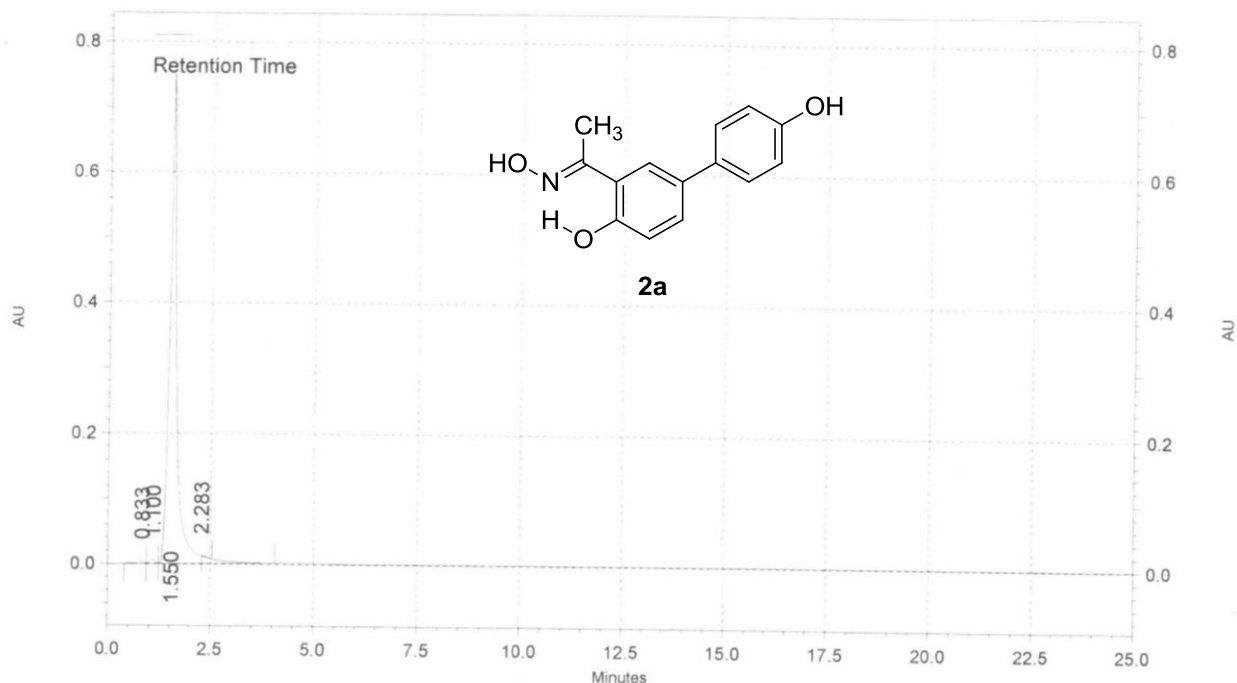


Figure S1. Docking analysis of salicylketoxime **2b** into ER β binding site.

Data File: D:\32Karat\Projects\HPLC\Data\2012\novembre\28-11-12\IP9_254bis.dat
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 Acquisito: 11/28/2012 4:41:28 PM
 Stampato: 12/05/2012 08:42:30 AM



Det 166 Results

Nome	Migration Time	Area %	Area
	0.833	0.44	41668
	1.100	0.52	49670
	1.550	98.97	9400594
	2.283	0.07	6301
Totals		100.00	9498233

Elemental Composition Report

Page 1

Single Mass Analysis

Tolerance = 10.0 PPM / DBE: min = -1.5, max = 600.0

Element prediction: Off

Number of isotope peaks used for i-FIT = 3

Monoisotopic Mass, Even Electron Ions

129 formula(e) evaluated with 1 results within limits (all results (up to 1000) for each mass)

Elements Used:

C: 0-120 H: 0-180 N: 0-5 O: 0-6

Kim, Sung Hoon, ADC292

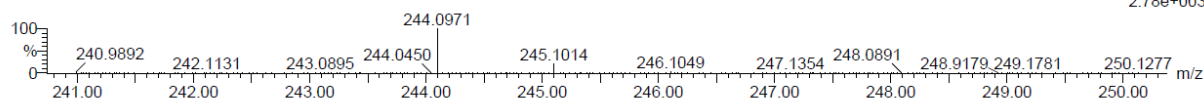
University of Illinois, SCS, Mass Spectrometry Lab

Qtof_54237 18 (1.350) AM (Cen,3, 80.00, Ar,15000.0,558.36,0.70,LS 3); Sm (SG, 2x5.00); Cm (17:18)

Q-tof UE521

1: TOF MS ES+

2.78e+003

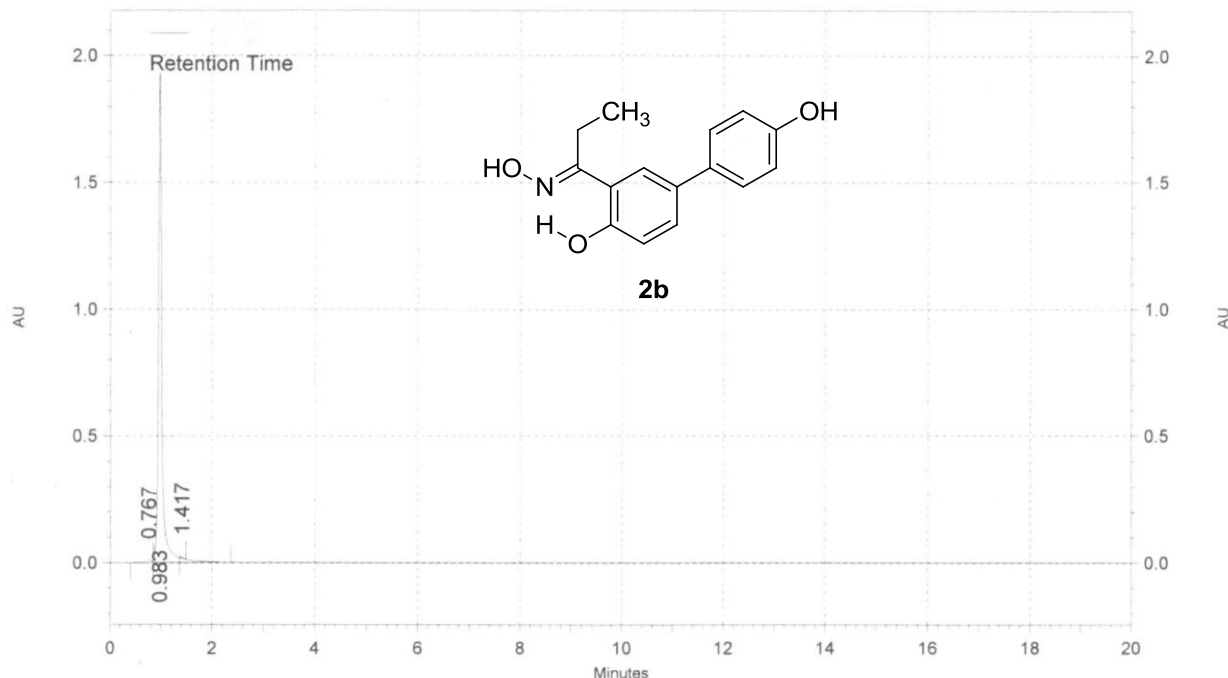


Minimum:

Maximum: 5.0 10.0 -1.5 600.0

Mass	Calc. Mass	mDa	PPM	DBE	i-FIT	Formula
244.0971	244.0974	-0.3	-1.2	8.5	9.8	C14 H14 N O3

Data File: D:\32Karat\Projects\HPLC\Data\2012\novembre\28-11-12\IP27_254.dat
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 Acquisito: 11/28/2012 2:47:33 PM
 Stampato: 12/05/2012 08:40:50 AM



Det 166 Results

Nome	Migration Time	Area %	Area
	0.767	0.78	75349
	0.983	99.01	9560728
	1.417	0.21	20563
Totals			9656640

Elemental Composition Report

Single Mass Analysis

Tolerance = 10.0 PPM / DBE: min = -1.5, max = 600.0
 Element prediction: Off
 Number of isotope peaks used for i-FIT = 3

Monoisotopic Mass, Even Electron Ions

136 formula(e) evaluated with 1 results within limits (all results (up to 1000) for each mass)

Elements Used:

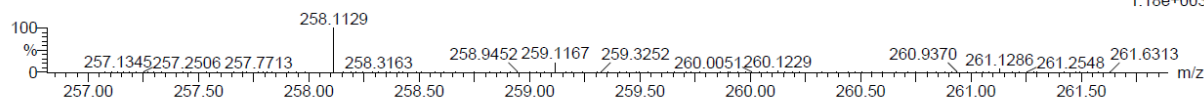
C: 0-120 H: 0-180 N: 0-5 O: 0-6

Kim, Sung Hoon, IP27

University of Illinois, SCS, Mass Spectrometry Lab

Qtof_54243 15 (1.126) AM (Cen,3, 80.00, Ar,15000.0,558.36,0.70,LS 3); Sm (SG, 2x5.00); Cm (14:15)

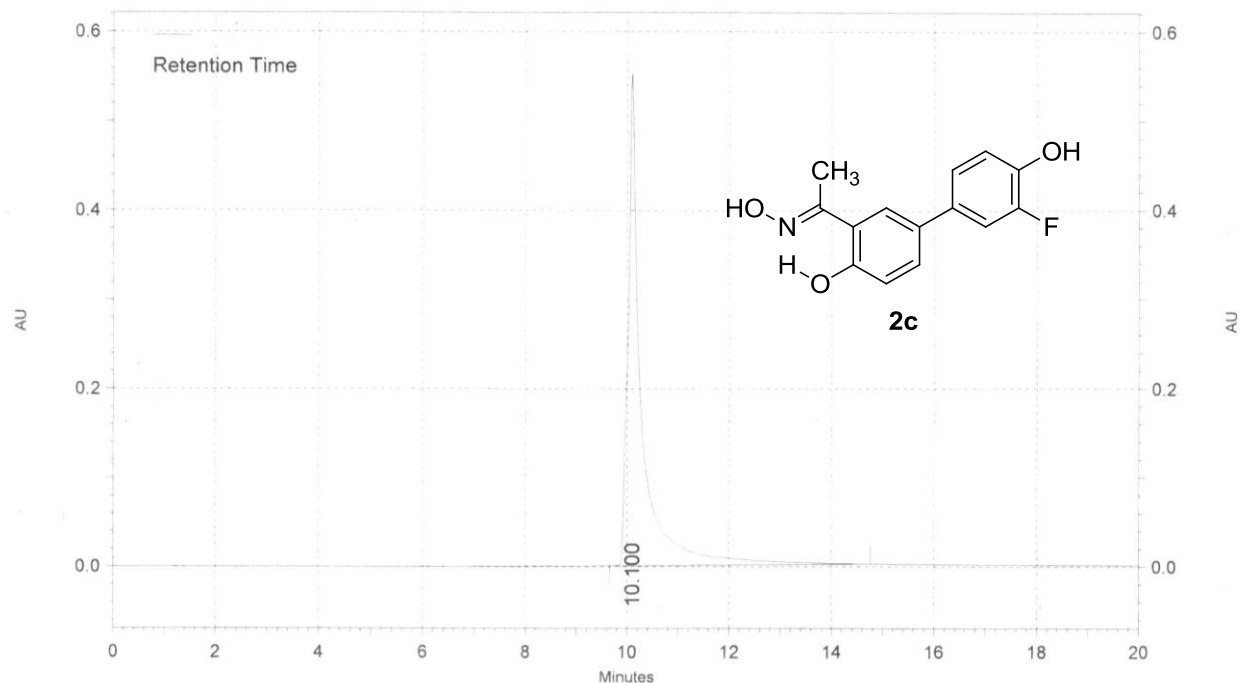
Q-tof UE521
 1: TOF MS ES+
 1.18e+003



Minimum: -1.5
 Maximum: 600.0

Mass	Calc. Mass	mDa	PPM	DBE	i-FIT	Formula
258.1129	258.1130	-0.1	-0.4	8.5	4.4	C15 H16 N O3

Data File: D:\32Karat\Projects\HPLC\Data\2012\novembre\29-11-12\IP30_254.dat
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 Acquisito: 11/29/2012 9:58:52 AM
 Stampato: 12/05/2012 09:07:47 AM



Det 166 Results

Nome	Migration Time	Area %	Area
	10.100	100.00	10259071
Totals			
		100.00	10259071

Elemental Composition Report

Page 1

Single Mass Analysis

Tolerance = 10.0 PPM / DBE: min = -1.5, max = 600.0

Element prediction: Off

Number of isotope peaks used for i-FIT = 3

Monoisotopic Mass, Even Electron Ions

129 formula(e) evaluated with 1 results within limits (all results (up to 1000) for each mass)

Elements Used:

C: 0-120 H: 0-180 N: 0-5 O: 0-6 F: 1-1

Kim, Sung Hoon, ADC359

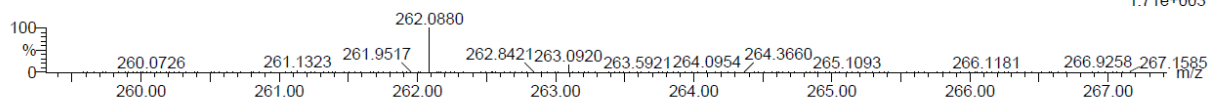
University of Illinois, SCS, Mass Spectrometry Lab

Qtof_54238 44 (3.291) AM (Cen,3, 80.00, Ar,15000.0,558.36,0.70,LS 3); Sm (SG, 2x5.00); Cm (44.45)

Q-tof UE521

1: TOF MS ES+

1.71e+003

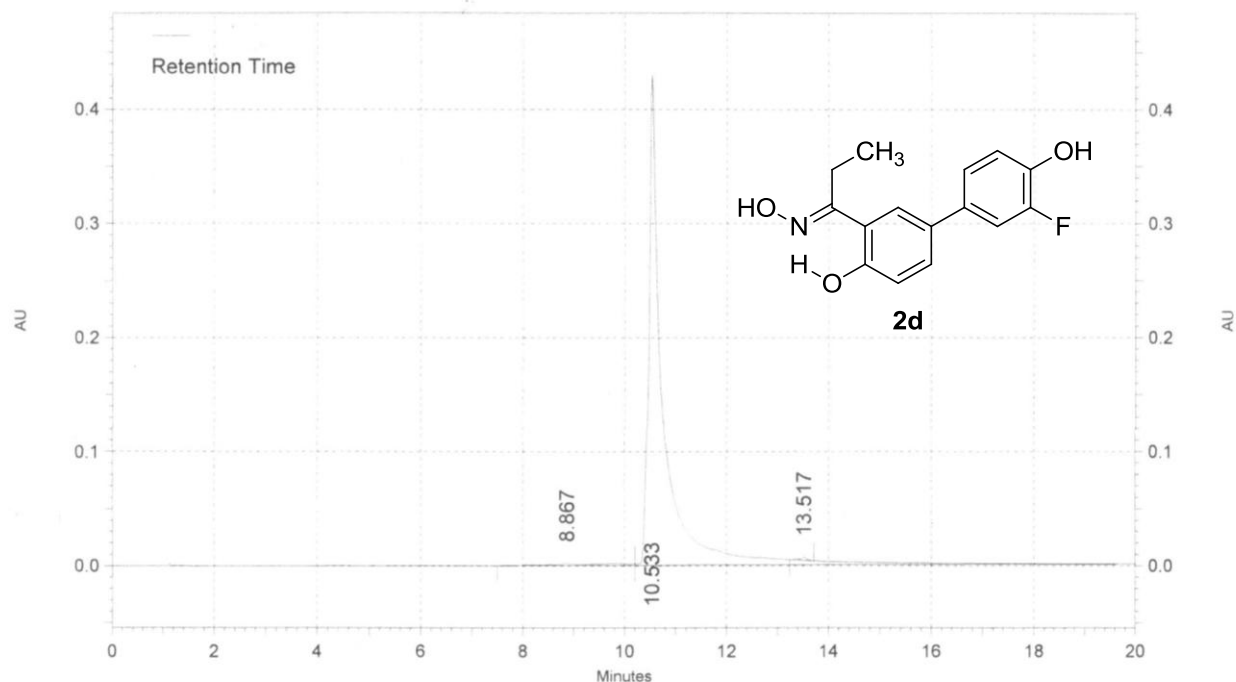


Minimum:

Maximum: 5.0 10.0 -1.5 600.0

Mass	Calc. Mass	mDa	PPM	DBE	i-FIT	Formula
262.0880	262.0879	0.1	0.4	8.5	2.4	C14 H13 N O3 F

Data File: D:\32Karat\Projects\HPLC\Data\2012\novembre\28-11-12\IP35_254.dat
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 Acquisito: 11/28/2012 5:31:02 PM
 Stampato: 12/05/2012 08:47:12 AM



Det 166 Results

Nome	Migration Time	Area %	Area
	8.867	1.47	129970
	10.533	98.25	8675809
	13.517	0.27	24145
Totals		100.00	8829924

Elemental Composition Report

Page 1

Single Mass Analysis

Tolerance = 10.0 PPM / DBE: min = -1.5, max = 600.0

Element prediction: Off

Number of isotope peaks used for i-FIT = 3

Monoisotopic Mass, Even Electron Ions

136 formula(e) evaluated with 1 results within limits (all results (up to 1000) for each mass)

Elements Used:

C: 0-120 H: 0-180 N: 0-5 O: 0-6 F: 1-1

Kim, Sung Hoon, IP35

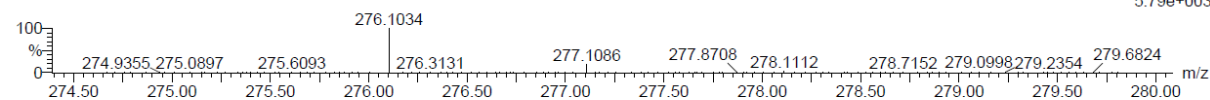
University of Illinois, SCS, Mass Spectrometry Lab

Qtof_54247 52 (3.887) AM (Cen,3, 80.00, Ar,15000.0,558.36,0.70,LS 3); Sm (SG, 2x5.00); Cm (52:54)

Q-tof UE521

1: TOF MS ES+

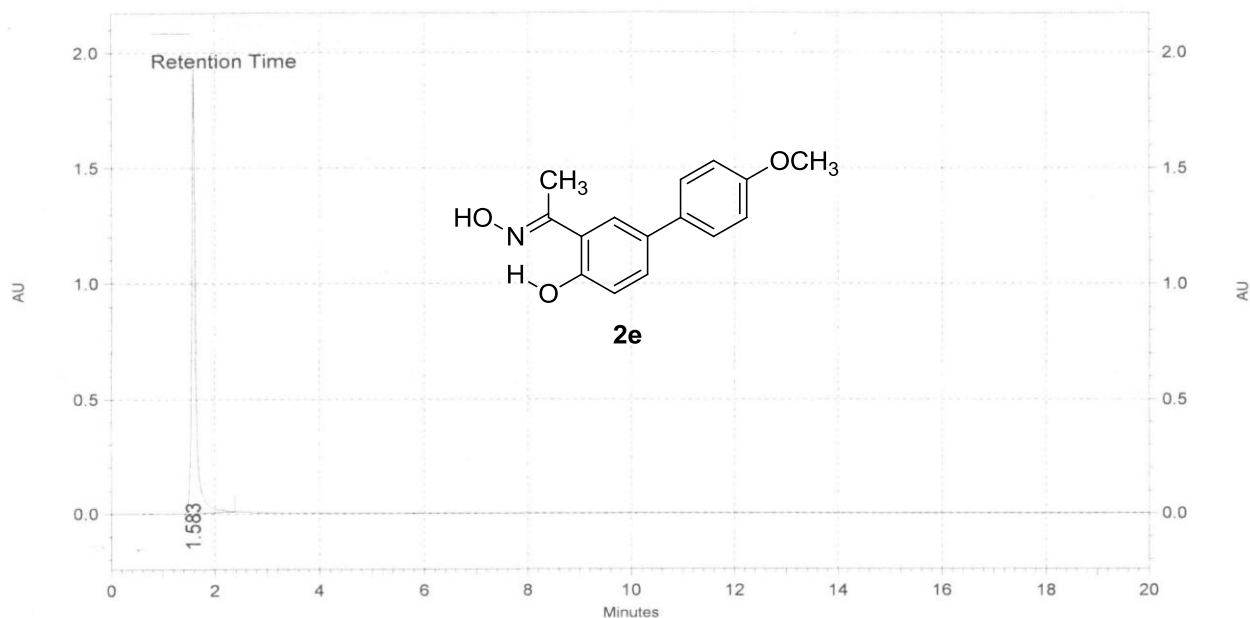
5.79e+003



Minimum: -1.5
 Maximum: 5.0 10.0 600.0

Mass	Calc. Mass	mDa	PPM	DBE	i-FIT	Formula
276.1034	276.1036	-0.2	-0.7	8.5	5.1	C15 H15 N O3 F

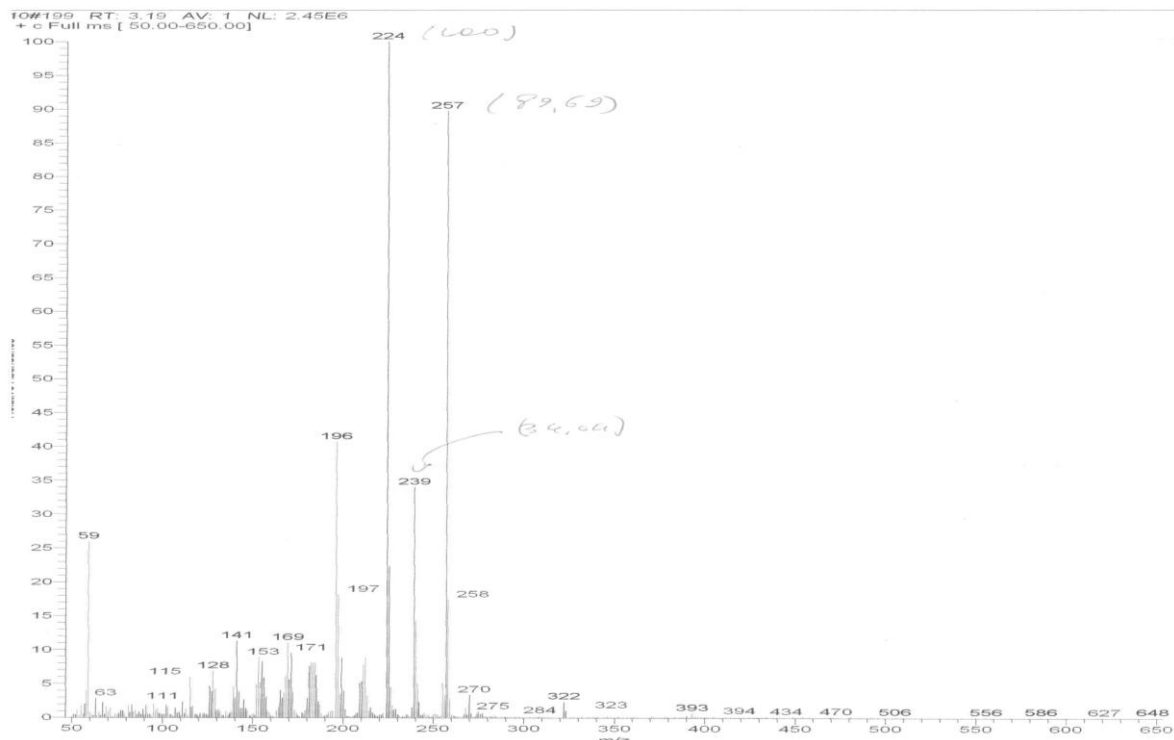
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 Stampato: 12/04/2012 02:06:36 PM



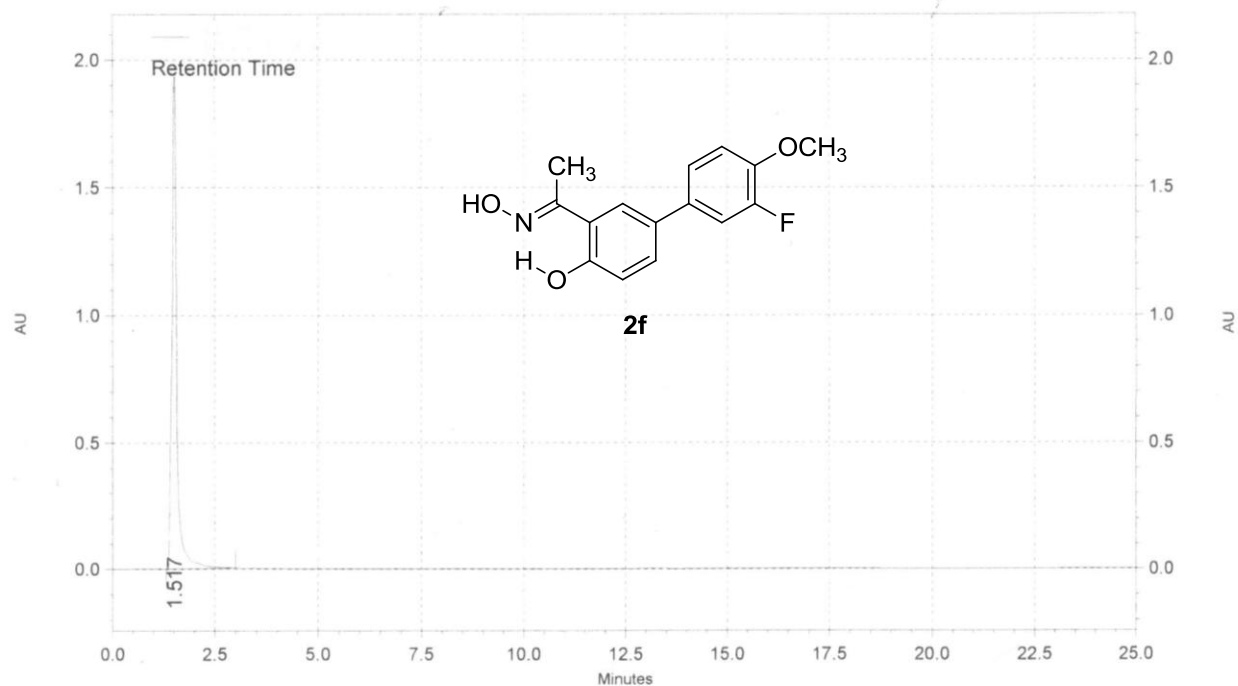
Det 166 Results

Nome	Migration Time	Area %	Area
	1.583	100.00	10096221

Totals		100.00	10096221
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Data File: D:\32Karat\Projects\HPLC\Data\2012\novembre\27-11-12\IP15_254_70-30.dat
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 Acquisito: 11/27/2012 10:52:54 AM
 Stampato: 12/04/2012 02:00:54 PM



Det 166 Results

Nome	Migration Time	Area %	Area
	1.517	100.00	16442736
Totals			100.00
			16442736

Elemental Composition Report

Page 1

Single Mass Analysis

Tolerance = 10.0 PPM / DBE: min = -1.5, max = 600.0

Element prediction: Off

Number of isotope peaks used for i-FIT = 3

Monoisotopic Mass, Even Electron Ions

136 formula(e) evaluated with 1 results within limits (all results (up to 1000) for each mass)

Elements Used:

C: 0-120 H: 0-180 N: 0-5 O: 0-6 F: 1-1

Kim, Sung Hoon, IP15

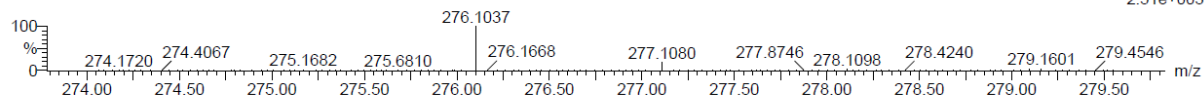
University of Illinois, SCS, Mass Spectrometry Lab

Qtof_54239 43 (3.215) AM (Cen,3, 80.00, Ar,15000.0,558.36,0.70,LS 3); Sm (SG, 2x5.00); Cm (43:45)

Q-tof UE521

1: TOF MS ES+

2.51e+003



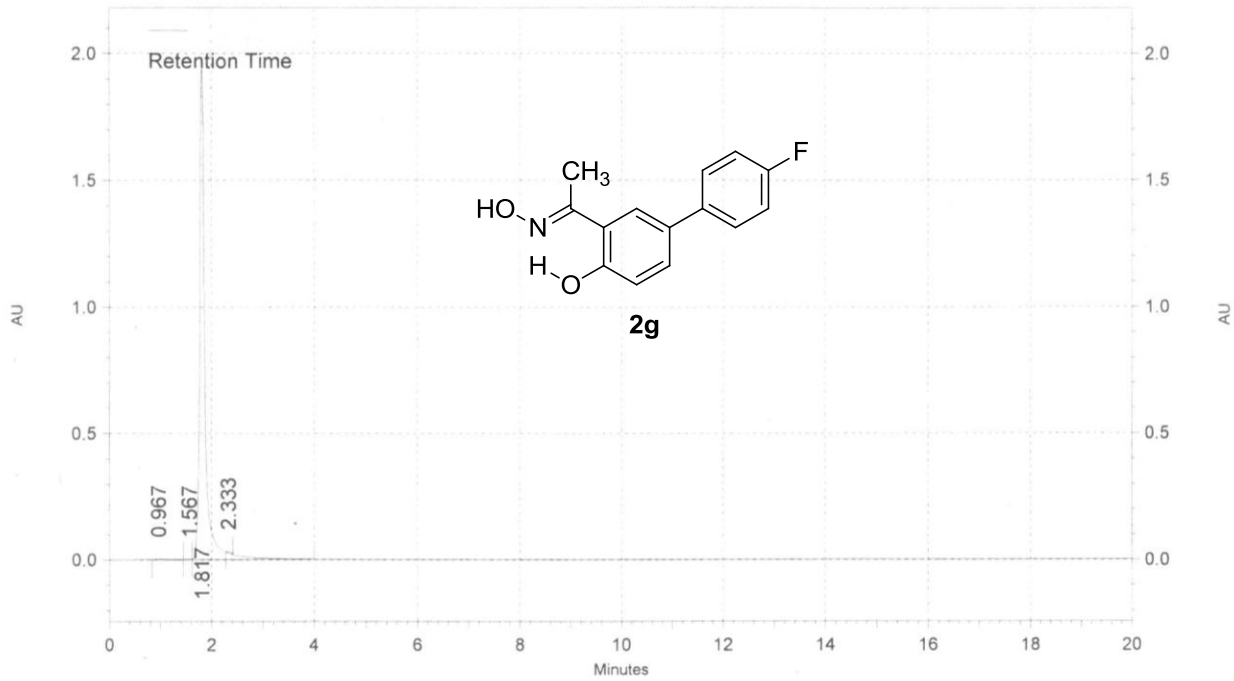
Minimum:

Maximum: 5.0 10.0 -1.5

Mass

Mass	Calc. Mass	mDa	PPM	DBE	i-FIT	Formula
276.1037	276.1036	0.1	0.4	8.5	0.2	C15 H15 N O3 F

Data File: D:\32Karat\Projects\HPLC\Data\2012\novembre\29-11-12\IP16_254_70-30.dat
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 Acquisito: 11/29/2012 1:07:35 PM
 Stampato: 12/05/2012 08:51:17 AM



Det 166 Results

Nome	Migration Time	Area %	Area
	0.967	0.23	33123
	1.567	0.07	10066
	1.817	99.50	14332048
	2.333	0.20	28509

Totals		100.00	14403746
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Elemental Composition Report

Single Mass Analysis

Tolerance = 10.0 PPM / DBE: min = -1.5, max = 600.0

Element prediction: Off

Number of isotope peaks used for i-FIT = 3

Monoisotopic Mass, Even Electron Ions

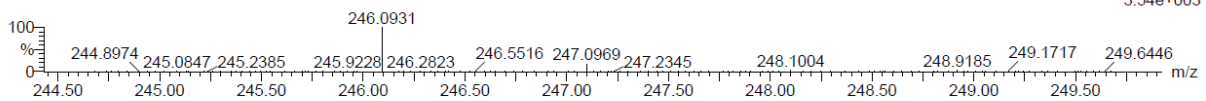
121 formula(e) evaluated with 1 results within limits (all results (up to 1000) for each mass)

Elements Used:

C: 0-120 H: 0-180 N: 0-5 O: 0-6 F: 1-1

Kim, Sung Hoon, IP16 University of Illinois, SCS, Mass Spectrometry Lab
 Qtof_54240 47 (3.515) AM (Cen,3, 80.00, Ar,15000.0,558.36,0.70,LS 3); Sm (SG, 2x5.00); Cm (47:49)

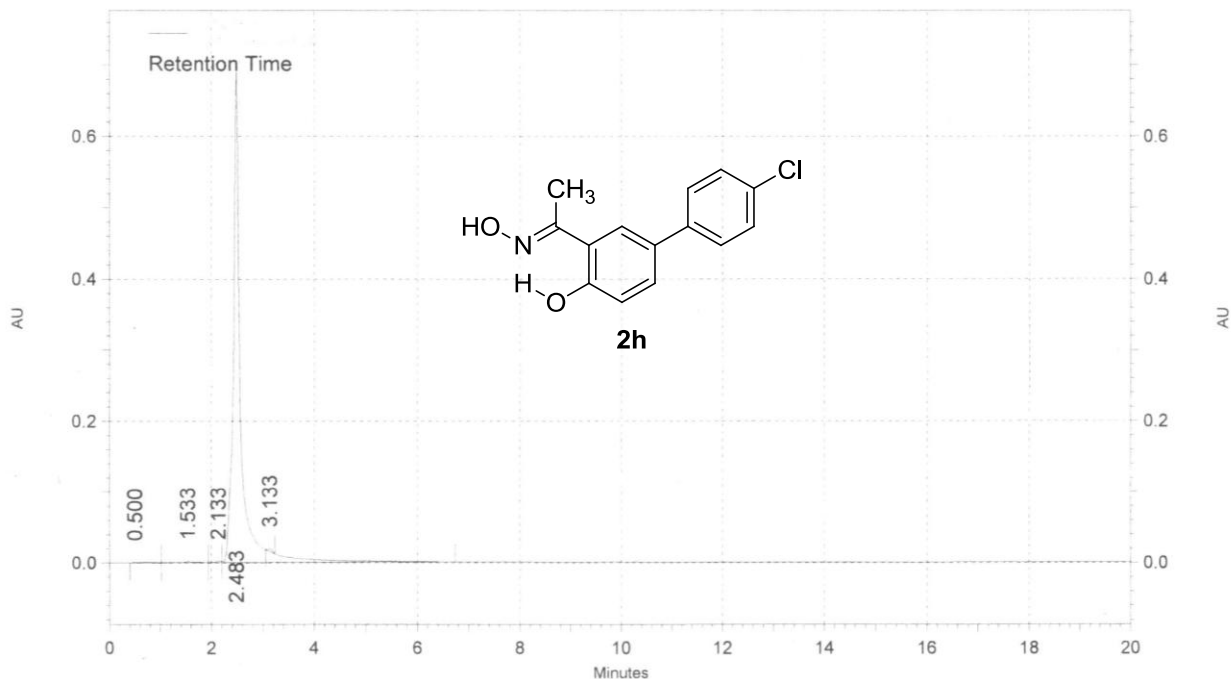
Q-tof UE521
 1: TOF MS ES+
 3.54e+003



Minimum: -1.5
 Maximum: 5.0 10.0 600.0

Mass	Calc. Mass	mDa	PPM	DBE	i-FIT	Formula
246.0931	246.0930	0.1	0.4	8.5	2.0	C14 H13 N O2 F

Data File: D:\32Karat\Projects\HPLC\Data\2012\novembre\28-11-12\IP17_254_70-30.dat
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 Acquisito: 11/28/2012 9:30:03 AM
 Stampato: 12/05/2012 08:32:01 AM



Det 166 Results

Nome	Migration Time	Area %	Area
	0.500	0.27	18862
	1.533	0.38	26858
	2.133	0.26	18524
	2.483	98.79	6999710
	3.133	0.31	21749
Totals			7085703

Elemental Composition Report

Single Mass Analysis

Tolerance = 10.0 PPM / DBE: min = -1.5, max = 600.0
 Element prediction: Off
 Number of isotope peaks used for i-FIT = 3

Monoisotopic Mass, Even Electron Ions

121 formula(e) evaluated with 1 results within limits (all results (up to 1000) for each mass)

Elements Used:

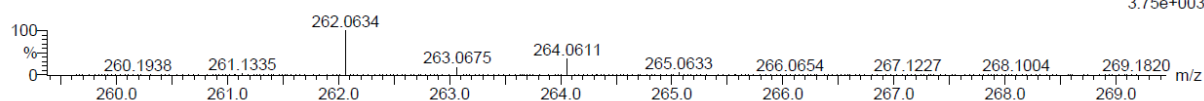
C: 0-120 H: 0-180 N: 0-5 O: 0-6 Cl: 1-1

Kim, Sung Hoon, IP17

University of Illinois, SCS, Mass Spectrometry Lab

Qtof_54241 50 (3.739) AM (Cen,3, 80.00, Ar,15000.0,558.36,0.70,LS 3); Sm (SG, 2x5.00); Cm (50:52)

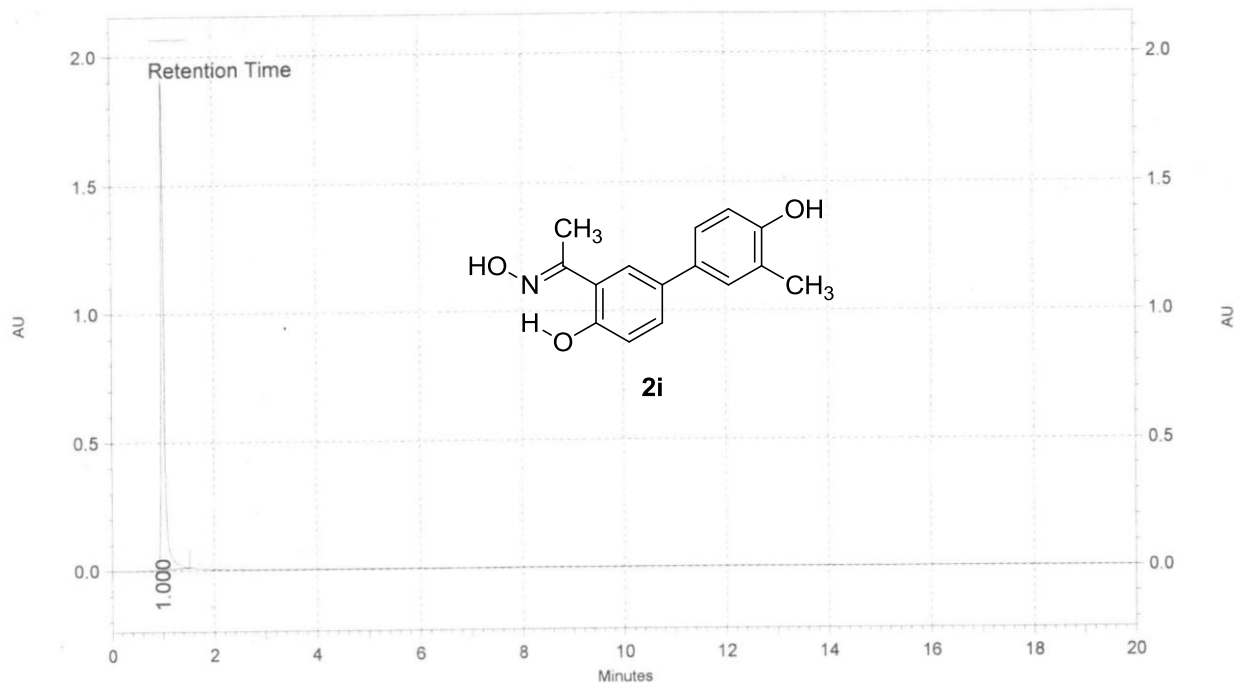
Q-tof UE521
 1: TOF MS ES+
 3.75e+003



Minimum: -1.5
 Maximum: 5.0 10.0 600.0

Mass	Calc. Mass	mDa	PPM	DBE	i-FIT	Formula
262.0634	262.0635	-0.1	-0.4	8.5	2.7	C14 H13 N O2 Cl

Data File: D:\32Karat\Projects\HPLC\Data\2012\novembre\28-11-12\IP31_254_70-30.dat
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 Acquisito: 11/28/2012 12:23:24 PM
 Stampato: 12/04/2012 02:07:24 PM



Det 166 Results

Nome	Migration Time	Area %	Area
	1.000	100.00	8039637
Totals			8039637

Elemental Composition Report

Page 1

Single Mass Analysis

Tolerance = 10.0 PPM / DBE: min = -1.5, max = 600.0

Element prediction: Off

Number of isotope peaks used for i-FIT = 3

Monoisotopic Mass, Even Electron Ions

136 formula(e) evaluated with 1 results within limits (all results (up to 1000) for each mass)

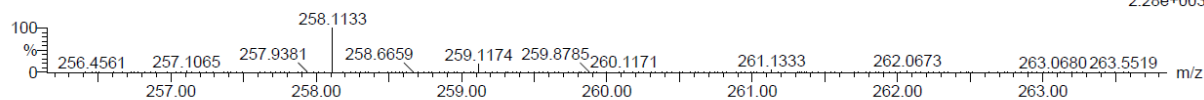
Elements Used:

C: 0-120 H: 0-180 N: 0-5 O: 0-6

Kim, Sung Hoon, IP31

University of Illinois, SCS, Mass Spectrometry Lab

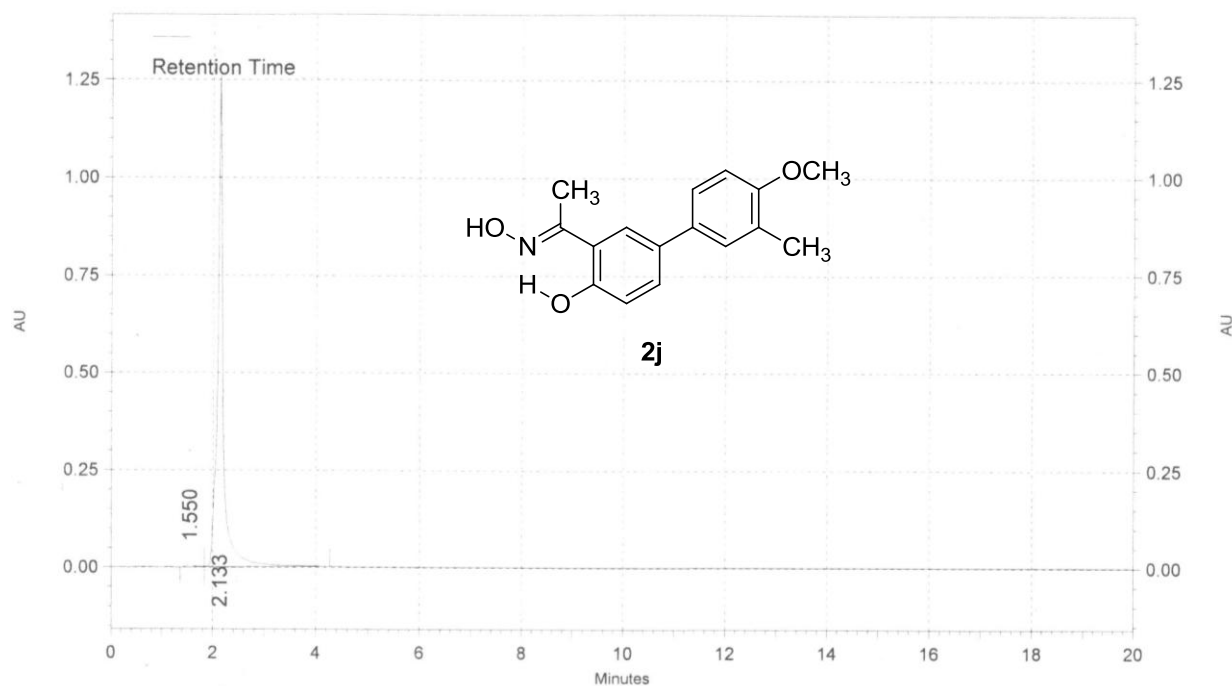
Qtof_54245 52 (3.888) AM (Cen,3, 80.00, Ar,15000.0,558.36,0.70,LS 3); Sm (SG, 2x5.00); Cm (52:54)

Q-tof UE521
1: TOF MS ES+
2.28e+003

Minimum: -1.5
 Maximum: 600.0

Mass	Calc. Mass	mDa	PPM	DBE	i-FIT	Formula
258.1133	258.1130	0.3	1.2	8.5	1.2	C15 H16 N O3

Data File: D:\32Karat\Projects\HPLC\Data\2012\novembre\27-11-12\IP21_254.dat
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 Stampato: 12/05/2012 08:55:04 AM



Det 166 Results

Nome	Migration Time	Area %	Area
	1.550	0.83	80407
	2.133	99.17	9651676
Totals			
		100.00	9732083

Elemental Composition Report

Page 1

Single Mass Analysis

Tolerance = 10.0 PPM / DBE: min = -1.5, max = 600.0

Element prediction: Off

Number of isotope peaks used for i-FIT = 3

Monoisotopic Mass, Even Electron Ions

143 formula(e) evaluated with 1 results within limits (all results (up to 1000) for each mass)

Elements Used:

C: 0-120 H: 0-180 N: 0-5 O: 0-6

Kim, Sung Hoon, IP21

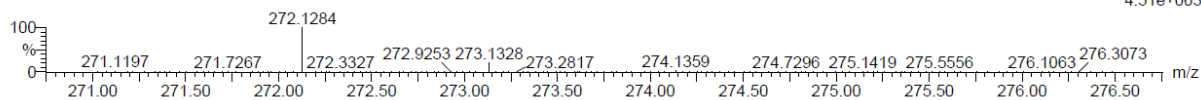
University of Illinois, SCS, Mass Spectrometry Lab

Qtof_54242 49 (3.663) AM (Cen,3, 80.00, Ar,15000.0,558.36,0.70,LS 3); Sm (SG, 2x5.00); Cm (49:50)

Q-tof UE521

1: TOF MS ES+

4.51e+003



Minimum: -1.5
 Maximum: 5.0 10.0 600.0

Mass	Calc. Mass	mDa	PPM	DBE	i-FIT	Formula
272.1284	272.1287	-0.3	-1.1	8.5	9.0	C16 H18 N O3

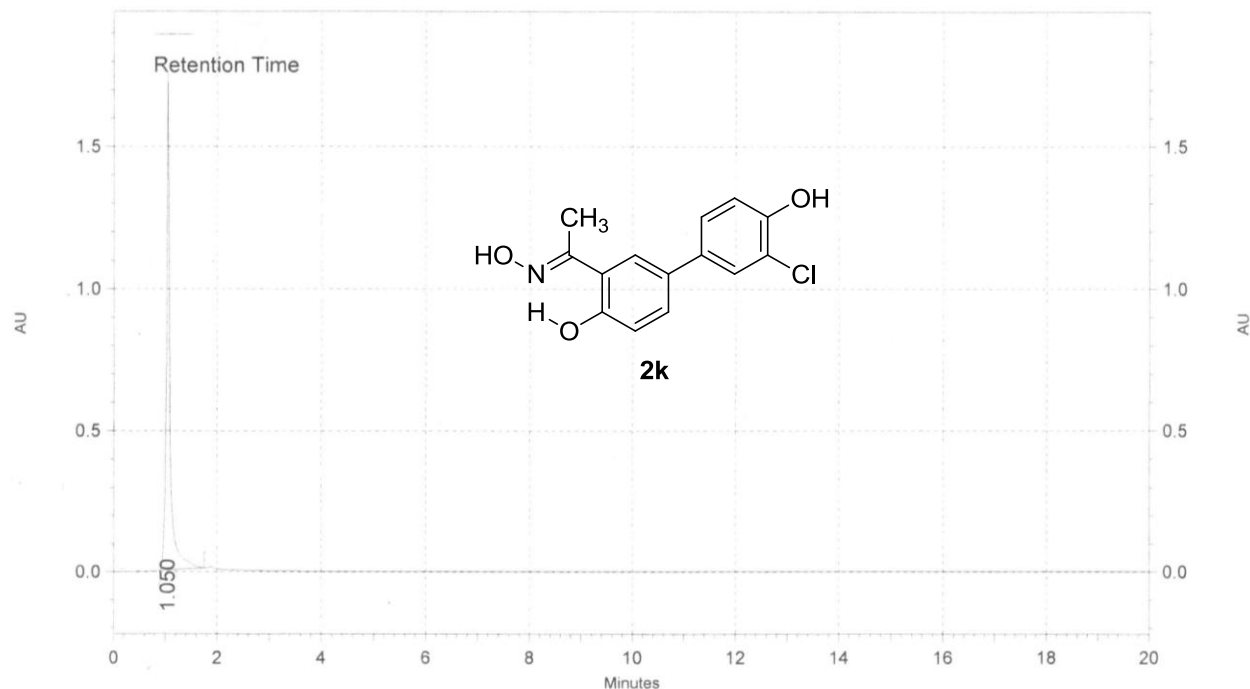
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Metodo:

D:\32Karat\Projects\HPLC\Method\tamp_amm_acetat-acetonitrile_1ml-min_254nm_da70-30a95-5.met

Acquisito: 11/30/2012 12:41:34 PM

Stampato: 12/04/2012 02:29:11 PM



Det 166 Results

Nome	Migration Time	Area %	Area
	1.050	100.00	8527657
Totals			
		100.00	8527657

Elemental Composition Report

Page 1

Single Mass Analysis

Tolerance = 10.0 PPM / DBE: min = -1.5, max = 600.0

Element prediction: Off

Number of isotope peaks used for i-FIT = 3

Monoisotopic Mass, Even Electron Ions

129 formula(e) evaluated with 1 results within limits (all results (up to 1000) for each mass)

Elements Used:

C: 0-120 H: 0-180 N: 0-5 O: 0-6 Cl: 1-1

Kim, Sung Hoon, IP32

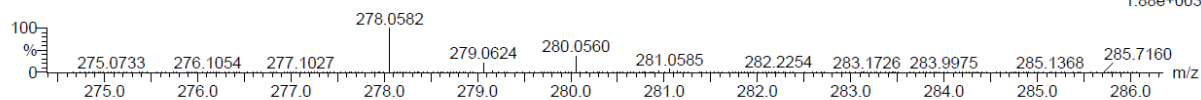
University of Illinois, SCS, Mass Spectrometry Lab

Qtof_54246 41 (3.065) AM (Cen,3, 80.00, Ar,15000.0,558.36,0.70,LS 3); Sm (SG, 2x5.00); Cm (41:42)

Q-tof UE521

1: TOF MS ES+

1.88e+003



Minimum: -1.5
 Maximum: 5.0 10.0 600.0

Mass	Calc. Mass	mDa	PPM	DBE	i-FIT	Formula
278.0582	278.0584	-0.2	-0.7	8.5	11.6	C14 H13 N O3 Cl

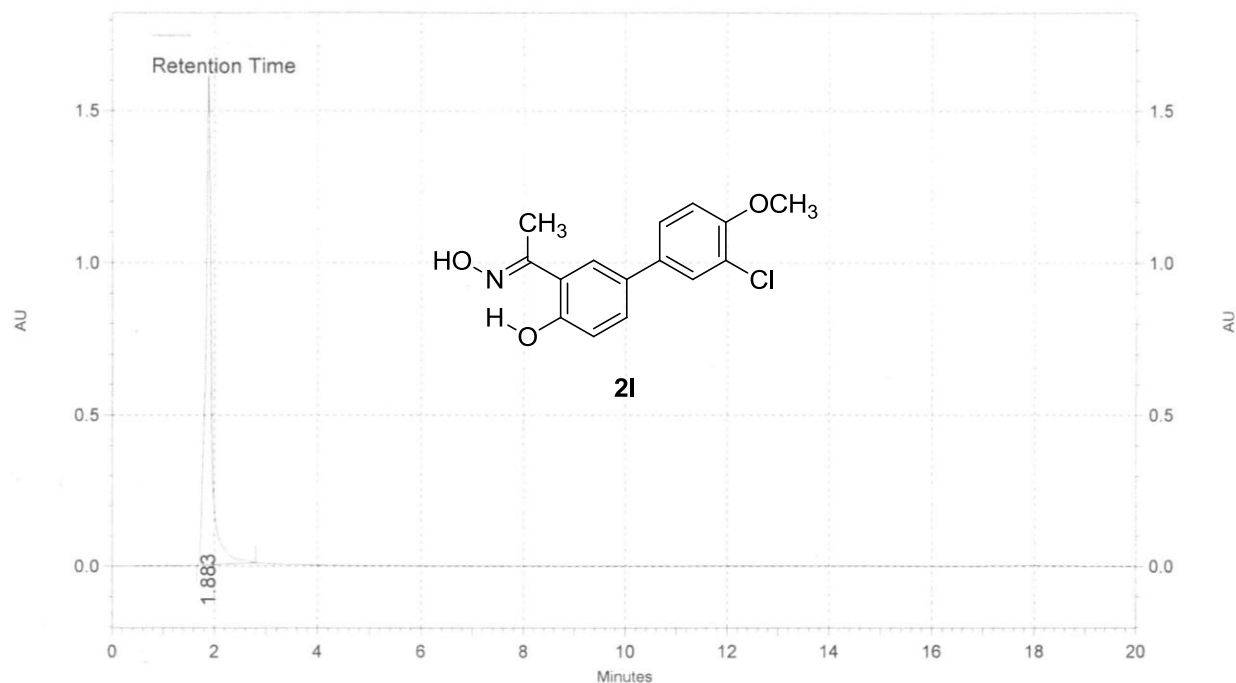
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Metodo:

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Acquisito: 11/30/2012 11:37:45 AM

Stampato: 12/04/2012 02:27:49 PM



Det 166 Results

Nome	Migration Time	Area %	Area
	1.883	100.00	13021334
Totals			
		100.00	13021334

Elemental Composition Report

Page 1

Single Mass Analysis

Tolerance = 10.0 PPM / DBE: min = -1.5, max = 600.0

Element prediction: Off

Number of isotope peaks used for i-FIT = 3

Monoisotopic Mass, Even Electron Ions

136 formula(e) evaluated with 1 results within limits (all results (up to 1000) for each mass)

Elements Used:

C: 0-120 H: 0-180 N: 0-5 O: 0-6 Cl: 1-1

Kim, Sung Hoon, IP22

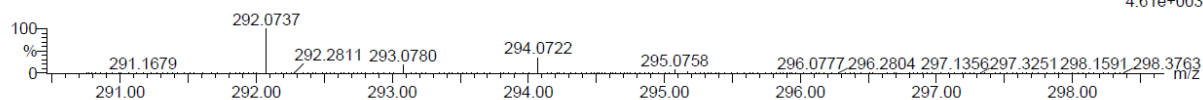
University of Illinois, SCS, Mass Spectrometry Lab

Qtot_54244 50 (3.738) AM (Cen,3, 80.00, Ar,15000.0,558.36,0.70,LS 3); Sm (SG, 2x5.00); Cm (50:52)

Q-tof UE521

1: TOF MS ES+

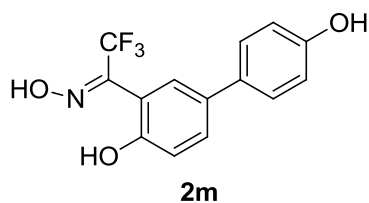
4.61e+003



Minimum:

Maximum: 5.0 10.0 -1.5 600.0

Mass	Calc. Mass	mDa	PPM	DBE	i-FIT	Formula
292.0737	292.0740	-0.3	-1.0	8.5	0.3	C15 H15 N O3 Cl



Elemental Composition Report

Page 1

Single Mass Analysis

Tolerance = 10.0 PPM / DBE: min = -1.5, max = 600.0

Element prediction: Off

Number of isotope peaks used for i-FIT = 3

Monoisotopic Mass, Even Electron Ions

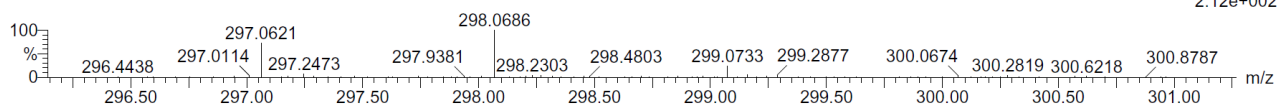
140 formula(e) evaluated with 1 results within limits (all results (up to 1000) for each mass)

Elements Used:

C: 0-120 H: 0-180 N: 0-6 O: 0-6 F: 3-3

Kim, Sung Hoon, 10-10-2014-BL-29_Fillipo_HRMS University of Illinois, SCS, Mass Spectrometry Lab
 Qtof_55319a 30 (2.252) AM (Cen,3, 80.00, Ar,15000.0,716.46,0.70,LS 3); Sm (SG, 2x5.00); Cm (30)

Q-tof UE521
 1: TOF MS ES+
 2.12e+002



Minimum: -1.5
 Maximum: 5.0 10.0 600.0

Mass	Calc. Mass	mDa	PPM	DBE	i-FIT	Formula
298.0686	298.0691	-0.5	-1.7	8.5	2.9	C14 H11 N O3 F3

Analytical data on intermediate compounds

1-(6-Hydroxy-3-(4-methoxyphenyl)phenyl)ethanone (5e). (58% yield from **3**) ^1H NMR (CDCl_3) δ (ppm): 2.69 (s, 3H), 3.86 (s, 3H), 6.99 (AA'XX', 2H, $J_{AX} = 8.4$ Hz, $J_{AA'/XX'} = 2.2$ Hz), 7.05 (d, 1H, $J = 8.4$ Hz), 7.46 (AA'XX', 2H, $J_{AX} = 8.4$ Hz, $J_{AA'/XX'} = 2.2$ Hz), 7.66 (dd, 1H, $J = 8.4, 3.0$ Hz), 7.86 (d, 1H, $J = 3.0$ Hz), 12.23 (*exchangeable* s, 1H).

1-(6-Hydroxy-3-(3-fluoro-4-methoxyphenyl)phenyl)ethanone (5f). (66% yield from **3**) ^1H NMR (CDCl_3) δ (ppm): 2.70 (s, 3H), 3.94 (s, 3H), 6.99-7.09 (m, 2H), 7.22-7.31 (m, 2H), 7.65 (dd, 1H, $J = 8.4, 2.4$ Hz), 7.84 (d, 1H, $J = 2.4$ Hz), 12.26 (*exchangeable* s, 1H).

1-(6-Hydroxy-3-(4-fluorophenyl)phenyl)ethanone (5g). (55% yield from **3**) ^1H NMR (CDCl_3) δ (ppm): 2.70 (s, 3H), 7.06 (d, 1H, $J = 8.8$ Hz), 7.14 (double AA'XX', 2H, $^3J_{\text{HF-o}} = 9.0$ Hz, $J_{AX} = 8.8$ Hz, $J_{AA'/XX'} = 2.6$ Hz), 7.49 (double AA'XX', 2H, $^4J_{\text{HF-m}} = 5.6$ Hz, $J_{AX} = 8.8$ Hz, $J_{AA'/XX'} = 2.6$ Hz), 7.66 (dd, 1H, $J = 8.8, 2.4$ Hz), 7.86 (d, 1H, $J = 2.4$ Hz), 12.27 (*exchangeable* s, 1H).

1-(6-Hydroxy-3-(4-chlorophenyl)phenyl)ethanone (5h). (53% yield from **3**) ^1H NMR (CDCl_3) δ (ppm): 2.70 (s, 3H), 7.07 (d, 1H, $J = 8.8$ Hz), 7.38-7.50 (m, 4H), 7.67 (dd, 1H, $J = 8.8, 2.4$ Hz), 7.88 (d, 1H, $J = 2.4$ Hz), 12.29 (*exchangeable* s, 1H).

1-(6-Hydroxy-3-(3-methyl-4-methoxyphenyl)phenyl)ethanone (5j). (72% yield from **3**) ^1H NMR (CDCl_3) δ (ppm): 2.30 (s, 3H), 2.70 (s, 3H), 3.88 (s, 3H), 6.88-6.92 (m, 1H), 7.04 (d, 1H, $J = 8.4$ Hz), 7.26-7.35 (m, 2H), 7.67 (dd, 1H, $J = 8.4, 2.6$ Hz), 7.85 (d, 1H, $J = 2.6$ Hz), 12.22 (*exchangeable* s, 1H).

1-(6-Hydroxy-3-(3-chloro-4-methoxyphenyl)phenyl)ethanone (5l). (59% yield from **3**) ^1H NMR (CDCl_3) δ (ppm): 2.70 (s, 3H), 3.95 (s, 3H), 7.00 (d, 1H, $J = 8.8$ Hz), 7.05 (d, 1H, $J = 8.4$ Hz), 7.38 (dd, 1H, $J = 8.8, 2.4$ Hz), 7.55 (d, 1H, $J = 2.8$ Hz), 7.65 (dd, 1H, $J = 8.6, 2.8$ Hz), 7.83 (d, 1H, $J = 2.4$ Hz), 12.26 (*exchangeable* s, 1H).

1-(6-Hydroxy-3-(4-methoxyphenyl)phenyl)propan-1-one (6). (58% yield from **4**) ^1H NMR (CDCl_3) δ (ppm): 1.27 (t, 3H, $J = 7.6$ Hz), 3.11 (q, 2H, $J = 7.6$ Hz), 3.86 (s, 3H), 6.98 (AA'XX', 2H, $J_{AX} = 8.8$ Hz, $J_{AA'XX'} = 2.8$ Hz), 7.04 (d, 1H, $J = 8.4$ Hz), 7.46 (AA'XX', 2H, $J_{AX} = 8.6$ Hz, $J_{AA'XX'} = 2.4$ Hz), 7.64 (dd, 1H, $J = 8.4, 2.8$ Hz), 7.89 (d, 1H, $J = 2.8$ Hz), 12.32 (*exchangeable s*, 1H).

1-(6-Hydroxy-3-(3-fluoro-4-methoxyphenyl)phenyl)propan-1-one (7). (76% yield from **4**) ^1H NMR (CDCl_3) δ (ppm): 1.27 (t, 3H, $J = 7.2$ Hz), 3.11 (q, 2H, $J = 7.3$ Hz), 3.94 (s, 3H), 6.99-7.07 (m, 2H), 7.20-7.30 (m, 2H), 7.62 (dd, 1H, $J = 8.6, 2.4$ Hz), 7.88 (d, 1H, $J = 2.4$ Hz), 12.34 (*exchangeable s*, 1H).

1-(6-Methoxy-3-(4-methoxyphenyl)phenyl)-2,2,2-trifluoroethanone (12). (84% yield from **11**) ^1H NMR (CDCl_3) δ (ppm): 3.85 (s, 3H), 3.95 (s, 3H), 6.98 (AA'XX', 2H, $J_{AX} = 9.0$ Hz, $J_{AA'XX'} = 2.2$ Hz), 7.06 (d, 1H, $J = 8.6$ Hz), 7.47 (AA'XX', 2H, $J_{AX} = 9.0$ Hz, $J_{AA'XX'} = 2.5$ Hz), 7.76 (dd, 1H, $J = 8.8, 2.2$ Hz), 7.83 (d, 1H, $J = 2.2$ Hz).

1-(6-Hydroxy-3-(4-hydroxyphenyl)phenyl)ethanone (8a). (75% yield from **5e**) ^1H NMR (CDCl_3) δ (ppm): 2.69 (s, 3H), 6.92 (AA'XX', 2H, $J_{AX} = 8.4$ Hz, $J_{AA'XX'} = 3.2$ Hz), 7.05 (d, 1H, $J = 9.2$ Hz), 7.40 (AA'XX', 2H, $J_{AX} = 8.4$ Hz, $J_{AA'XX'} = 3.2$ Hz), 7.66 (dd, 1H, $J = 2.2, 9.2$ Hz), 7.85 (d, 1H, $J = 2.2$ Hz), 12.23 (*exchangeable s*, 1H).

1-(6-Hydroxy-3-(4-hydroxyphenyl)phenyl)propan-1-one (8b). (80% yield from **6**) ^1H NMR (CDCl_3) δ (ppm): 1.26 (t, 3H, $J = 7.0$ Hz), 3.11 (q, 2H, $J = 7.0$ Hz), 6.92 (AA'XX', 2H, $J_{AX} = 8.2$ Hz, $J_{AA'XX'} = 3.0$ Hz), 7.03 (d, 1H, $J = 8.8$ Hz), 7.40 (AA'XX', 2H, $J_{AX} = 8.2$ Hz, $J_{AA'XX'} = 2.8$ Hz), 7.64 (dd, 1H, $J = 8.8, 2.4$ Hz), 7.88 (d, 1H, $J = 2.4$ Hz), 8.02 (*exchangeable bs*, 1H), 12.31 (*exchangeable s*, 1H).

1-(6-Hydroxy-3-(3-fluoro-4-hydroxyphenyl)phenyl)ethanone (8c). (86% yield from **5f**) ^1H NMR (CDCl_3) δ (ppm): 2.70 (s, 3H), 5.22 (*exchangeable bs*, 1H), 7.03-7.12 (m, 2H), 7.19-7.30 (m, 2H), 7.64 (dd, 1H, $J = 8.8, 2.4$ Hz), 7.83 (d, 1H, $J = 2.4$ Hz), 12.25 (*exchangeable s*, 1H).

1-(6-Hydroxy-3-(3-fluoro-4-hydroxyphenyl)phenyl)propan-1-one (8d). (76% yield from **7**) ^1H NMR (CDCl_3) δ (ppm): 1.27 (t, 3H, $J = 7.2$ Hz), 3.11 (q, 2H, $J = 7.2$ Hz), 5.20 (*exchangeable* bs, 1H), 7.03-7.12 (m, 2H), 7.18-7.29 (m, 2H), 7.62 (dd, 1H, $J = 8.8, 2.4$ Hz), 7.87 (d, 1H, $J = 2.4$ Hz), 12.35 (*exchangeable* s, 1H).

1-(6-Hydroxy-3-(3-methyl-4-hydroxyphenyl)phenyl)ethanone (8i). (82% yield from **5j**) ^1H NMR (CDCl_3) δ (ppm): 2.32 (s, 3H), 2.69 (s, 3H), 4.90 (*exchangeable* bs, 1H), 6.85 (d, 1H, $J = 7.4$ Hz), 7.02 (d, 1H, $J = 7.6$ Hz), 7.20-7.29 (m, 2H), 7.64 (dd, 1H, $J = 7.6, 2.0$ Hz), 7.84 (d, 1H, $J = 2.0$ Hz), 12.22 (*exchangeable* s, 1H).

1-(6-Hydroxy-3-(3-chloro-4-hydroxyphenyl)phenyl)ethanone (8k). (66% yield from **5l**) ^1H NMR (CDCl_3) δ (ppm): 2.70 (s, 3H), 5.58 (*exchangeable* s, 1H), 7.05 (d, 1H, $J = 8.6$ Hz), 7.10 (d, 1H, $J = 8.2$ Hz), 7.35 (dd, 1H, $J = 8.4, 2.4$ Hz), 7.49 (d, 1H, $J = 2.8$ Hz), 7.63 (dd, 1H, $J = 8.6, 2.8$ Hz), 7.82 (d, 1H, $J = 2.4$ Hz), 12.26 (*exchangeable* s, 1H).

1-(6-Hydroxy-3-(4-hydroxyphenyl)phenyl)-2,2,2-trifluoroethanone (13). (52% yield from **12**) ^1H NMR (CDCl_3) δ (ppm): 5.19 (*exchangeable* s, 1H), 6.93 (AA'XX', 2H, $J_{AX} = 8.2$ Hz, $J_{AA'/XX'} = 2.3$ Hz), 7.15 (d, 1H, $J = 8.8$ Hz), 7.40 (AA'XX', 2H, $J_{AX} = 8.2$ Hz, $J_{AA'/XX'} = 2.3$ Hz), 7.81 (dd, 1H, $J = 8.8, 2.4$ Hz), 7.92 (quintet, 1H, $J = 2.2$ Hz), 11.03 (*exchangeable* s, 1H).

Table S1. Body weight vs. treatment time of animals treated with **1**, **2a**, or **2c**.

Compound	Animal weight (grams) after time (days) ^a		
	0	7	14
1	23.22 ± 1.75	25.14 ± 1.94	24.78 ± 1.74
2a	24.08 ± 2.48	25.95 ± 2.68	26.25 ± 2.80
2c	23.06 ± 2.32	25.18 ± 2.46	24.90 ± 2.23

^aAverage of ≥ 4 mice ± SD