Electronic Supplementary Material (ESI) for Organic and Biomolecular Chemistry

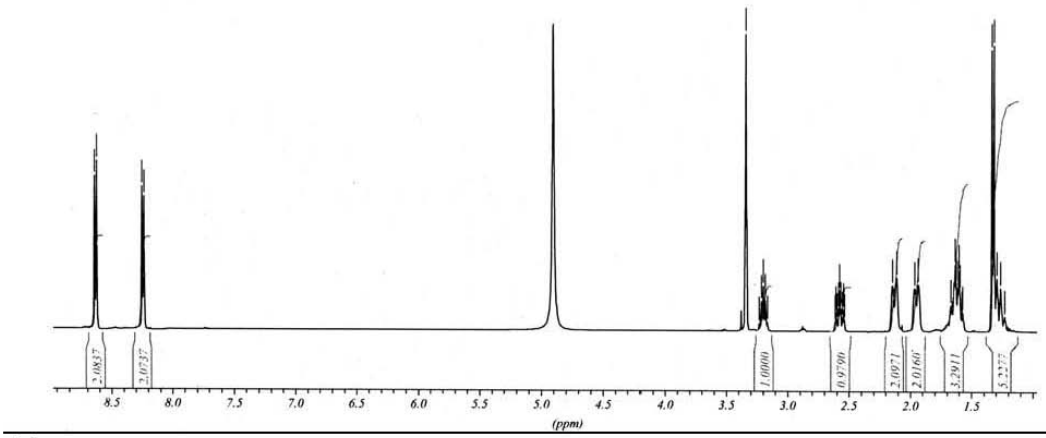
Supporting information

A practical synthesis of Rho-Kinase inhibitor Y-27632 and fluoro derivatives and their evaluation in human pluripotent stem cells

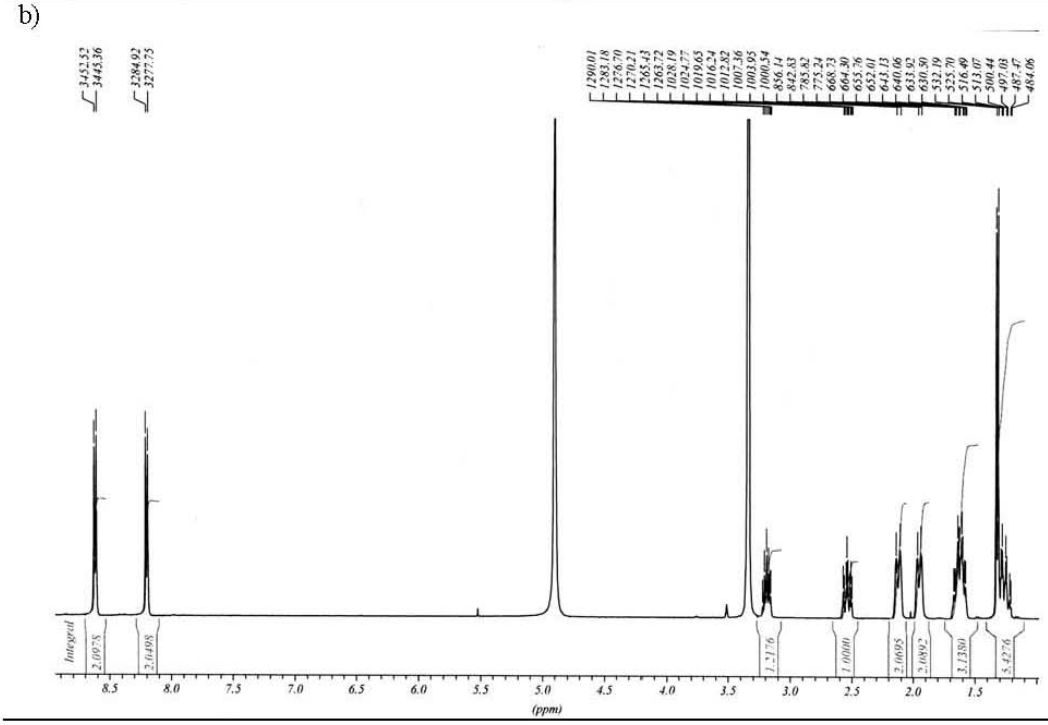
Jiří Paleček,[a] Robert Zweigert,[b] Ruth Olmer,[b] Ulrich Martin,[b] Andreas Kirschning,[a] Gerald Dräger*[a]*

^{1}H-NMR spectra of Rho-Kinase inhibitor (**1**): a) synthesized compound; b) authentic sample

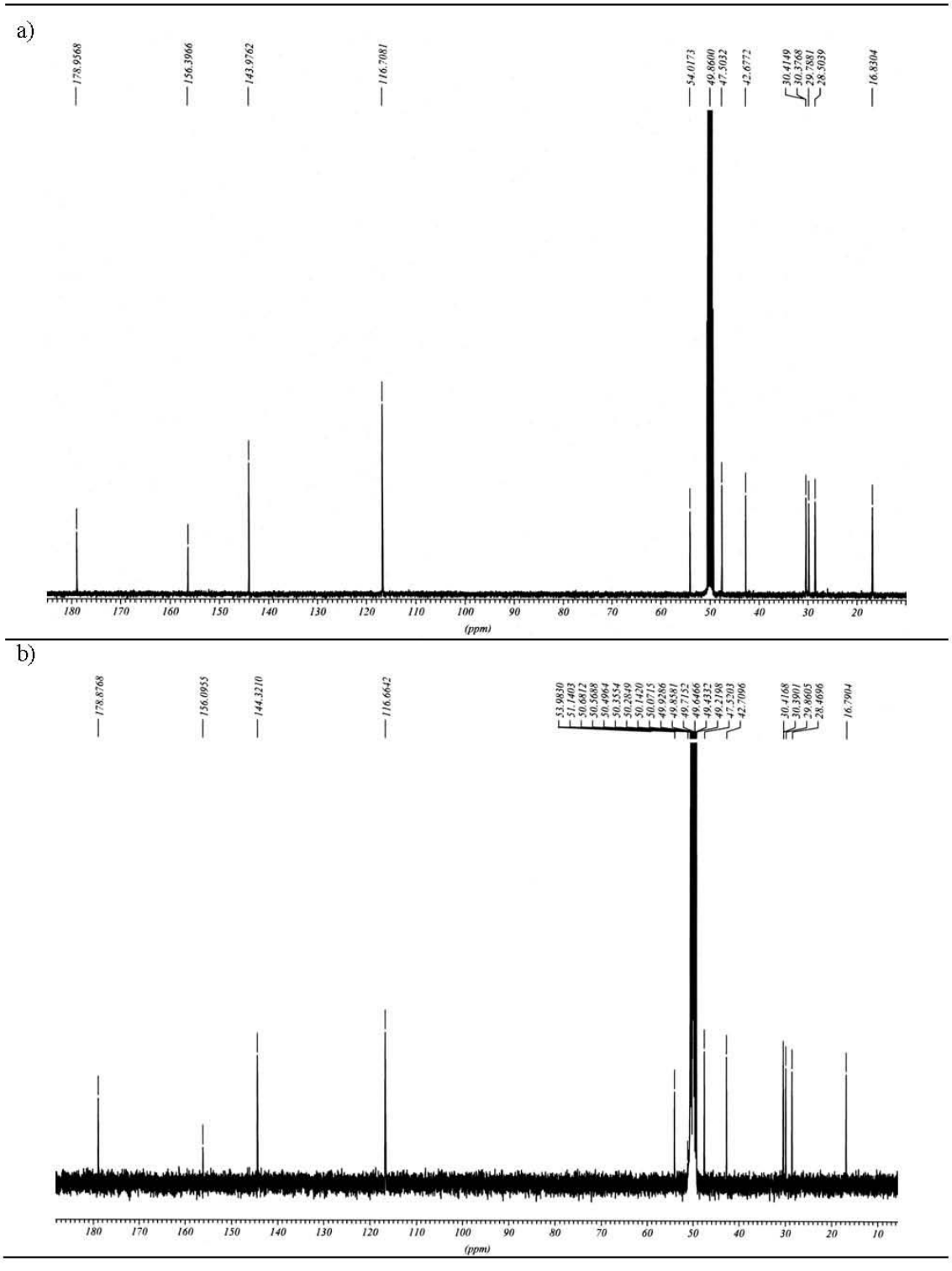
a)



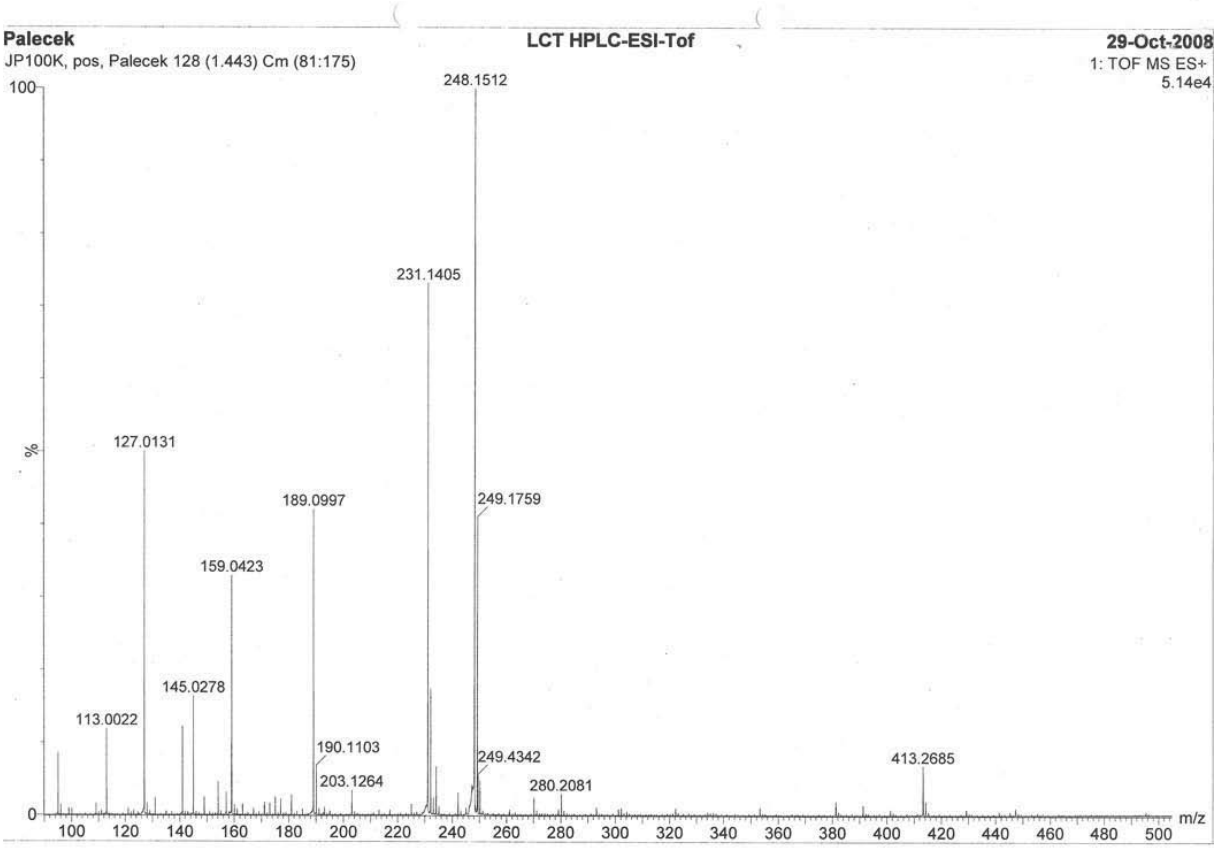
b)



^{13}C-NMR spectra of Rho-Kinase inhibitor (**1**): a) synthesized compound; b) authentic sample



MS spectra of Rho-Kinase inhibitor (**1**)

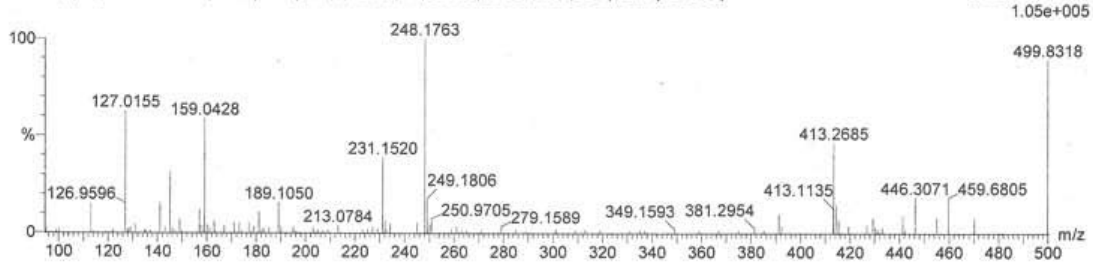


Elemental Composition Report **Page 1**

Single Mass Analysis
Tolerance = 20.0 PPM / DBE: min = -1.5, max = 50.0
Element prediction: Off
Number of isotope peaks used for i-FIT = 3

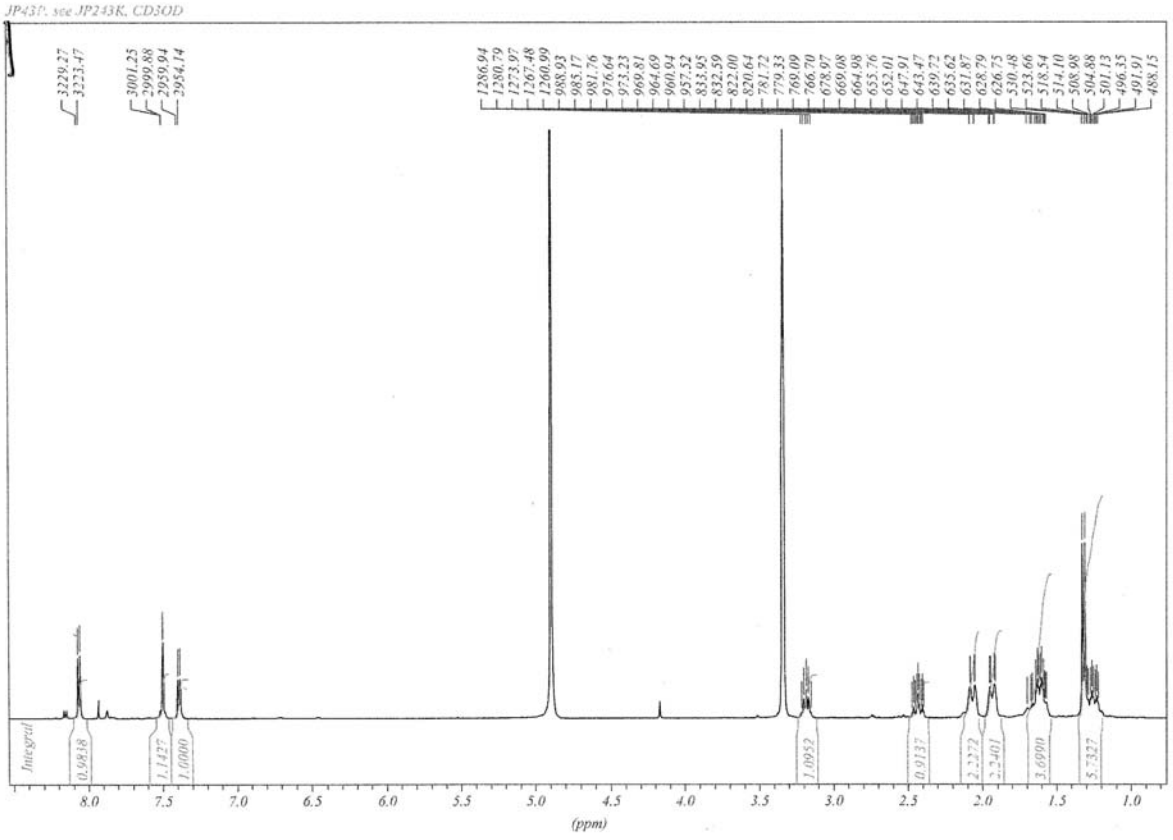
Monoisotopic Mass, Even Electron Ions
174 formula(e) evaluated with 2 results within limits (up to 50 closest results for each mass)
Elements Used:
C: 0-20 H: 0-30 N: 0-10 O: 0-5

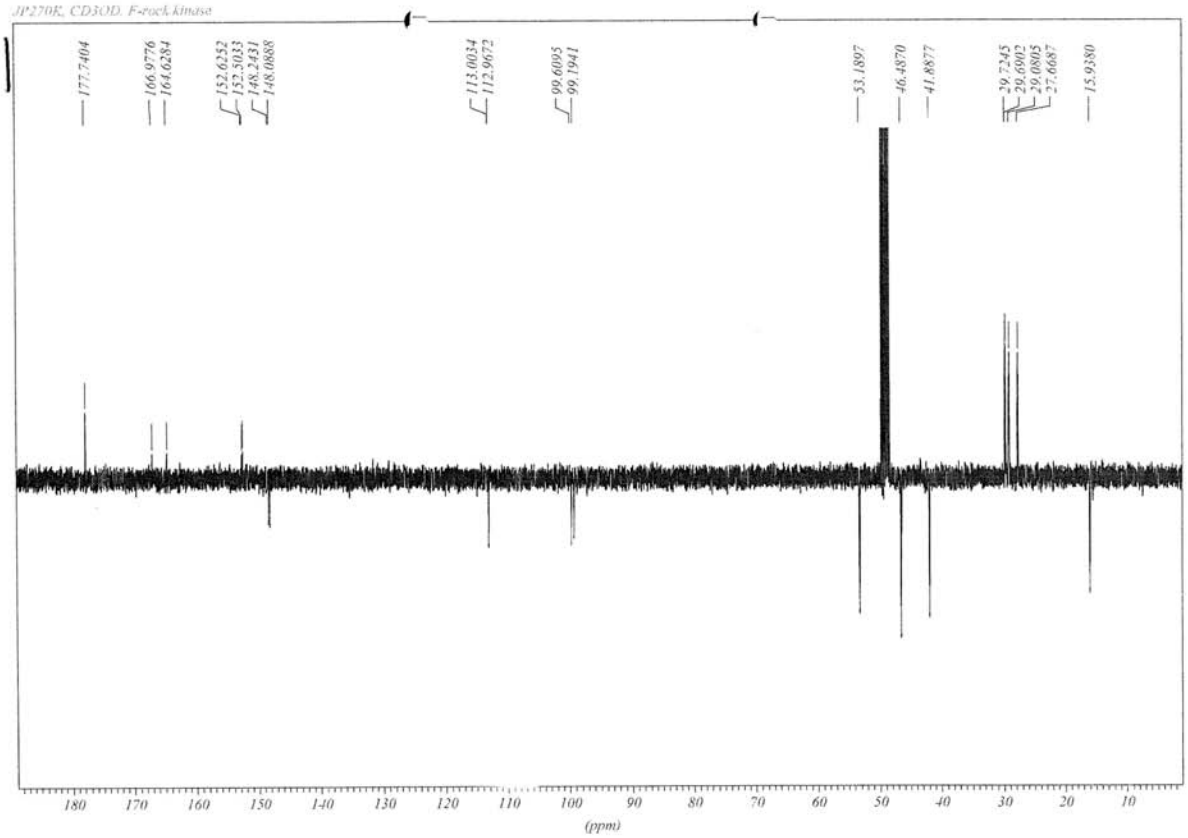
Palecek LCT HPLC-ESI-Tof 29-Oct-2008
JP100K, pos, Palecek 241 (2.723) AM (Cen,8, 65.00, Ar,5000.0,294.94,1.00,LS 8); Cm (231:258) 1: TOF MS ES+ 1.05e+005



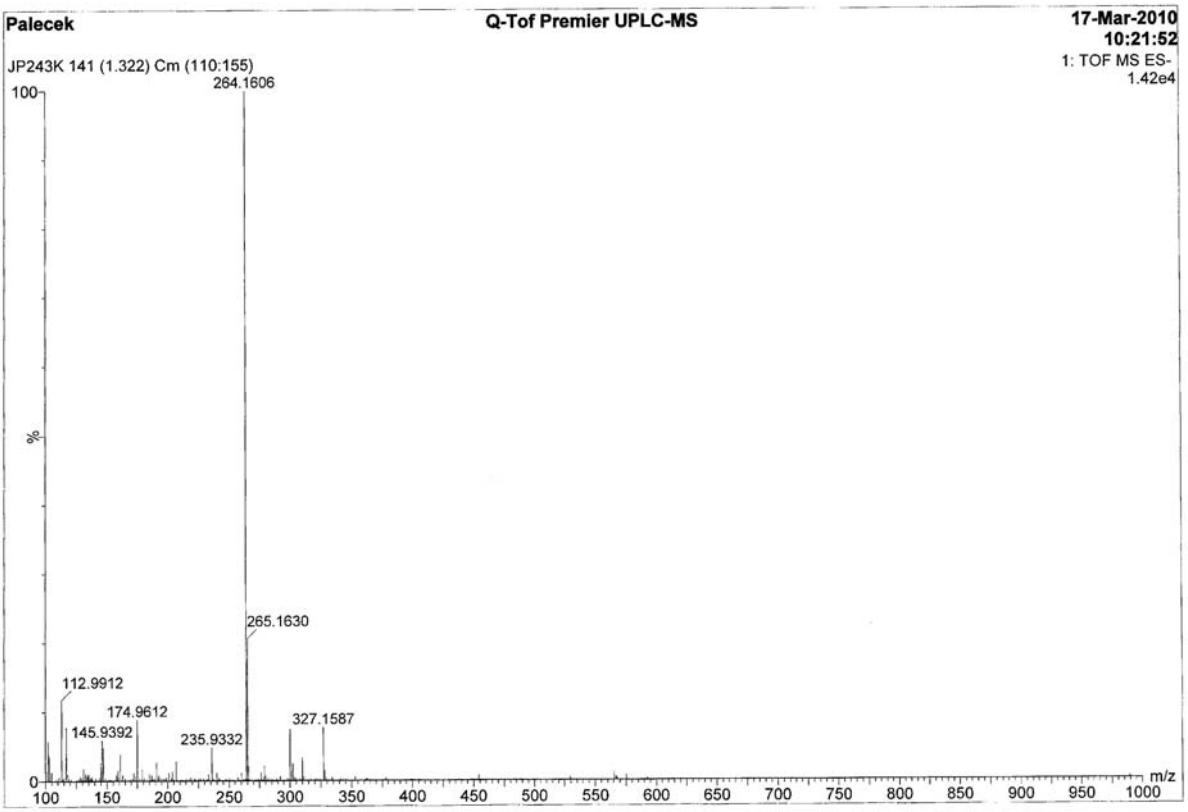
Minimum:				-1.5		
aximum:		5.0	20.0	50.0		
Mass	Calc. Mass	mDa	PPM	DBE	i-FIT	Formula
248.1763	248.1763	0.0	0.0	5.5	822.9	C14 H22 N3 O
	248.1723	4.0	16.1	1.5	1888.8	C9 H22 N5 O3

^{1}H- and ^{13}C-NMR spectra of (*R*)-*trans*-4-(1-aminoethyl)-*N*-(2-fluoro-4-pyridyl)-cyclohexanecarboxamide dihydrochloride (**10**)





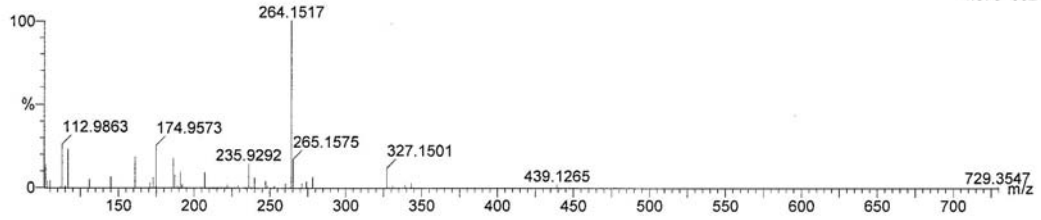
MS spectra of (*R*)-*trans*-4-(1-aminoethyl)-*N*-(2-fluoro-4-pyridyl)-cyclohexanecarboxamide dihydrochloride (**10**)



Elemental Composition Report **Page 1**

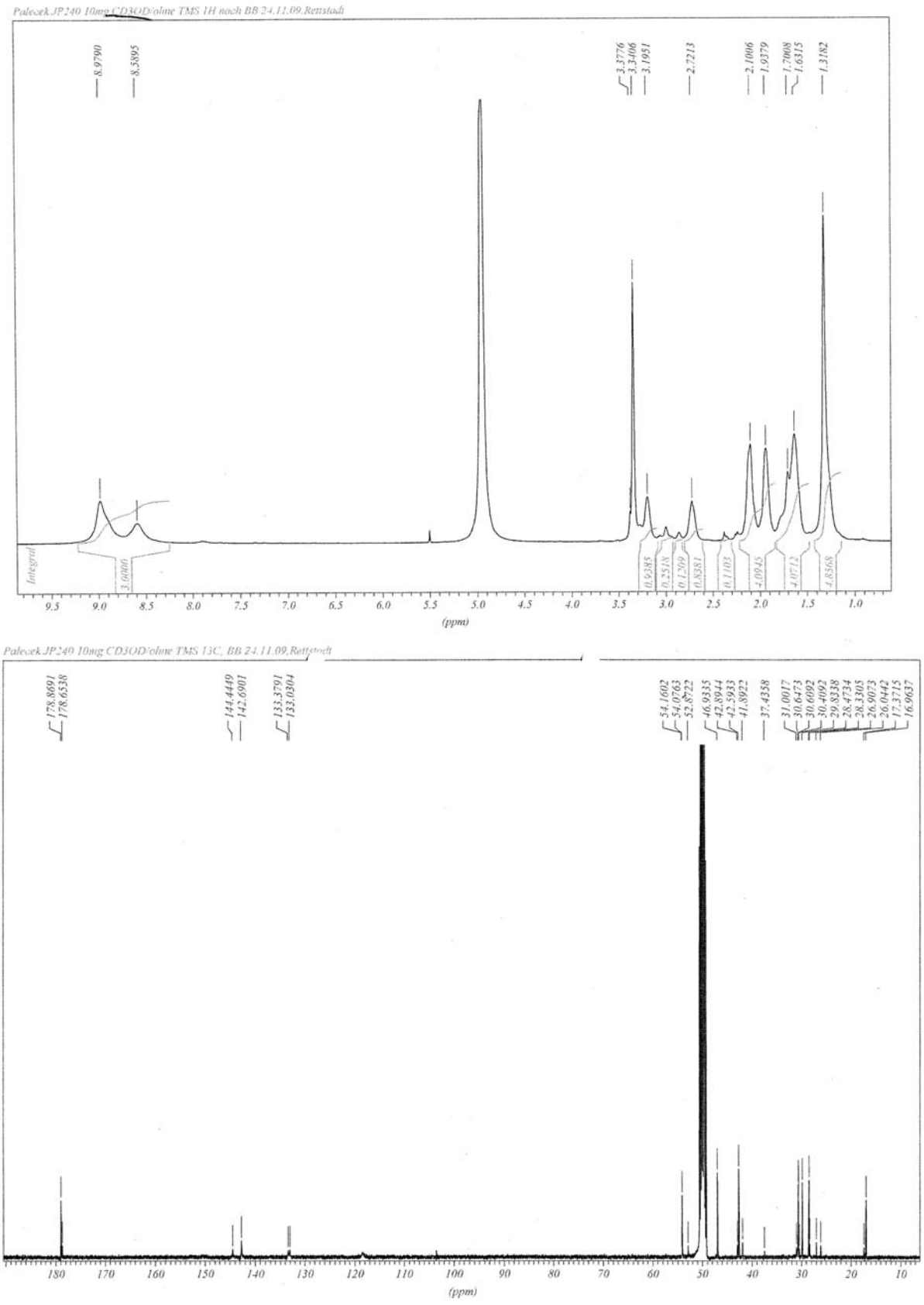
Single Mass Analysis
Tolerance = 6.0 mDa / DBE: min = -1.5, max = 50.0
Element prediction: Off
Number of isotope peaks used for i-FIT = 3

Monoisotopic Mass, Odd and Even Electron Ions
226 formula(e) evaluated with 8 results within limits (up to 30 closest results for each mass)
Elements Used:
C: 0-60 H: 0-90 N: 0-3 O: 0-8 F: 0-1

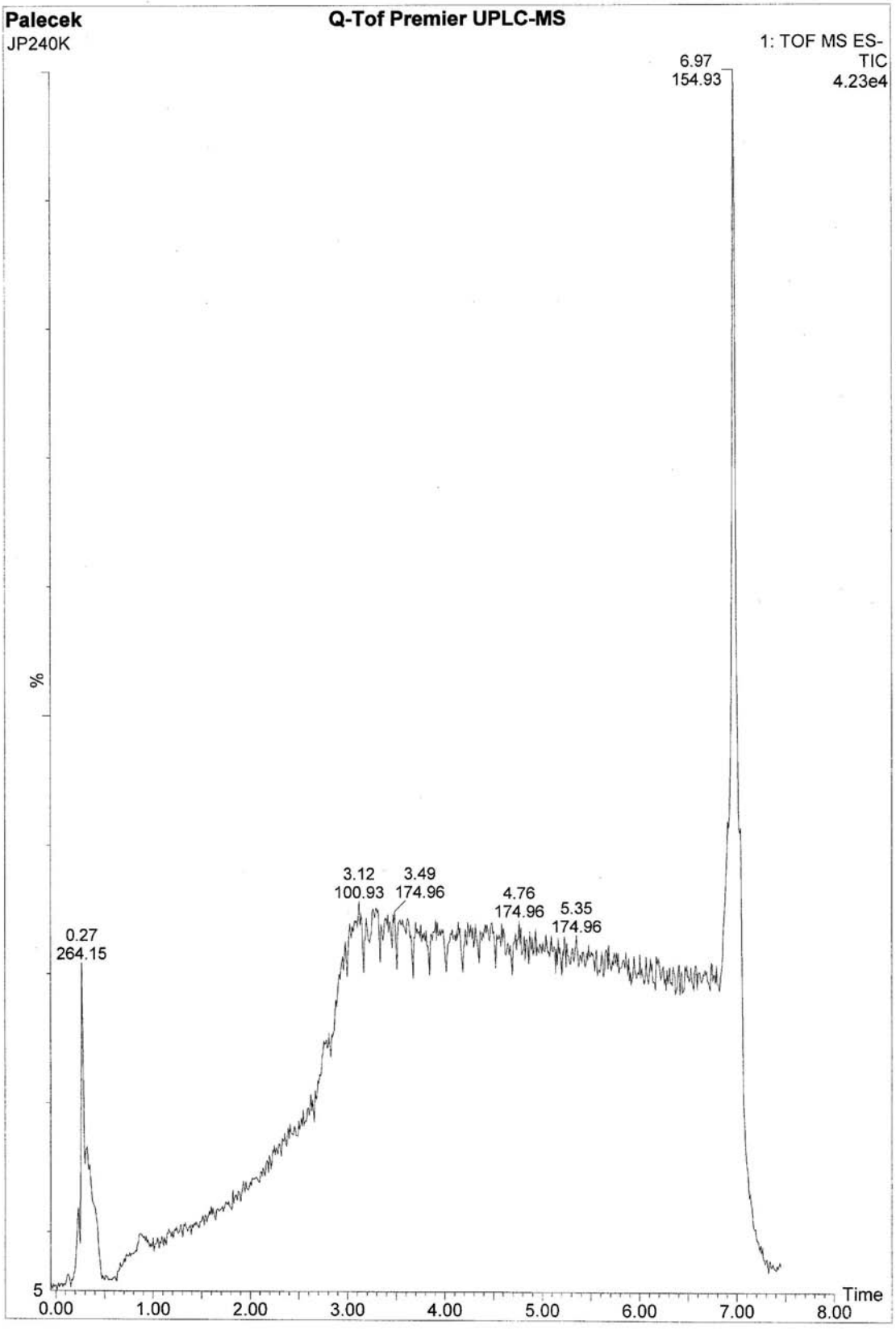


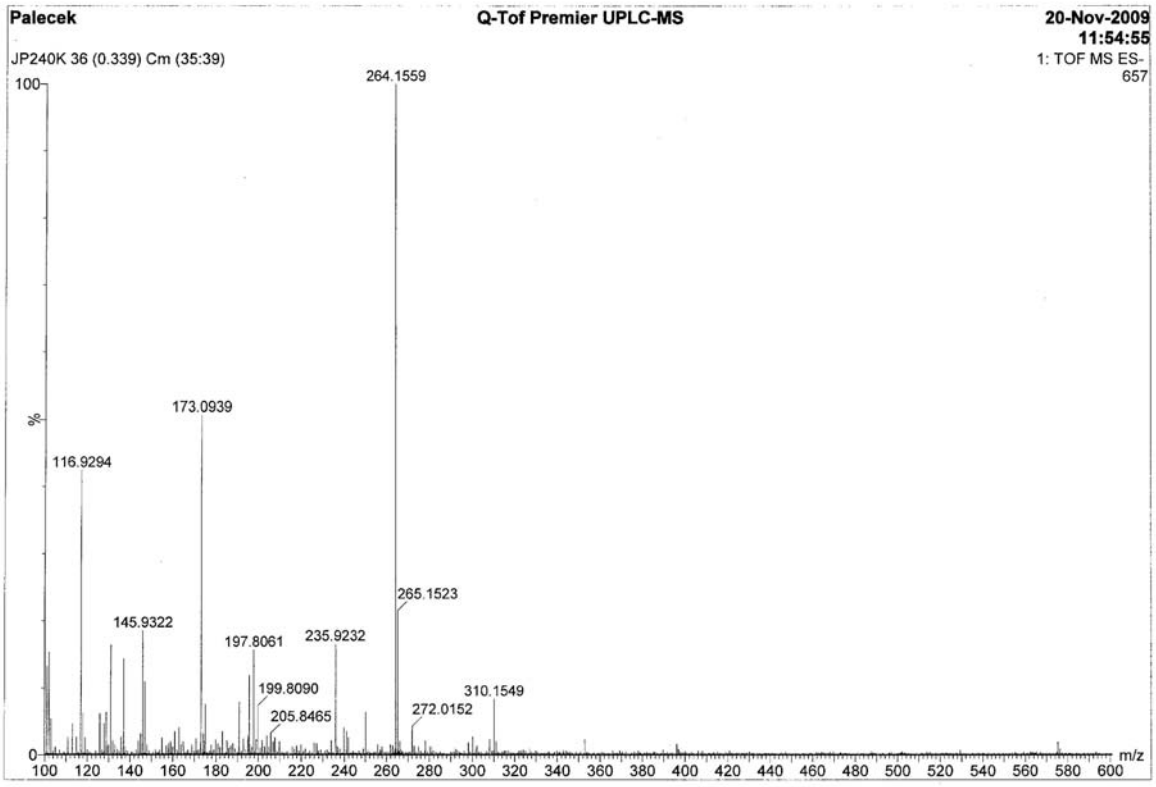
Minimum:				-1.5		
Maximum:		6.0	40.0	50.0		
Mass	Calc. Mass	mDa	PPM	DBE	i-FIT	Formula
264.1517	264.1514	0.3	1.1	10.0	n/a	C19 H20 O
	264.1512	0.5	1.9	6.5	n/a	C14 H19 N3 O F
	264.1526	-0.9	-3.4	6.0	n/a	C16 H21 O2 F
	264.1501	1.6	6.1	10.5	n/a	C17 H18 N3
	264.1485	3.2	12.1	2.0	n/a	C11 H21 N2 O4 F
	264.1559	-4.2	-15.9	1.5	n/a	C10 H22 N3 O5
	264.1474	4.3	16.3	6.0	n/a	C14 H20 N2 O3
	264.1573	-5.6	-21.2	1.0	n/a	C12 H24 O6

^{1}H- and ^{13}C-NMR spectra of (*R*)-*trans*-4-(1-aminoethyl)-*N*-(3-fluoro-4-pyridyl)-cyclohexanecarboxamide dihydrochloride (**11**)



MS spectra of (*R*)-*trans*-4-(1-aminoethyl)-*N*-(3-fluoro-4-pyridyl)-cyclohexanecarboxamide dihydrochloride (**11**)

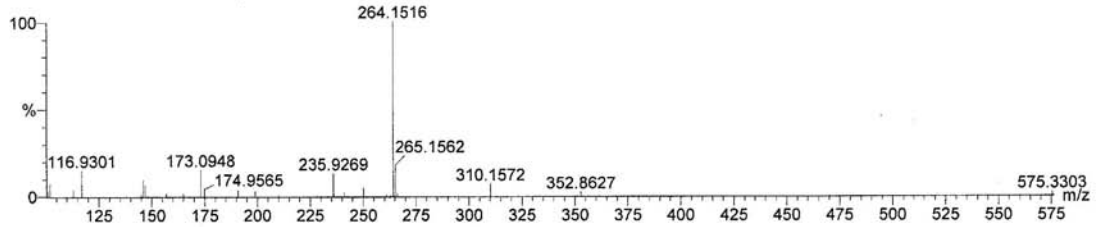




Elemental Composition Report

Single Mass Analysis
Tolerance = 6.0 mDa / DBE: min = -1.5, max = 50.0
Element prediction: Off
Number of isotope peaks used for i-FIT = 3

Monoisotopic Mass, Odd and Even Electron Ions
2098 formula(e) evaluated with 59 results within limits (up to 50 closest results for each mass)
Elements Used:
C: 0-90 H: 0-140 N: 0-12 O: 0-24 F: 0-3 Na: 0-1
Palecek Q-Tof Premier UPLC-MS 20-Nov-2009 11:54:55
JP240K 35 (0.330) AM (Cen,5, 70.00, Ar,10000.0,554.26,0.70,LS 10) 1: TOF MS ES- 1.16e+003



Minimum:				-1.5		
Maximum:		6.0	20.0	50.0		
Mass	Calc. Mass	mDa	PPM	DBE	i-FIT	Formula
264.1516	264.1514	0.2	0.8	10.0	7.8	C19 H20 O
	264.1519	-0.3	-1.1	3.0	24.1	C4 H16 N12 O2
	264.1513	0.3	1.1	-1.0	7.7	C11 H23 O3 F2 Na
	264.1512	0.4	1.5	6.5	0.5	C14 H19 N3 O F
	264.1522	-0.6	-2.3	-1.0	23.7	C6 H19 N6 O2 F3
	264.1522	-0.6	-2.3	-1.0	22.0	C6 H21 N6 O4 Na
	264.1510	0.6	2.3	3.0	8.8	C9 H18 N6 O F2
	264.1509	0.7	2.6	-0.5	29.7	C4 H19 N9 O3 Na
	264.1508	0.8	3.0	-0.5	32.6	C4 H17 N9 O F3
	264.1524	-0.8	-3.0	2.5	4.8	C11 H20 N3 O2 F2
	264.1526	-1.0	-3.8	6.0	1.9	C16 H21 O2 F
	264.1502	1.4	5.3	3.0	1.5	C14 H22 O2 F Na
	264.1501	1.5	5.7	10.5	3.4	C17 H18 N3
	264.1531	-1.5	-5.7	-1.0	46.5	C H17 N12 O3 F
	264.1500	1.6	6.1	-0.5	12.4	C9 H21 N3 O2 F2 Na
	264.1533	-1.7	-6.4	2.5	17.0	C6 H18 N9 O3
	264.1499	1.7	6.4	7.0	1.4	C12 H17 N6 F
	264.1497	1.9	7.2	3.5	15.1	C7 H16 N9 F2
	264.1535	-1.9	-7.2	-1.5	16.7	C8 H21 N3 O3 F3
	264.1535	-1.9	-7.2	-1.5	16.4	C8 H23 N3 O5 Na
	264.1535	-1.9	-7.2	4.0	13.1	C7 H17 N10 Na
	264.1495	2.1	7.9	0.0	39.5	C2 H17 N12 O2 Na
	264.1537	-2.1	-7.9	2.0	3.1	C13 H22 O3 F2
	264.1495	2.1	7.9	0.0	43.7	C2 H15 N12 F3
	264.1538	-2.2	-8.3	0.0	12.8	C9 H20 N4 F3 Na
	264.1492	2.4	9.1	-1.5	48.1	C H18 N11 O5
	264.1540	-2.4	-9.1	3.5	0.9	C14 H21 N F2 Na
	264.1490	2.6	9.8	7.0	2.7	C17 H21 O Na
	264.1488	2.8	10.6	3.5	3.1	C12 H20 N3 O F Na
	264.1544	-2.8	-10.6	-1.5	36.7	C3 H19 N9 O4 F
	264.1486	3.0	11.4	0.0	19.3	C7 H19 N6 O F2 Na
	264.1546	-3.0	-11.4	2.0	12.1	C8 H20 N6 O4
	264.1547	-3.1	-11.7	0.0	30.2	C4 H18 N10 O F Na
	264.1485	3.1	11.7	2.0	6.8	C11 H21 N2 O4 F
	264.1549	-3.3	-12.5	3.5	7.9	C9 H19 N7 O Na
	264.1483	3.3	12.5	-1.5	24.9	C6 H20 N5 O4 F2
	264.1551	-3.5	-13.2	-0.5	7.8	C11 H22 N O F3 Na
	264.1477	3.9	14.8	7.5	1.2	C15 H19 N3 Na
	264.1475	4.1	15.5	4.0	7.0	C10 H18 N6 F Na
	264.1474	4.2	15.9	6.0	3.1	C14 H20 N2 O3
	264.1473	4.3	16.3	0.5	28.3	C5 H17 N9 F2 Na
	264.1559	-4.3	-16.3	1.5	9.4	C10 H22 N3 O5
	264.1559	-4.3	-16.3	7.0	5.8	C9 H16 N10
	264.1560	-4.4	-16.7	-0.5	22.3	C6 H20 N7 O2 F Na
	264.1472	4.4	16.7	2.5	10.4	C9 H19 N5 O3 F
	264.1470	4.6	17.4	-1.0	33.7	C4 H18 N8 O3 F2
	264.1562	-4.6	-17.4	3.0	4.9	C11 H21 N4 O2 Na