

Specificity of SNP detection with molecular beacons is improved by stem and loop separation with spacers

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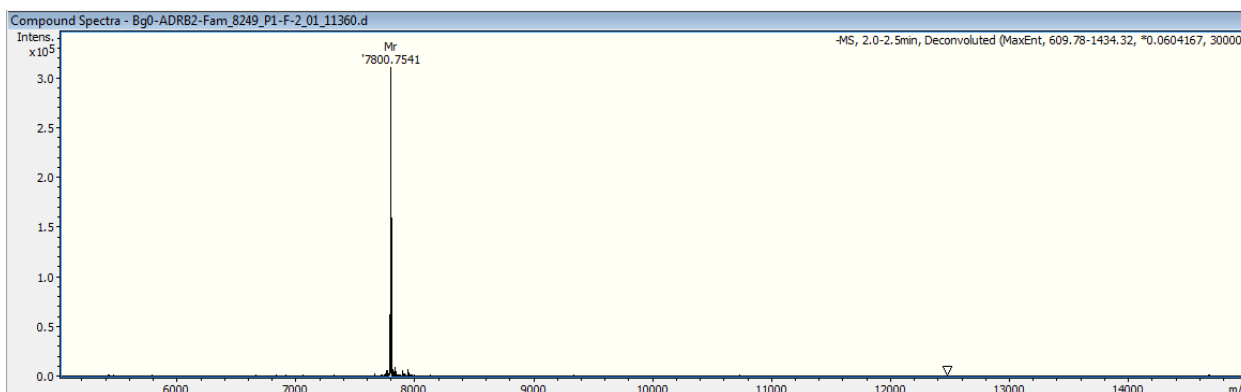
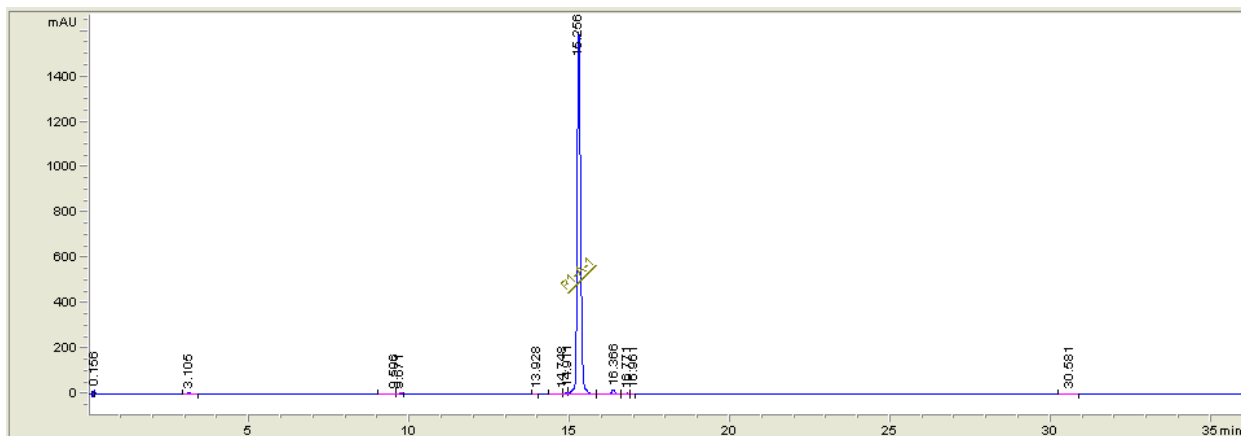
Table S1. Primers used in the study.

No	Name	Sequence (5'-3')
1	FV-F	CGC CTC TGG GCT AAT AGG ACT ACT TCT AAT C
2	FV-R	CAT GTT CTA GCC AGA AG
3	Nos3-F	ACT CCC CAC AGC TCT GCA TTC AGC AC
4	NOS-R	CAG GGG CAC CTC AAG
5	ADRB2-F	CCA GCC AGT GCG CTC ACC TGC CA
6	ADRB2-R	GAC GAT GAG AGA CAT GA

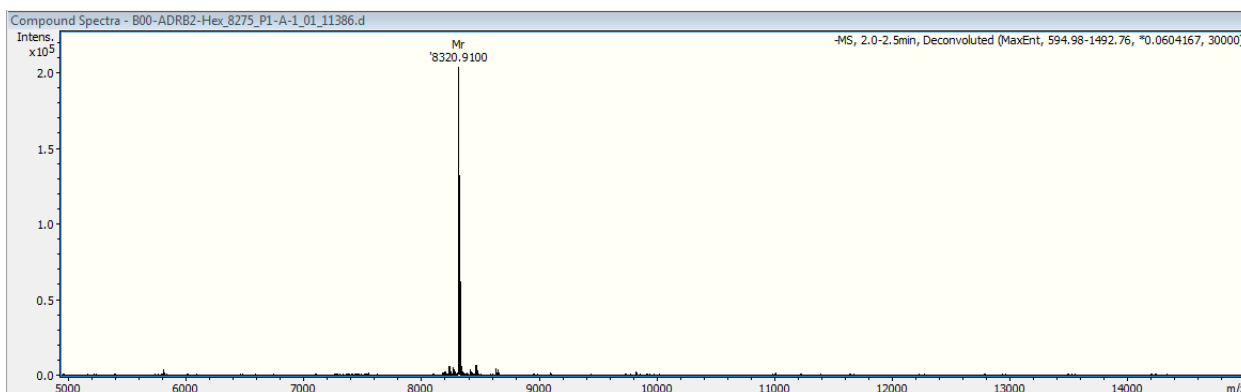
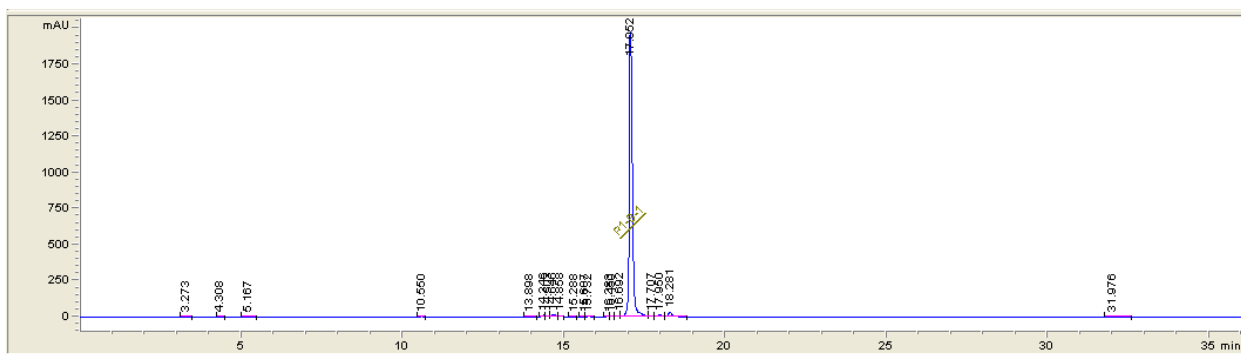
Table S2. Probes used in the study. Data of MS analysis.

Name	Sequence (5'3')	Exp. mass	Calc. mass
b0-adrb2-Fam	Fam <i>CCgg</i> ACC CAA TGG AAG CC <i>CCgg</i> BHQ1	7800.8	7805.3
b0-adrb2-Hex	Hex <i>CCgg</i> ACC CAA TAG AAG CCA <i>CCgg</i> BHQ1	8320.9	8323.1
b0-adrb2-R6G	R6G <i>CCgg</i> ACC CAA TAG AAG CCA <i>CCgg</i> BHQ1	8180.0	8183.3
b1-adrb2-Fam	Fam <i>CCgg</i> dIdIdI ACC CAA TGG AAG CC dIdIdI <i>CCgg</i> BHQ1	9685.0	9689.5
b1-adrb2-Hex	Hex <i>CCgg</i> dIdIdI ACC CAA TAG AAG CCA dIdI <i>CCgg</i> BHQ1	9891.0	9893.3
b2-adrb2-Fam	Fam <i>CCgg</i> dIdIdI ACC CAA TGG AAG CC <i>CCgg</i> BHQ1	8742.8	8747.3
b2-adrb2-Hex	Hex <i>CCgg</i> dIdIdI ACC CAA TAG AAG CCA <i>CCgg</i> BHQ1	9263.1	9265.2
b3-adrb2-Fam	Fam <i>CCgg</i> ACC CAA TGG AAG CC dIdIdI <i>CCgg</i> BHQ1	8743.0	8747.3
b3-adrb2-Hex	Hex <i>CCgg</i> ACC CAA TAG AAG CCA dIdI <i>CCgg</i> BHQ1	8949.0	8951.2
b4-adrb2-Fam	Fam <i>CCgg</i> <i>Sp18</i> ACC CAA TGG AAG CC <i>Sp18</i> <i>CCgg</i> BHQ1	8488.8	8489.6
b4-adrb2-Hex	Hex <i>CCgg</i> <i>Sp18</i> ACC CAA TAG AAG CCA <i>Sp18</i> <i>CCgg</i> BHQ1	9008.8	9003.4
b5-adrb2-Fam	Fam <i>CCgg</i> <i>Sp18</i> ACC CAA TGG AAG CC <i>CCgg</i> BHQ1	8144.9	8145.4
b5-adrb2-Hex	Hex <i>CCgg</i> <i>Sp18</i> ACC CAA TAG AAG CCA <i>CCgg</i> BHQ1	8665.0	8663.3
b6-adrb2-Fam	Fam <i>CCgg</i> ACC CAA TGG AAG CC <i>Sp18</i> <i>CCgg</i> BHQ1	8144.9	8145.4
b6-adrb2-Hex	Hex <i>CCgg</i> ACC CAA TAG AAG CCA <i>Sp18</i> <i>CCgg</i> BHQ1	8665.0	8663.3
b0-nos3-Fam	Fam <i>CCgg</i> CAG ATG AGC CCC C <i>CCgg</i> BHQ1	7776.7	7781.2
b0-nos3-Hex	Hex <i>CCgg</i> CAG ATG ATC CCC CA <i>CCgg</i> BHQ1	7974.7	7976.9
b0-nos3-R6G	R6G <i>CCgg</i> CAG ATG ATC CCC CA <i>CCgg</i> BHQ1	7833.9	7837.0
b1-nos3-Fam	Fam <i>CCgg</i> dIdIdI CAG ATG AGC CCC C dIdIdI <i>CCgg</i> BHQ1	9661.1	9665.4
b1-nos3-Hex	Hex <i>CCgg</i> dIdIdI CAG ATG ATC CCC CA dIdIdI <i>CCgg</i> BHQ1	9859.1	9861.0
b2-nos3-Fam	Fam <i>CCgg</i> dIdIdI CAG ATG AGC CCC C <i>CCgg</i> BHQ1	8718.6	8723.4
b2-nos3-Hex	Hex <i>CCgg</i> dIdIdI CAG ATG ATC CCC CA <i>CCgg</i> BHQ1	8916.9	8918.9
b3-nos3-Fam	Fam <i>CCgg</i> CAG ATG AGC CCC C dIdIdI <i>CCgg</i> BHQ1	8718.9	8723.3
b3-nos3-Hex	Hex <i>CCgg</i> CAG ATG ATC CCC CA dIdIdI <i>CCgg</i> BHQ1	8916.9	8918.9
b4-nos3-Fam	Fam <i>CCgg</i> <i>Sp18</i> CAG ATG AGC CCC C <i>Sp18</i> <i>CCgg</i> BHQ1	8465.0	8461.6
b4-nos3-Hex	Hex <i>CCgg</i> <i>Sp18</i> CAG ATG ATC CCC CA <i>Sp18</i> <i>CCgg</i> BHQ1	8662.6	8657.2
b5-nos3-Fam	Fam <i>CCgg</i> <i>Sp18</i> CAG ATG AGC CCC C <i>CCgg</i> BHQ1	8120.9	8121.4
b5-nos3-Hex	Hex <i>CCgg</i> <i>Sp18</i> CAG ATG ATC CCC CA <i>CCgg</i> BHQ1	8318.5	8317.0
b6-nos3-Fam	Fam <i>CCgg</i> CAG ATG AGC CCC C <i>Sp18</i> <i>CCgg</i> BHQ1	8120.9	8121.4
b6-nos3-Hex	Hex <i>CCgg</i> CAG ATG ATC CCC CA <i>Sp18</i> <i>CCgg</i> BHQ1	8318.9	8317.0
b0-FV-Fam	Fam <i>CCgg</i> GA CAG GCG AGG AAT <i>CCgg</i> BHQ1	7920.8	7925.3
b0-FV-Hex	Hex <i>CCgg</i> GA CAG GCA AGG AAT A <i>CCgg</i> BHQ1	8440.9	8443.0
b0-FV-R6G	R6G <i>CCgg</i> GA CAG GCA AGG AAT A <i>CCgg</i> BHQ1	8299.7	8303.1
b1-FV-Fam	Fam <i>CCgg</i> dIdIdI GA CAG GCG AGG AAT dIdIdI <i>CCgg</i> BHQ1	9804.8	9809.5
b1-FV-Hex	Hex <i>CCgg</i> dIdIdI GA CAG GCA AGG AAT A dIdIdI <i>CCgg</i> BHQ1	10324.7	10327.1
b2-FV-Fam	Fam <i>CCgg</i> dIdIdI GA CAG GCG AGG AAT <i>CCgg</i> BHQ1	8862.9	8867.4
b2-FV-Hex	Hex <i>CCgg</i> dIdIdI GA CAG GCA AGG AAT A <i>CCgg</i> BHQ1	9382.6	9385.3
b3-FV-Fam	Fam <i>CCgg</i> GA CAG GCG AGG AAT dIdIdI <i>CCgg</i> BHQ1	8862.9	8867.4
b3-FV-Hex	Hex <i>CCgg</i> GA CAG GCA AGG AAT A dIdIdI <i>CCgg</i> BHQ1	9382.6	9385.3
b4-FV-Fam	Fam <i>CCgg</i> <i>Sp18</i> GA CAG GCG AGG AAT <i>Sp18</i> <i>CCgg</i> BHQ1	8609.0	8605.6
b4-FV-Hex	Hex <i>CCgg</i> <i>Sp18</i> GA CAG GCA AGG AAT A <i>Sp18</i> <i>CCgg</i> BHQ1	9128.7	9123.5
b5-FV-Fam	Fam <i>CCgg</i> <i>Sp18</i> GA CAG GCG AGG AAT <i>CCgg</i> BHQ1	8264.9	8265.5
b5-FV-Hex	Hex <i>CCgg</i> <i>Sp18</i> GA CAG GCA AGG AAT A <i>CCgg</i> BHQ1	8784.9	8783.3
b6-FV-Fam	Fam <i>CCgg</i> GA CAG GCG AGG AAT <i>Sp18</i> <i>CCgg</i> BHQ1	8264.9	8265.5
b6-FV-Hex	Hex <i>CCgg</i> GA CAG GCA AGG AAT A <i>Sp18</i> <i>CCgg</i> BHQ1	8784.6	8783.1

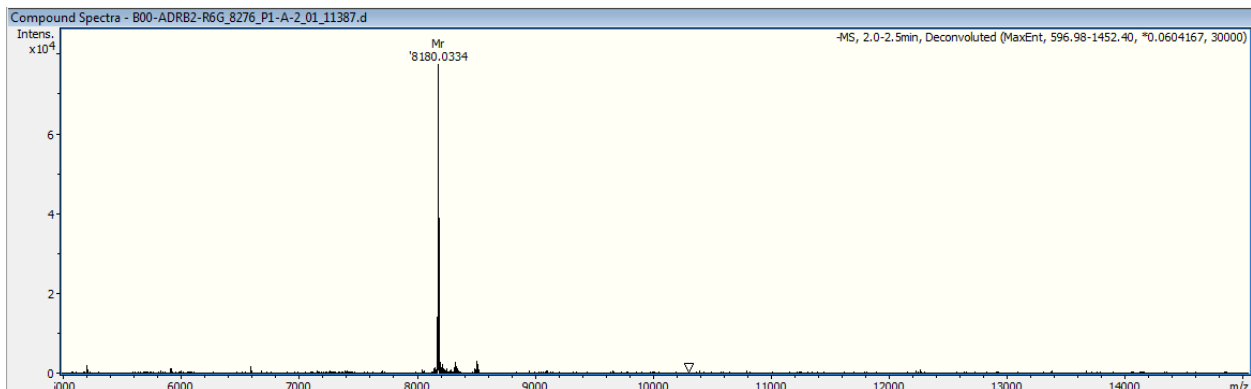
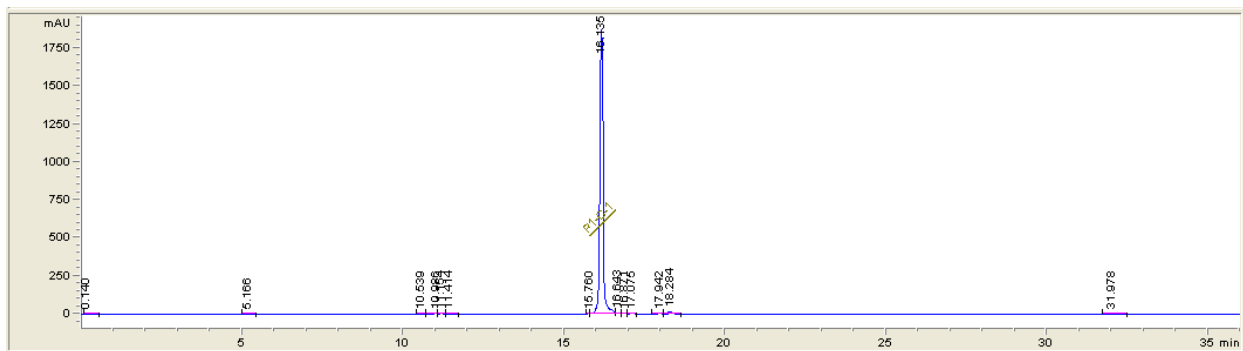
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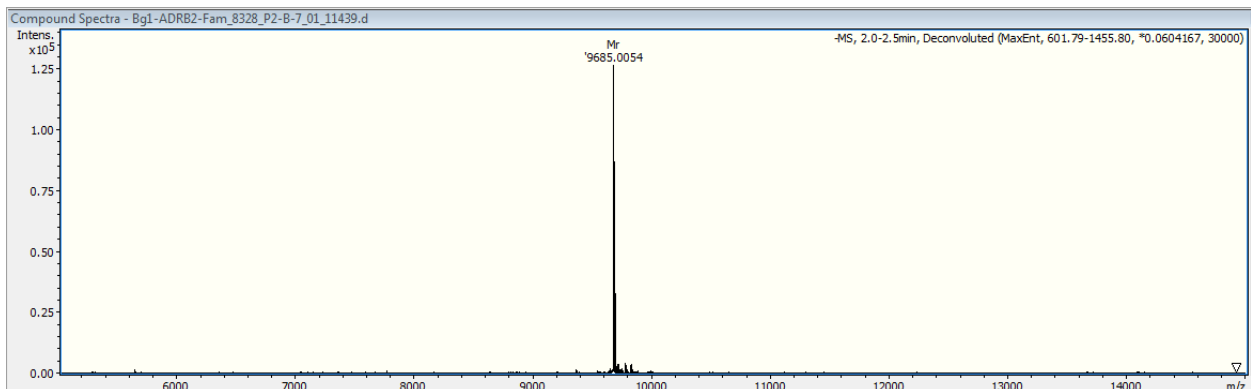
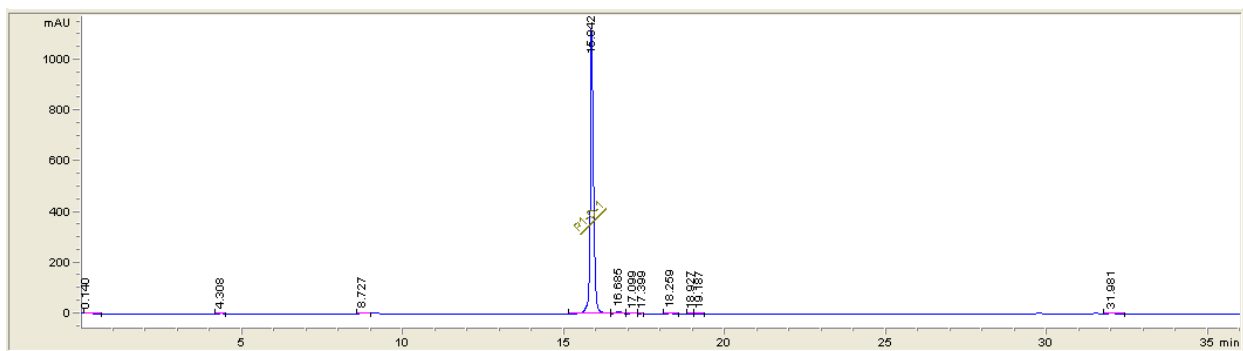
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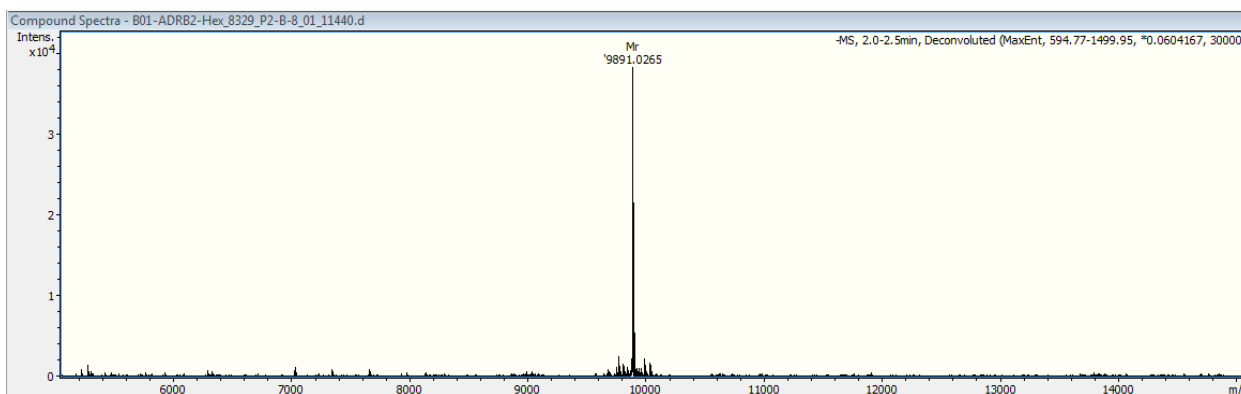
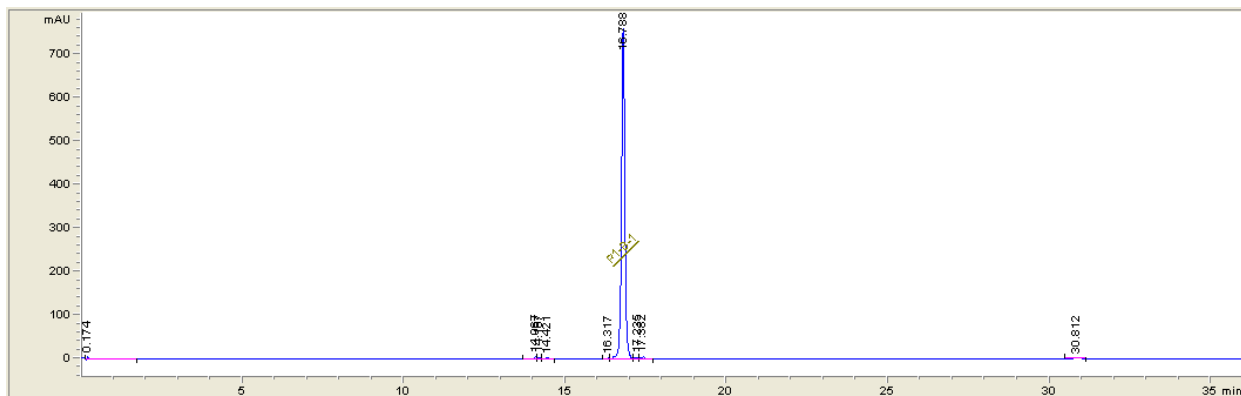
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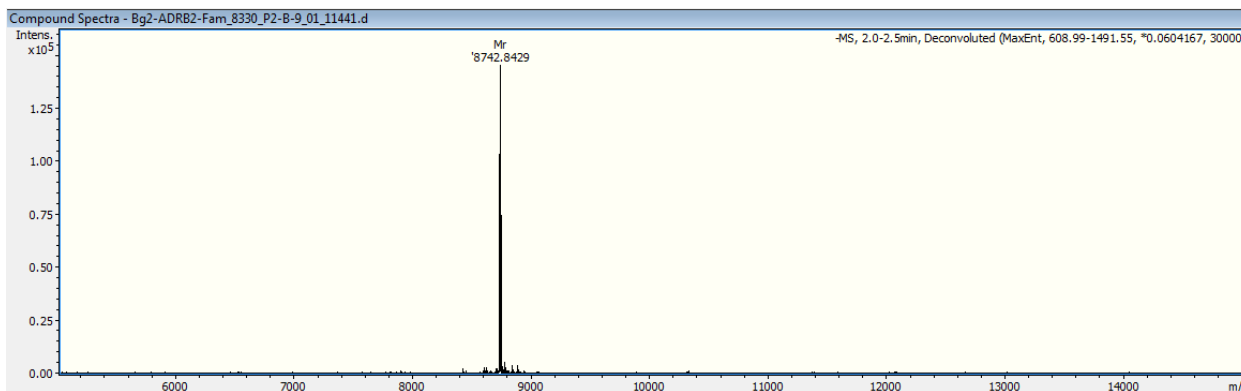
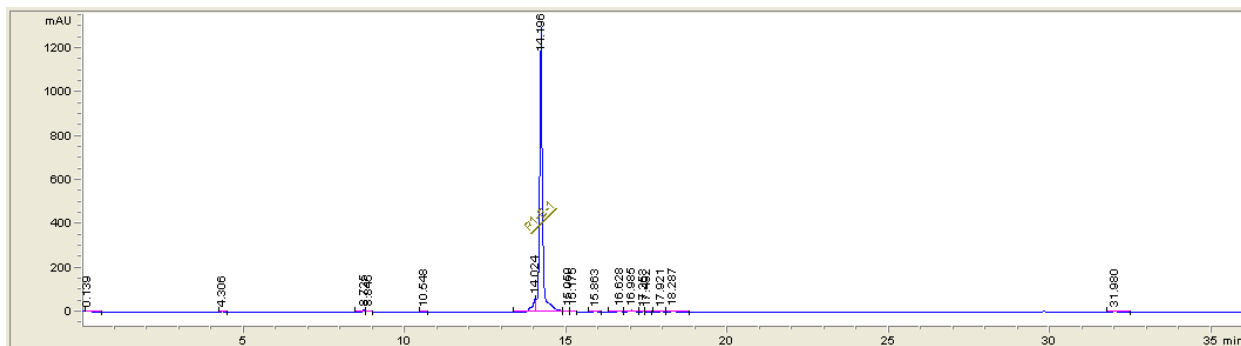
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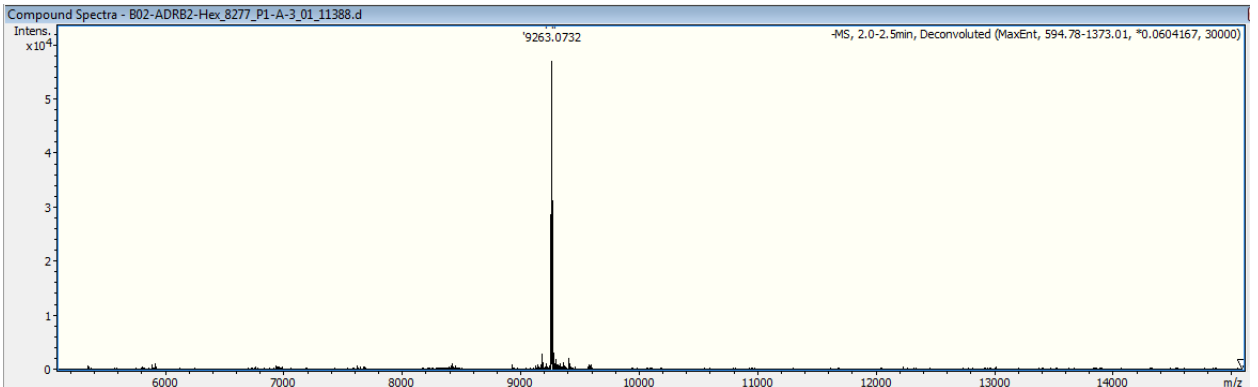
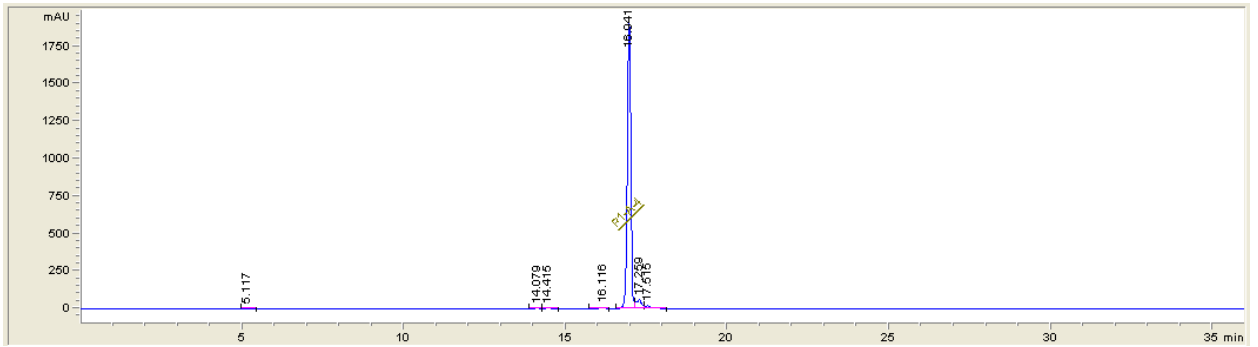
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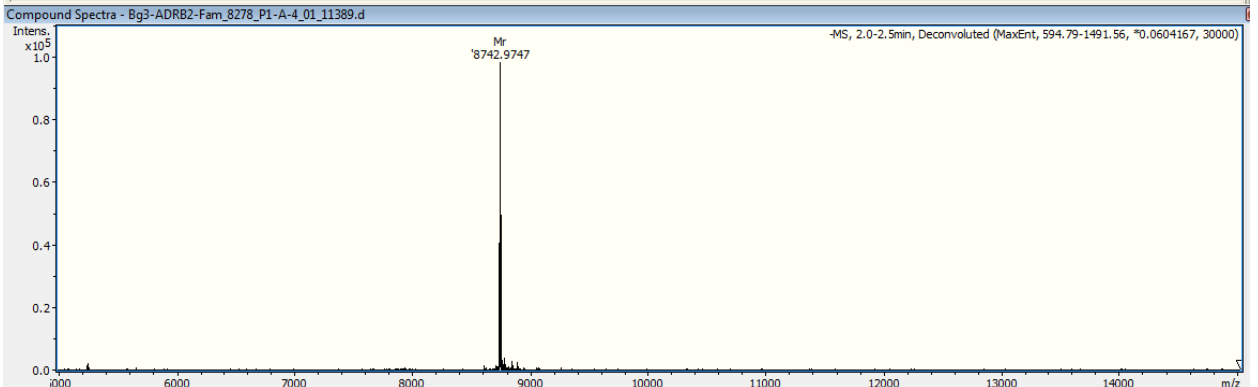
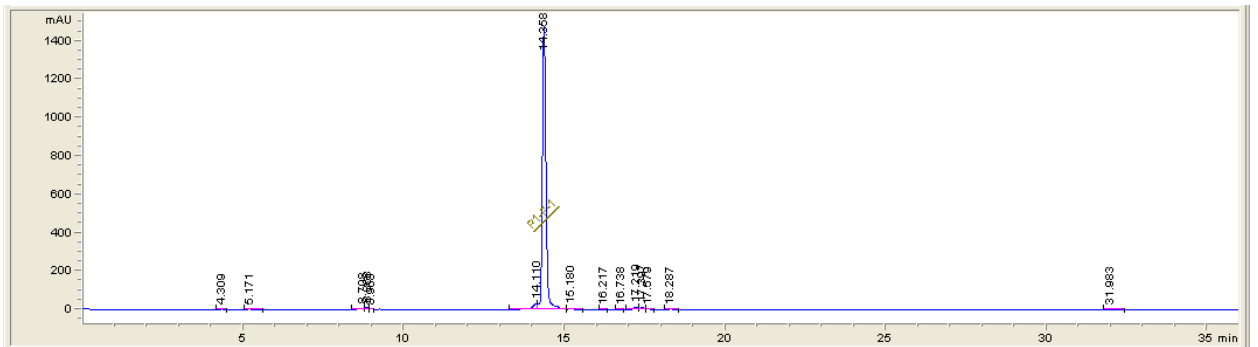
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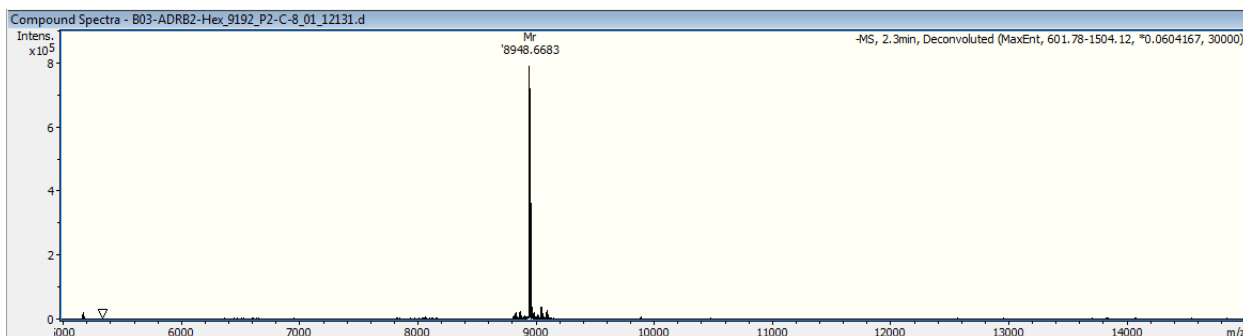
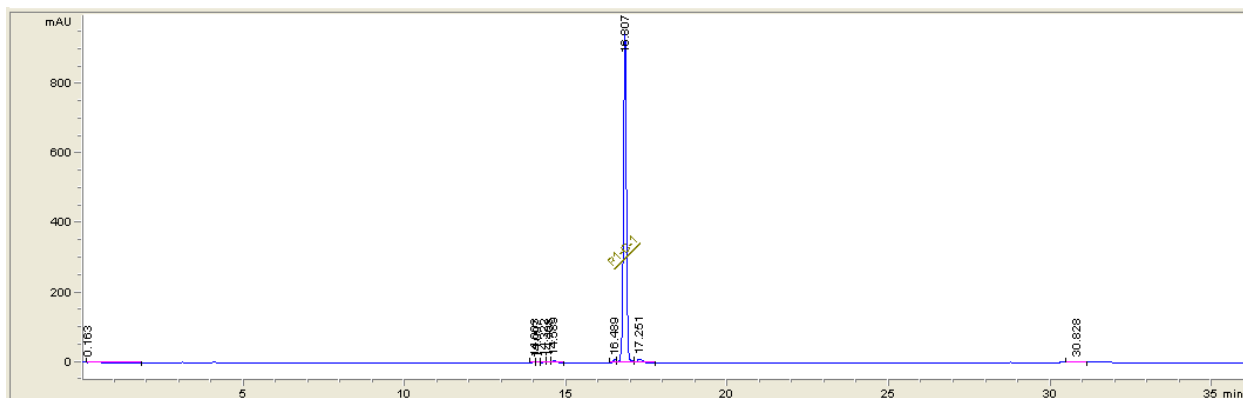
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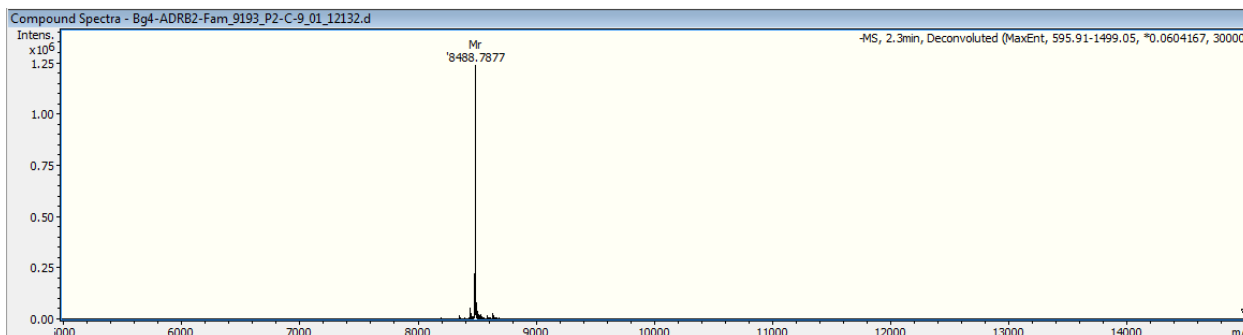
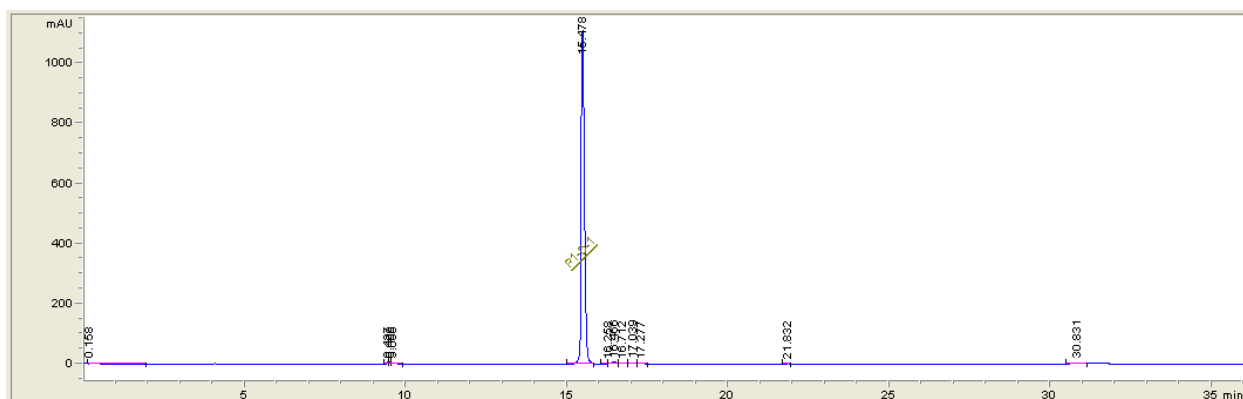
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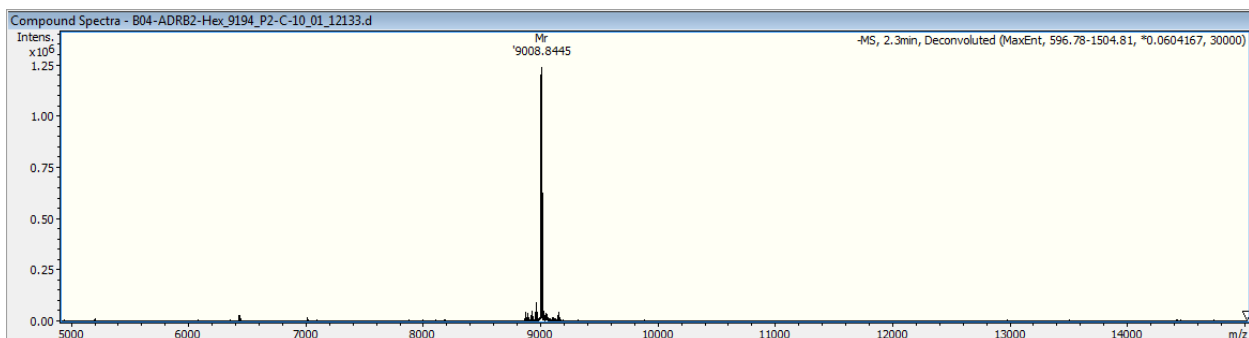
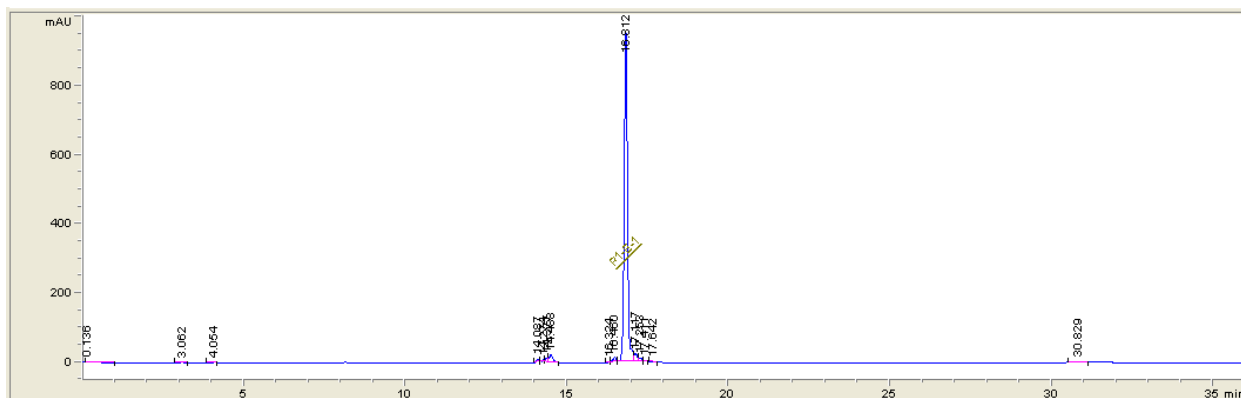
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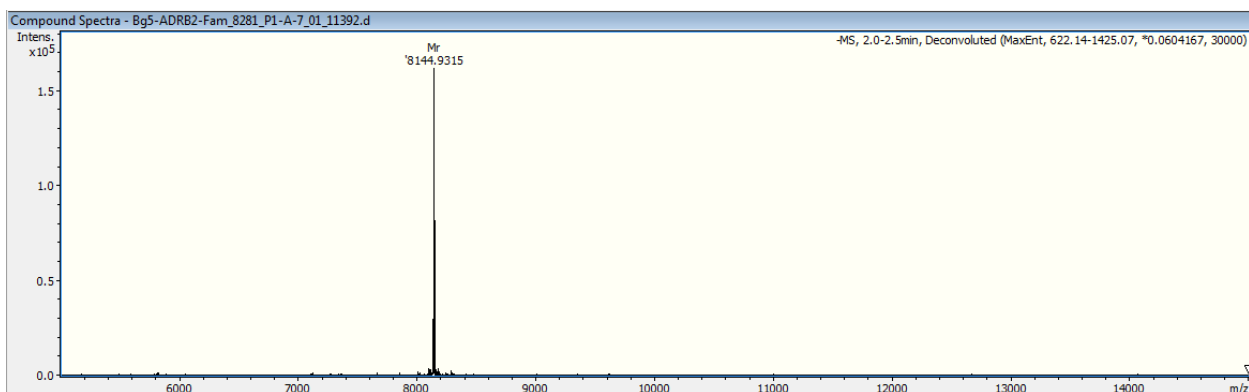
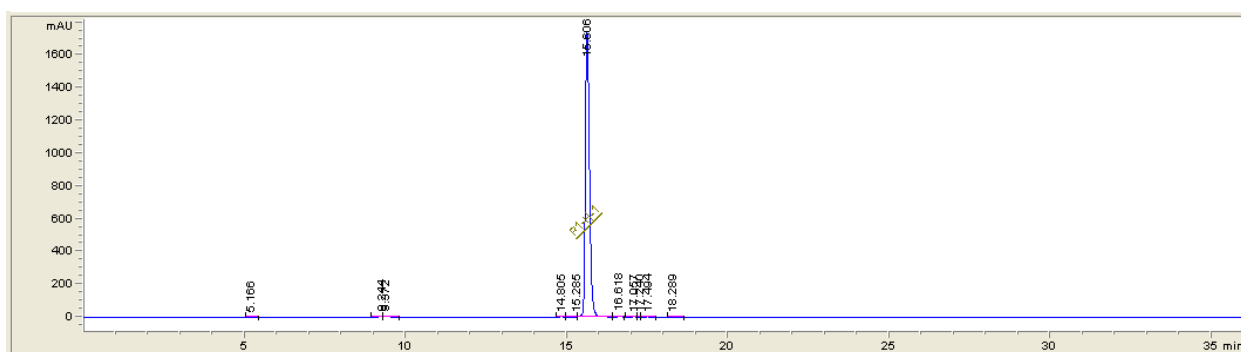
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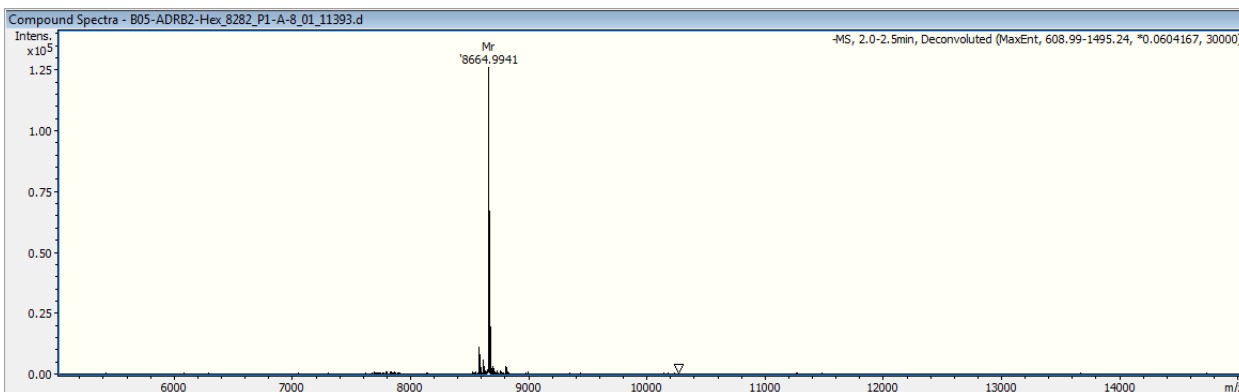
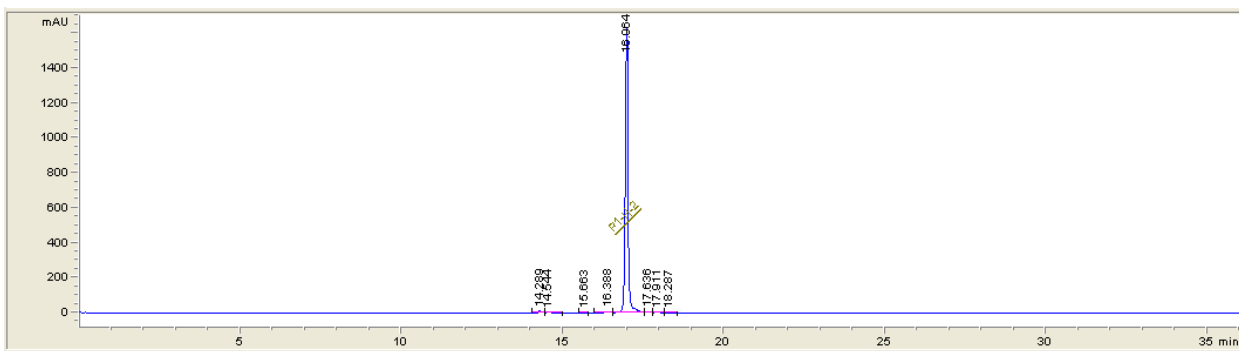
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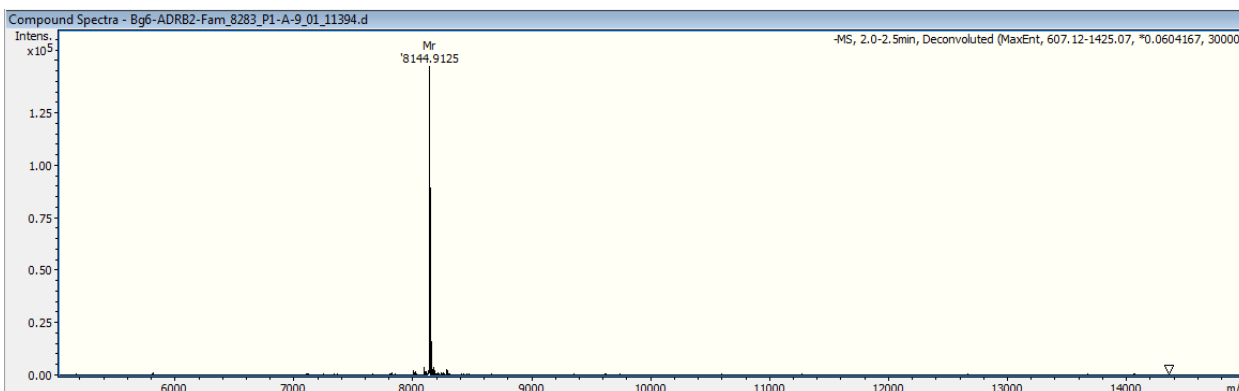
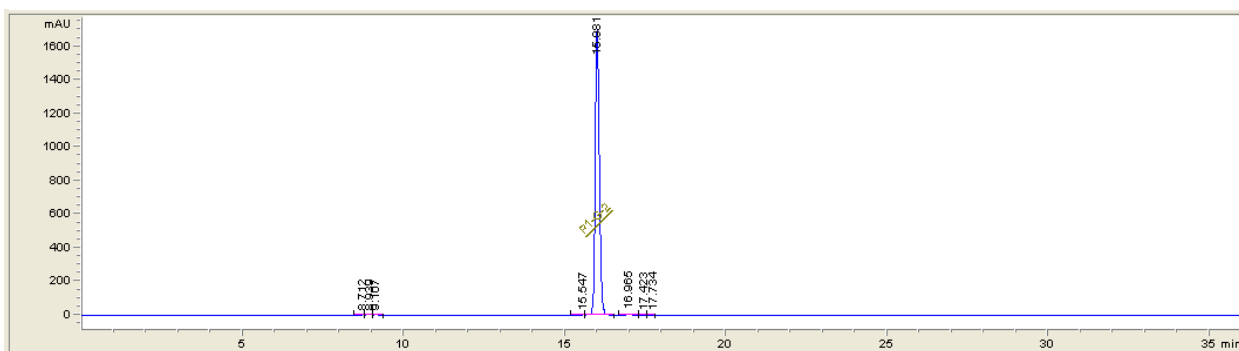
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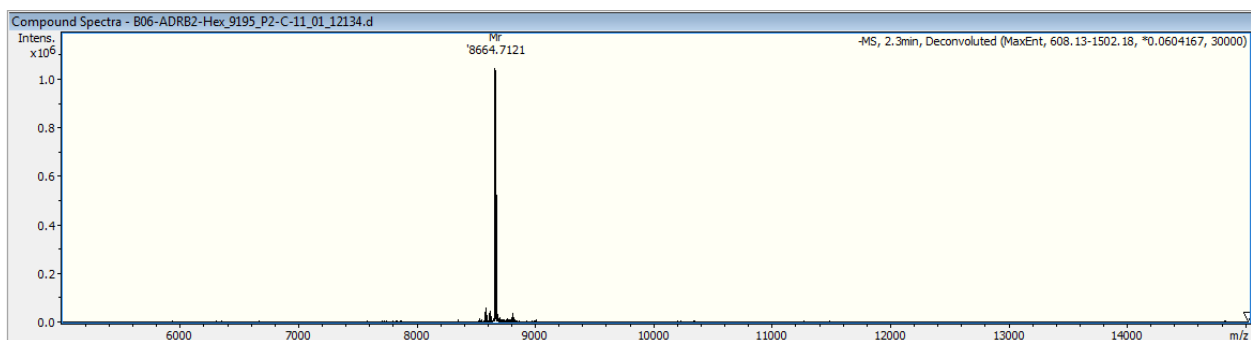
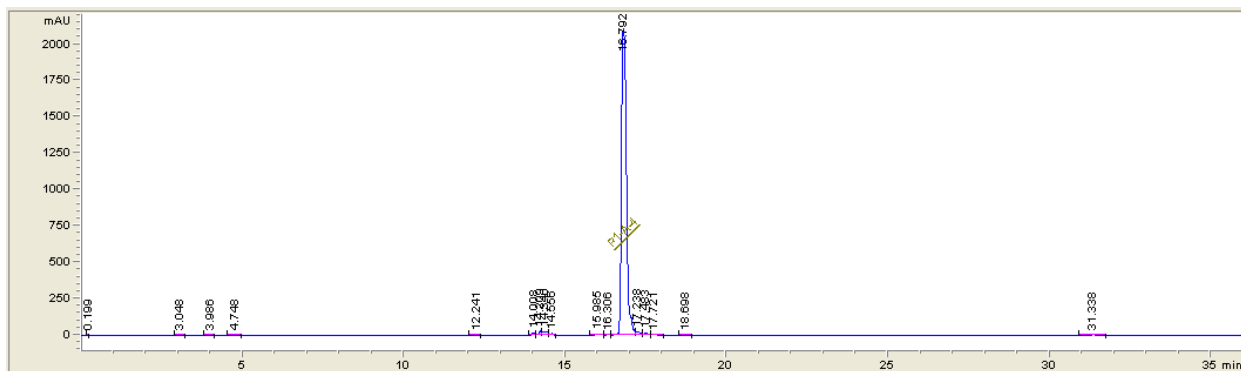
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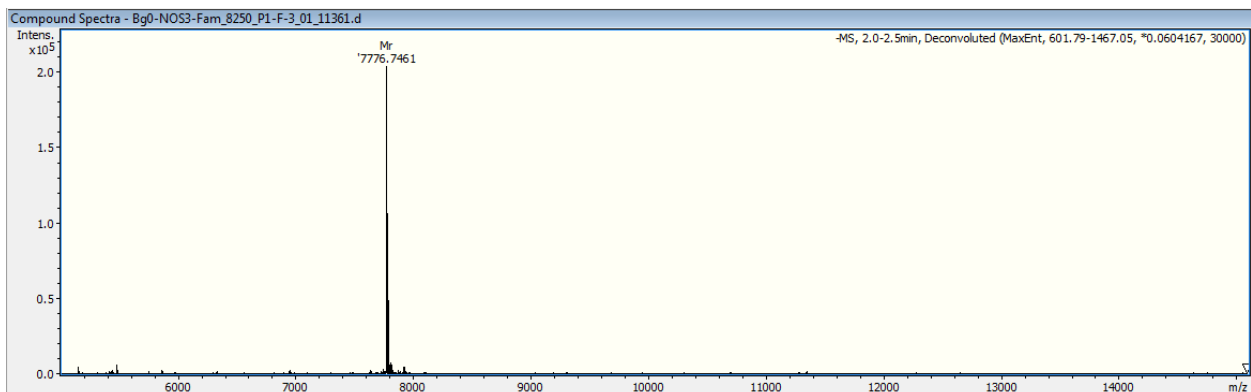
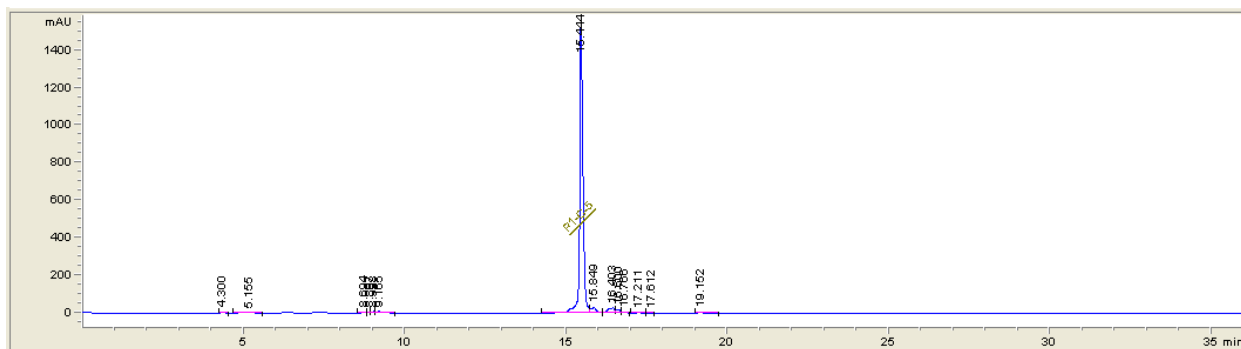
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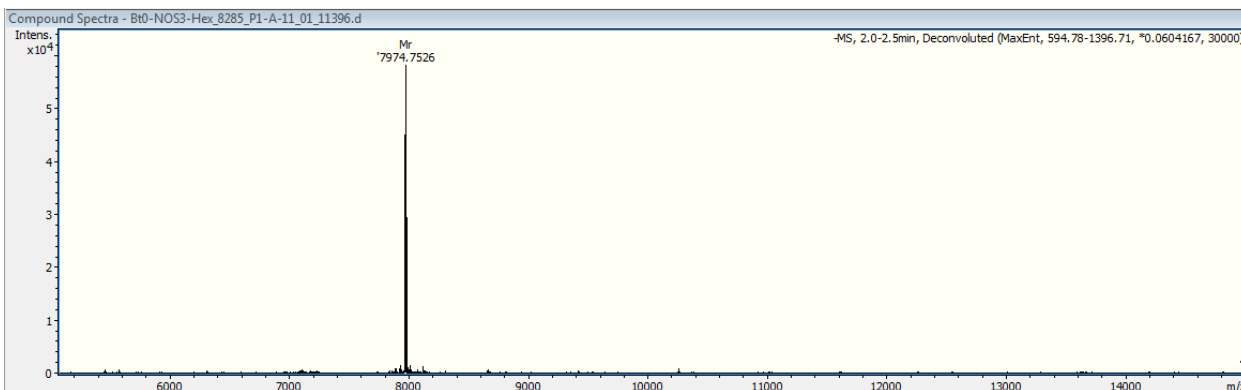
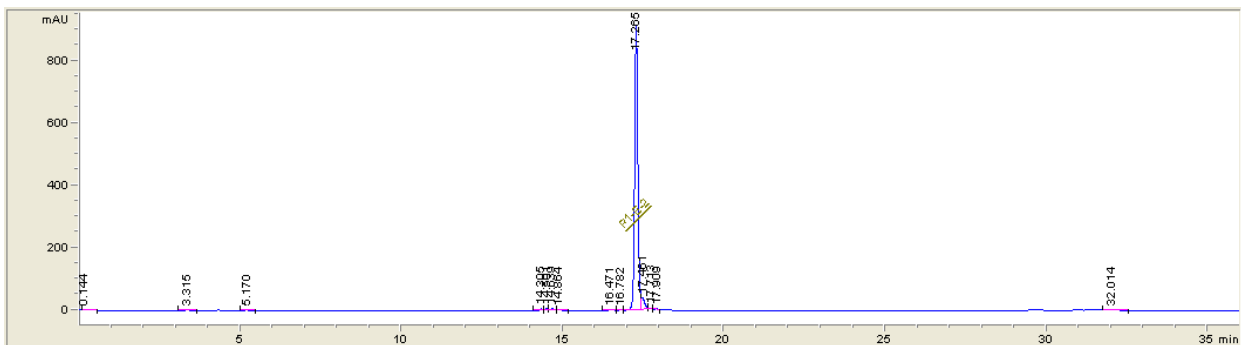
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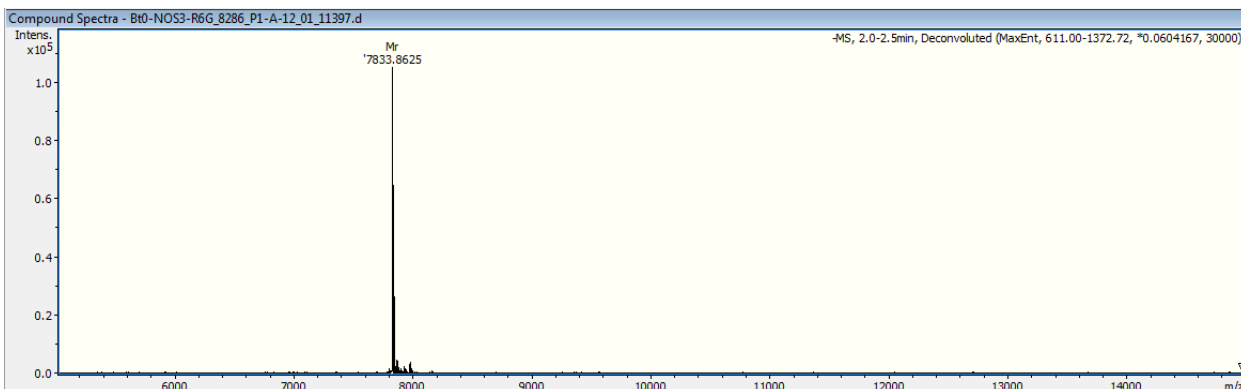
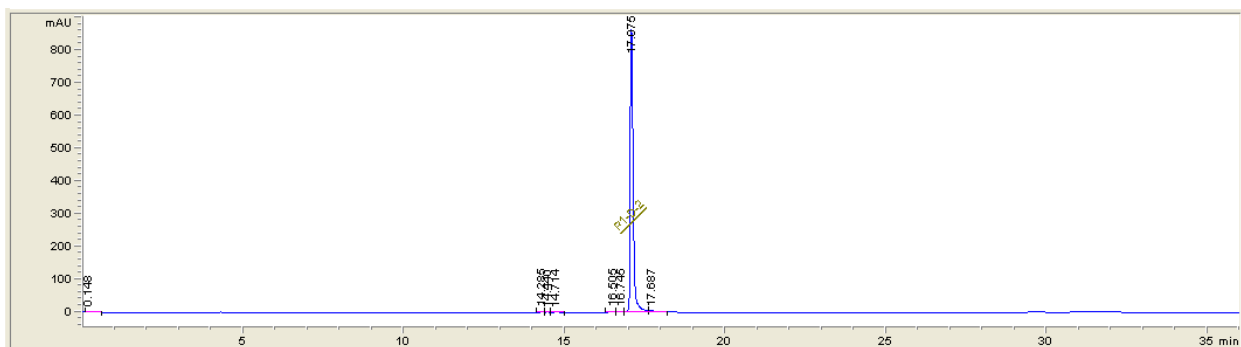
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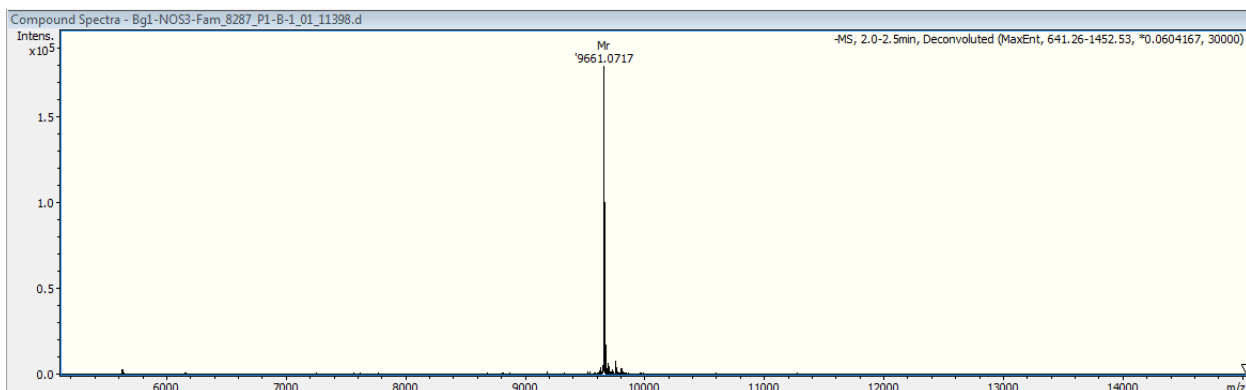
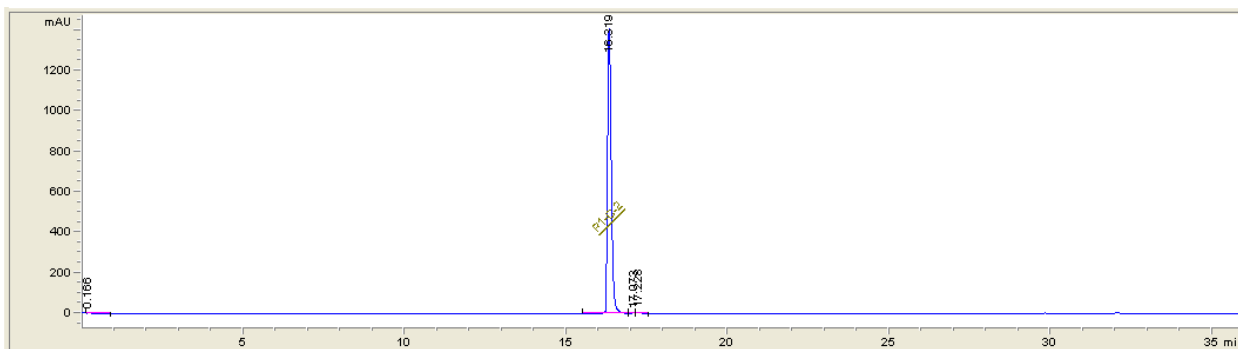
Oligonucleotide Bt0-NOS3-Hex - HPLC traces and MS data



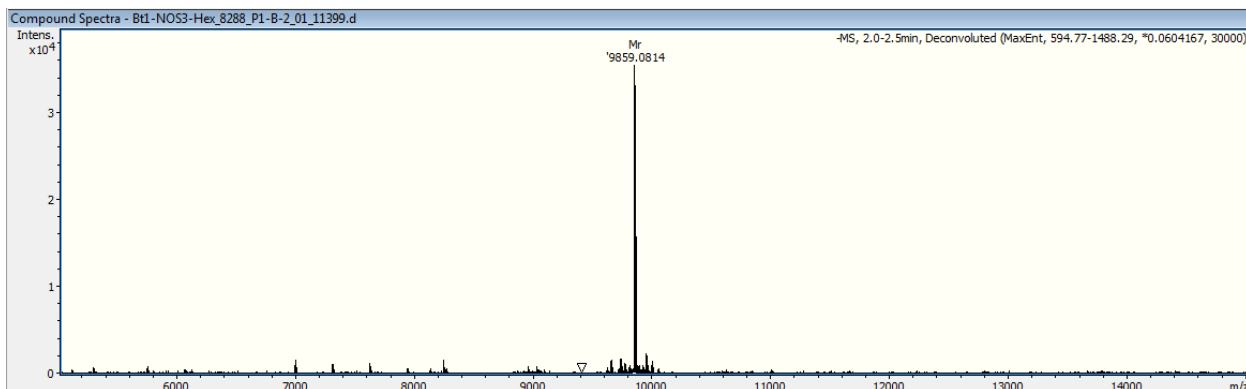
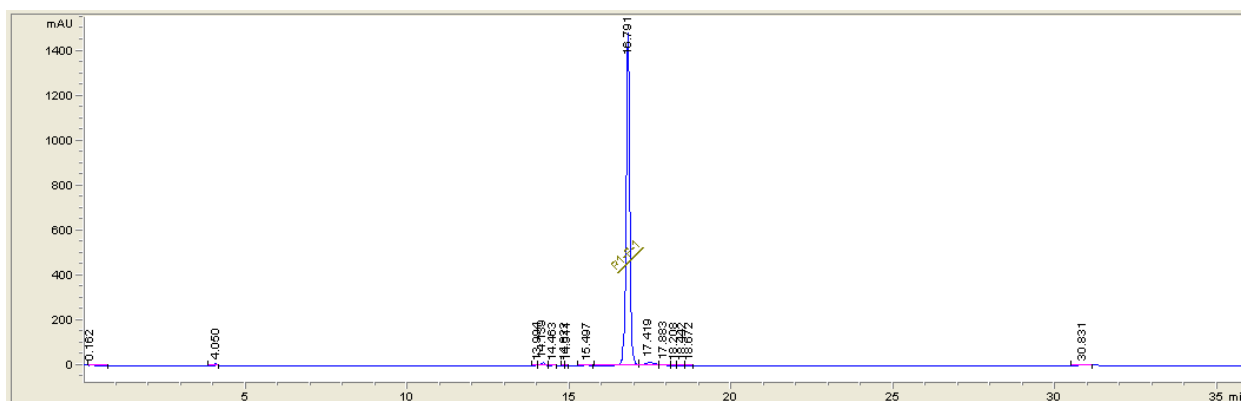
Oligonucleotide Bt0-NOS3-R6G - HPLC traces and MS data



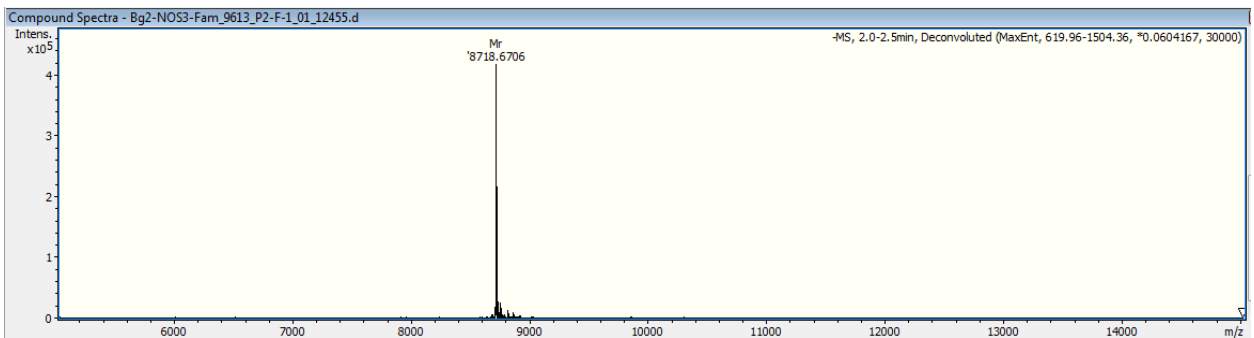
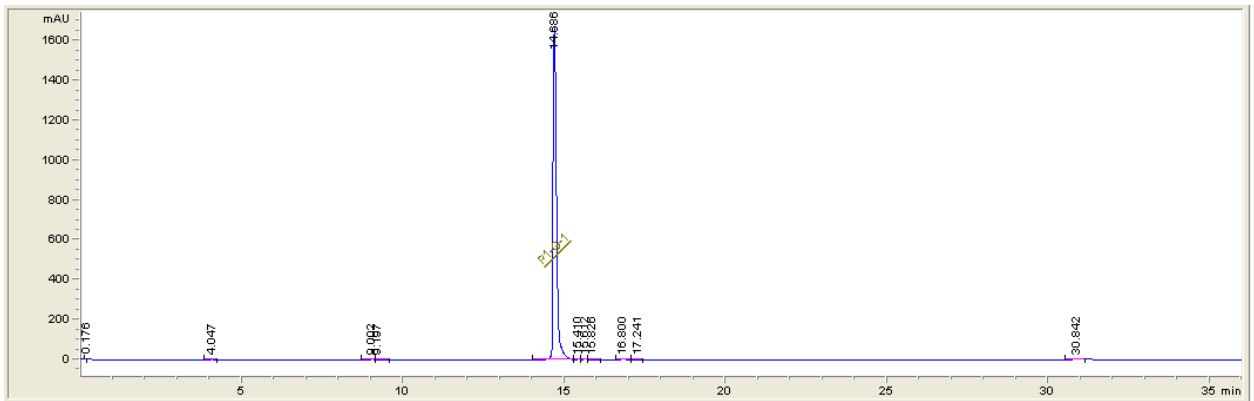
Oligonucleotide Bg1-NOS3-Fam - HPLC traces and MS data



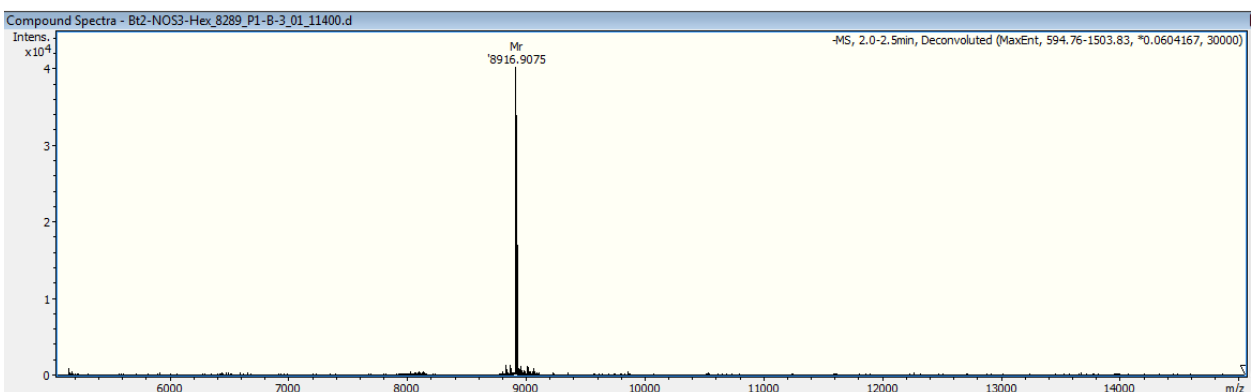
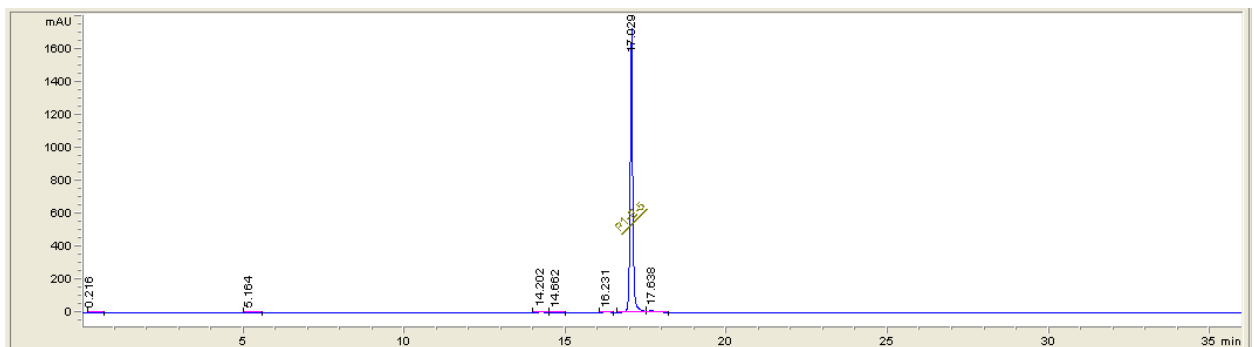
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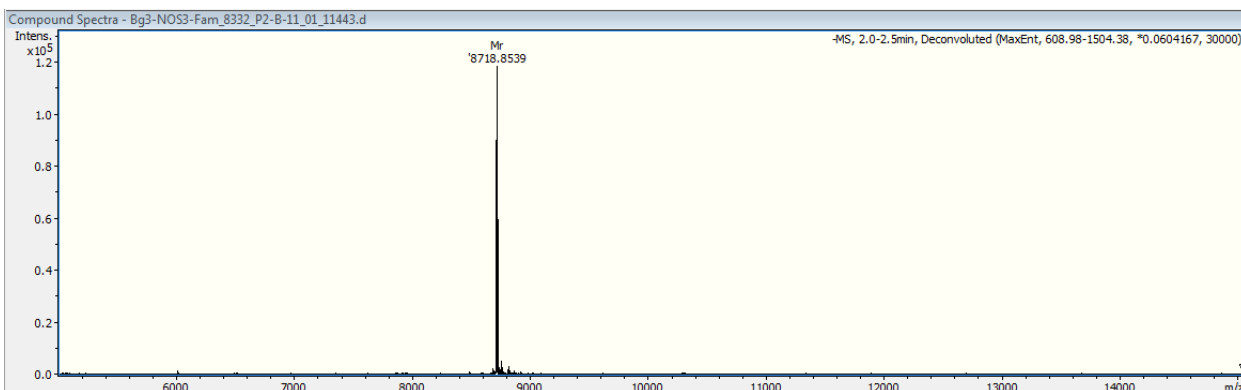
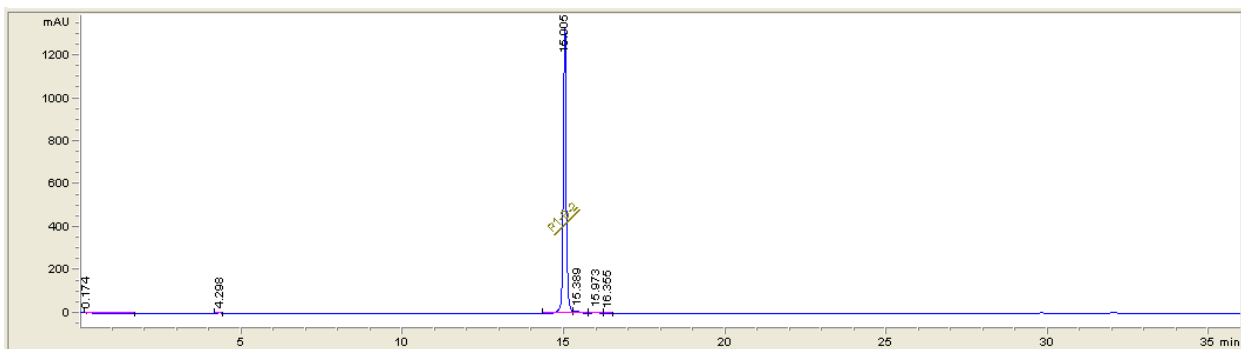
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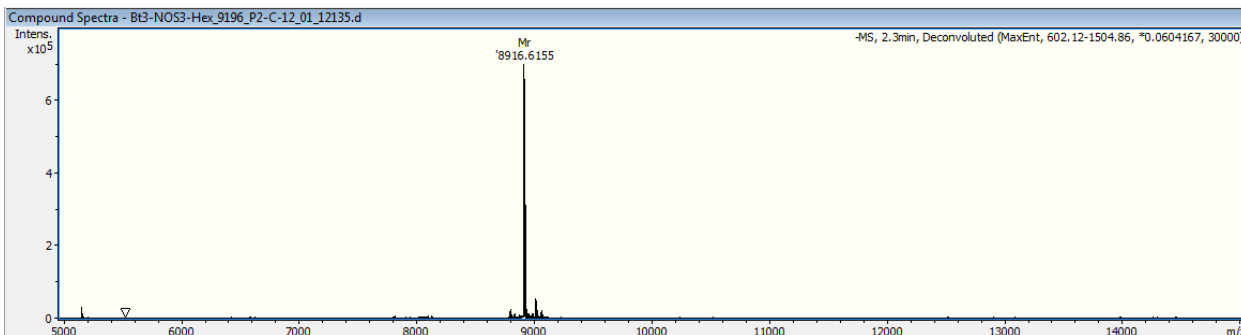
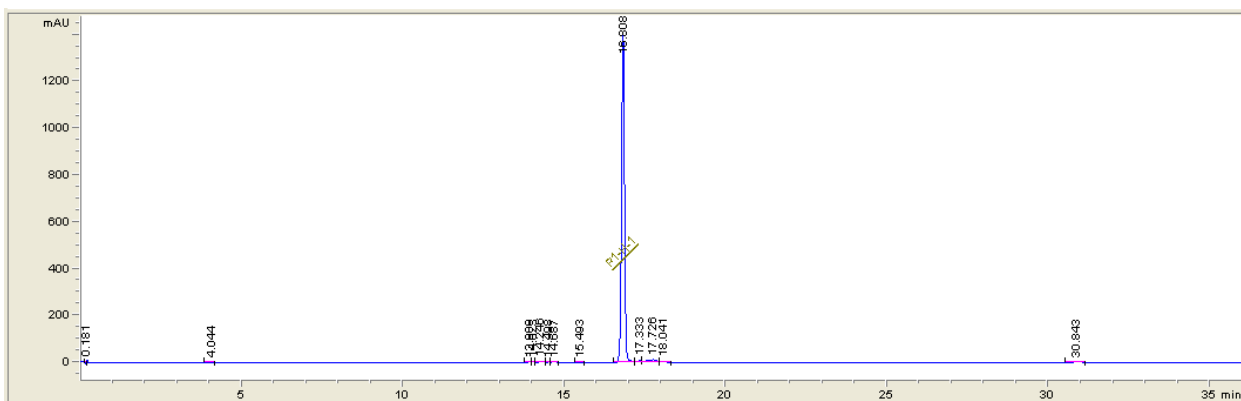
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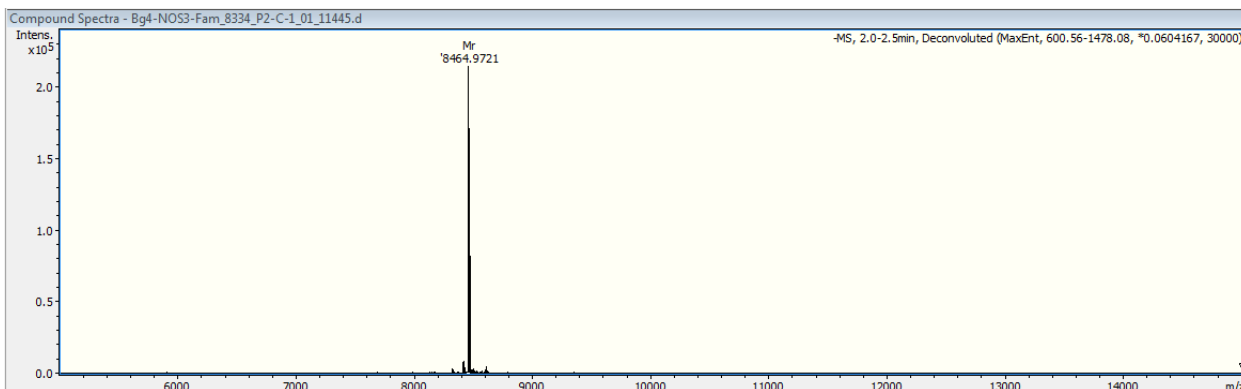
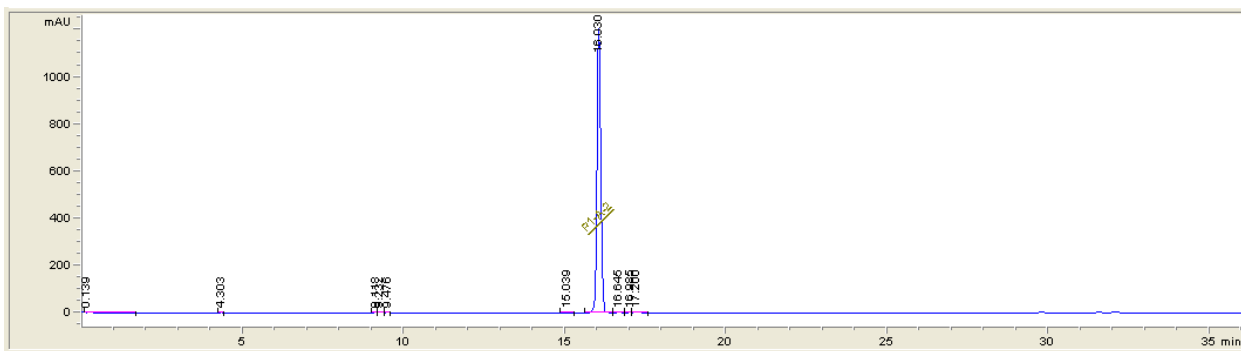
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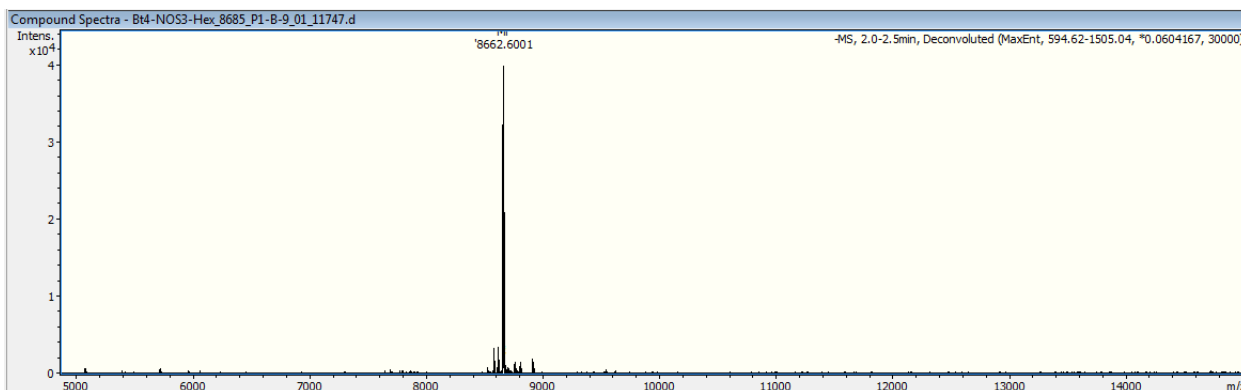
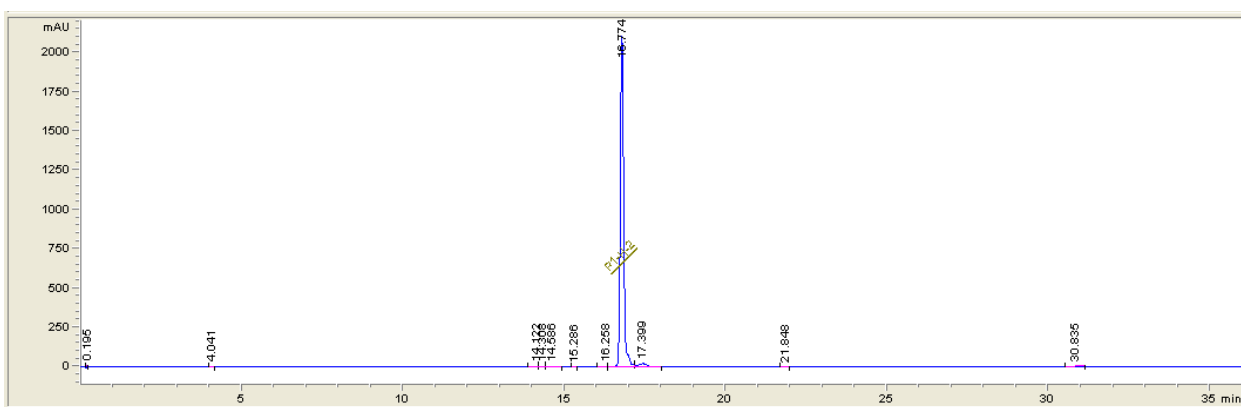
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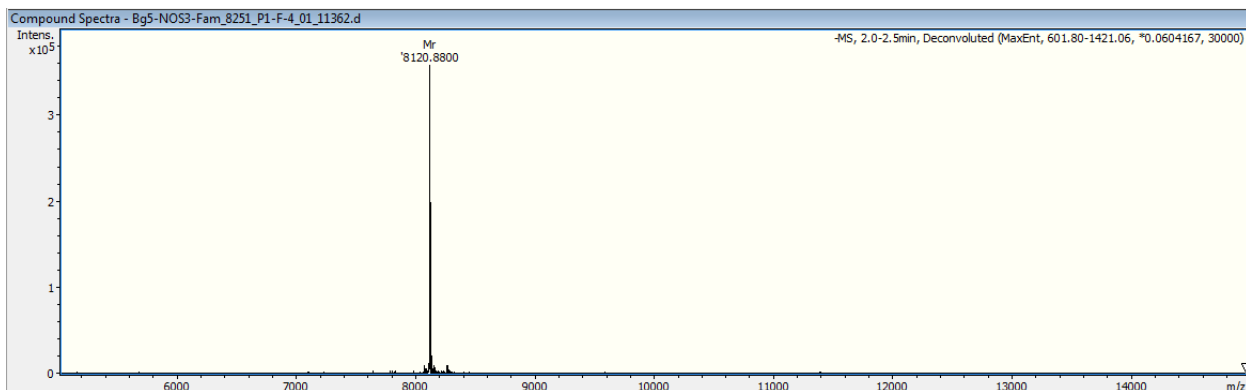
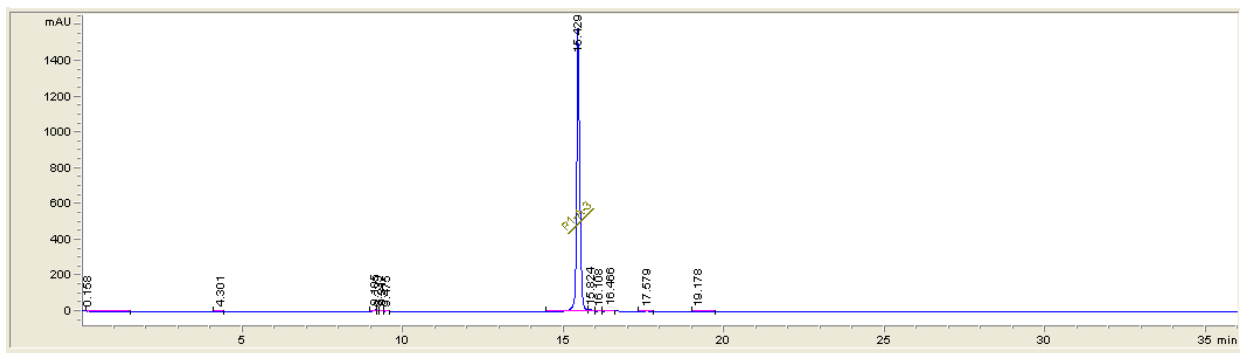
Oligonucleotide Bg4-NOS3-Fam - HPLC traces and MS data



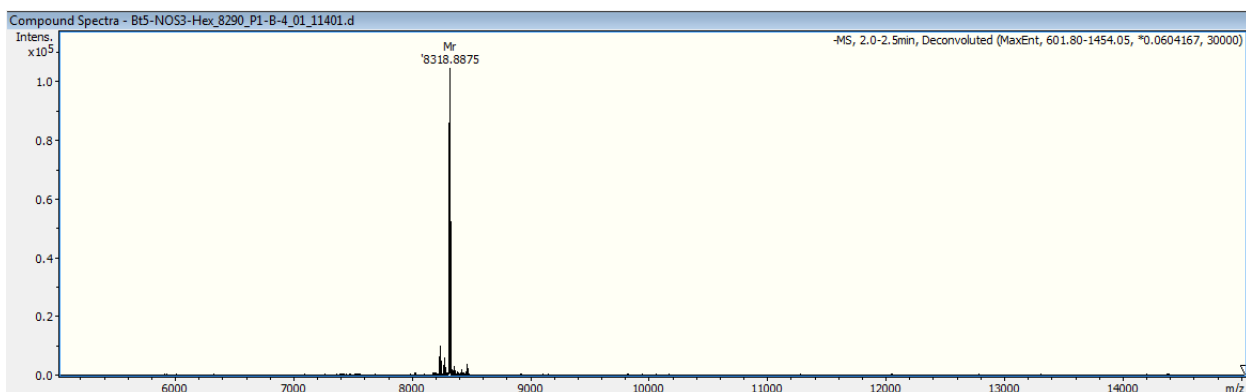
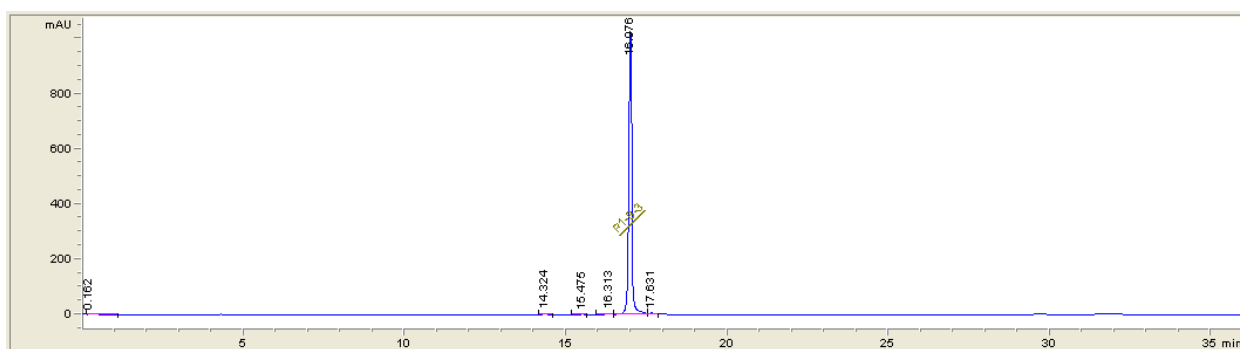
Oligonucleotide Bt4-NOS3-Hex - HPLC traces and MS data



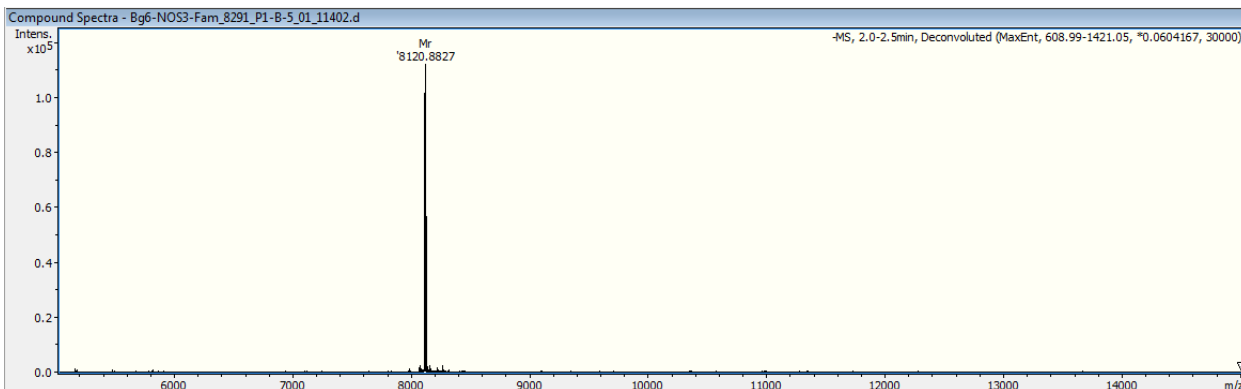
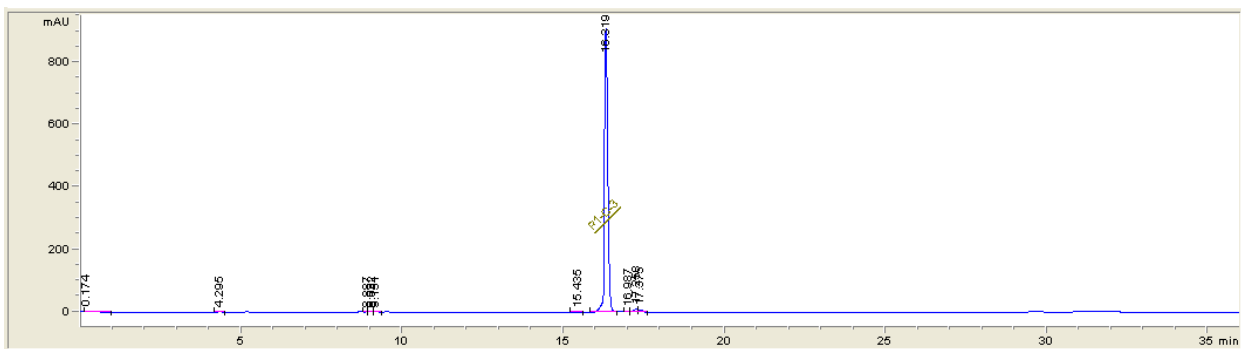
Oligonucleotide Bg5-NOS3-Fam - HPLC traces and MS data



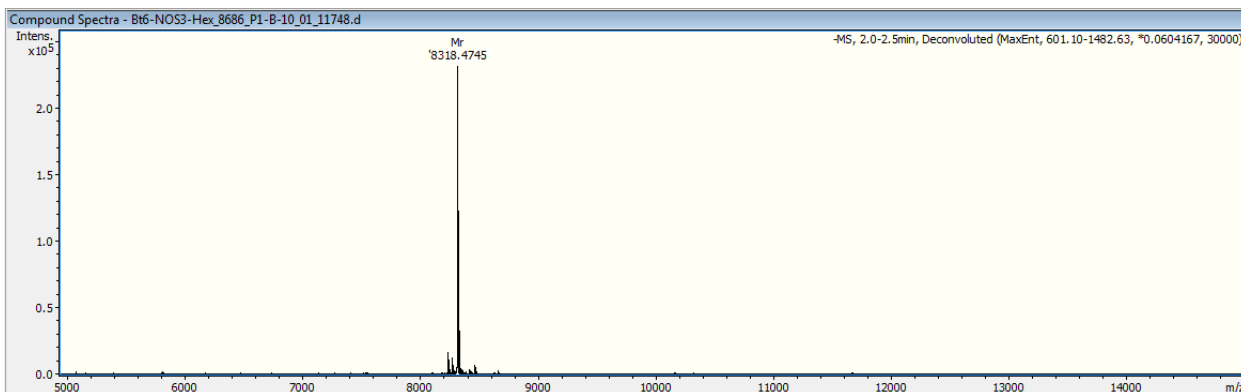
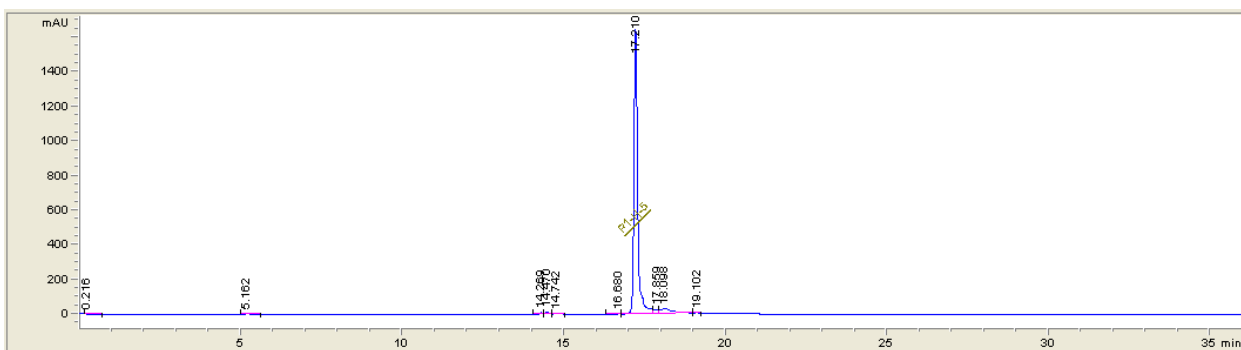
Oligonucleotide Bt5-NOS3-Hex - HPLC traces and MS data



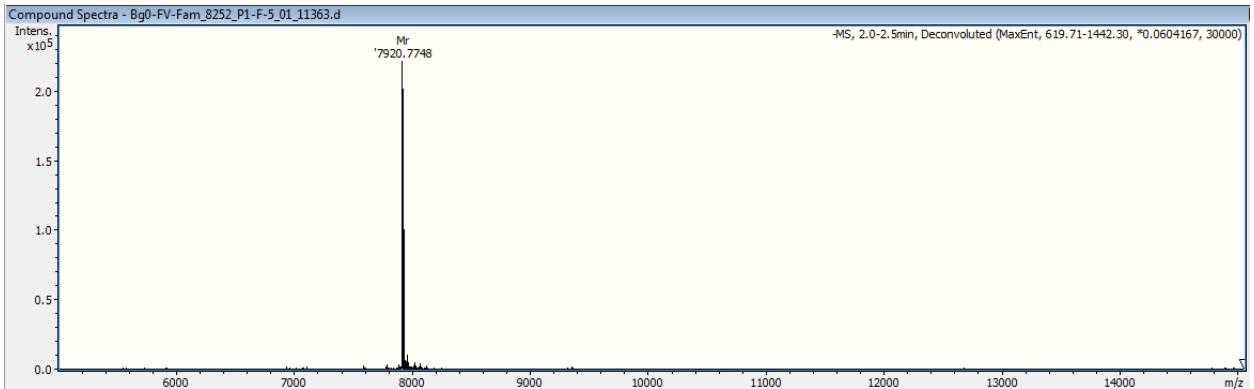
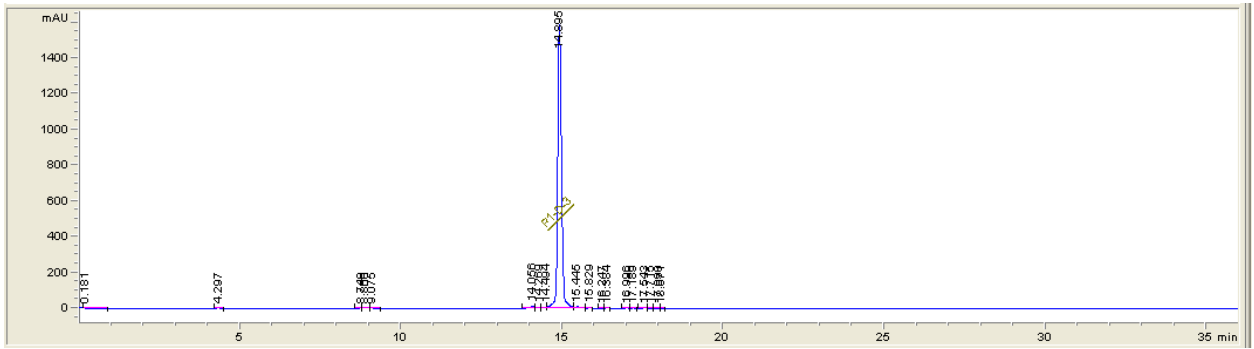
Oligonucleotide Bg6-NOS3-Fam - HPLC traces and MS data



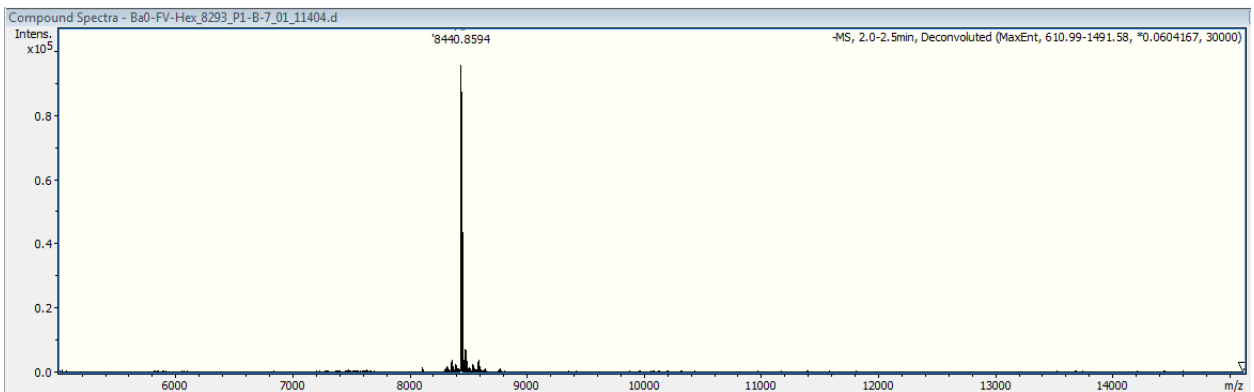
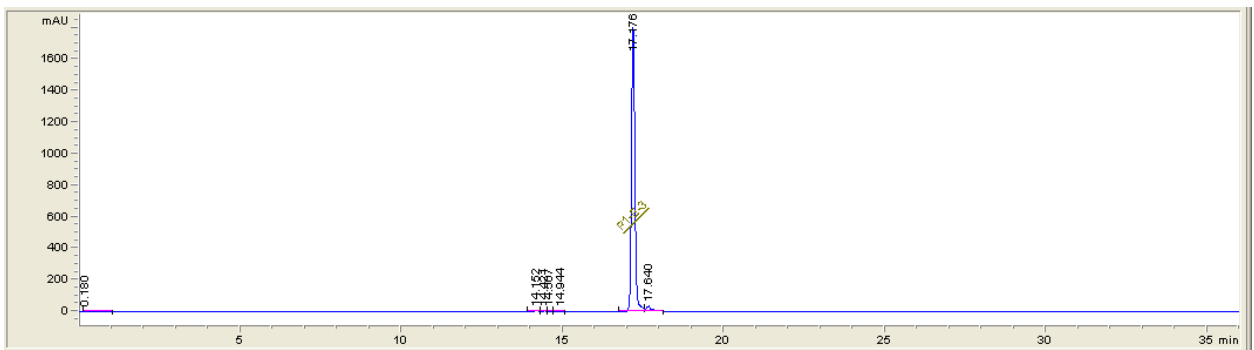
Oligonucleotide Bt6-NOS3-Hex - HPLC traces and MS data



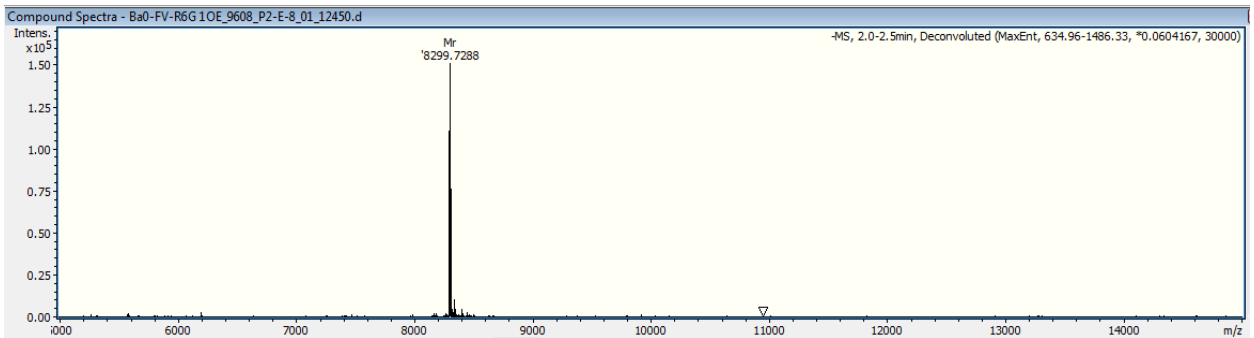
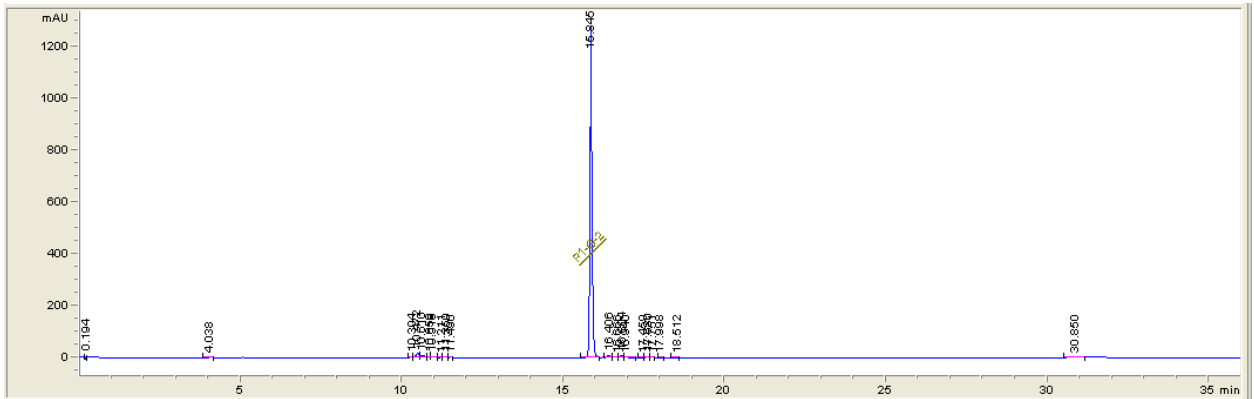
Oligonucleotide Bg0-FV-Fam - HPLC traces and MS data



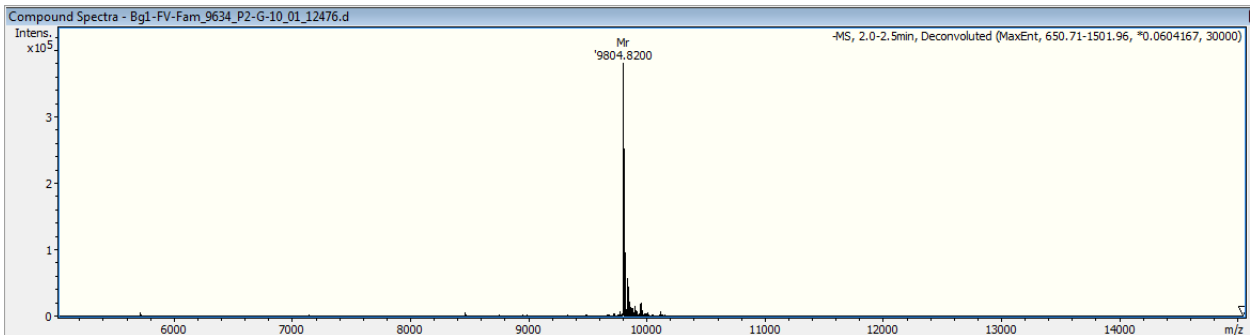
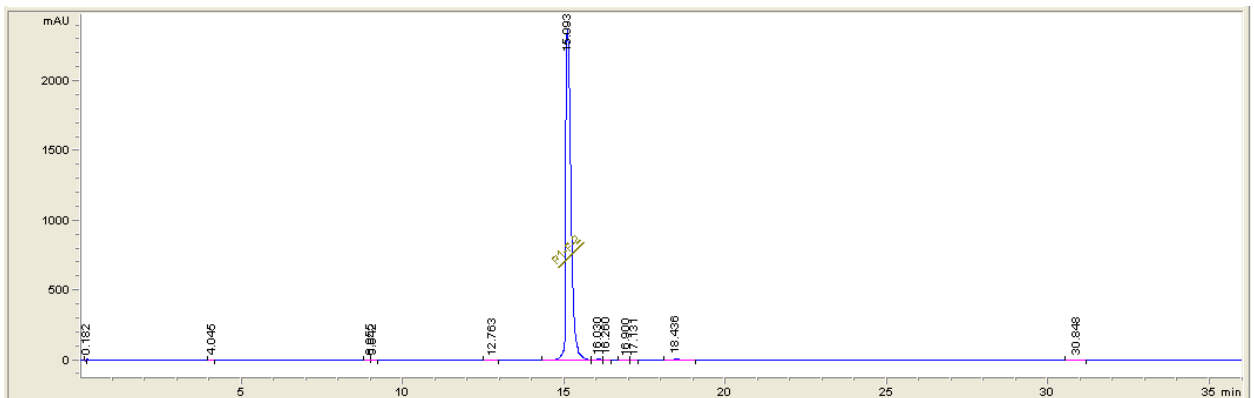
Oligonucleotide Ba0-FV-Hex - HPLC traces and MS data



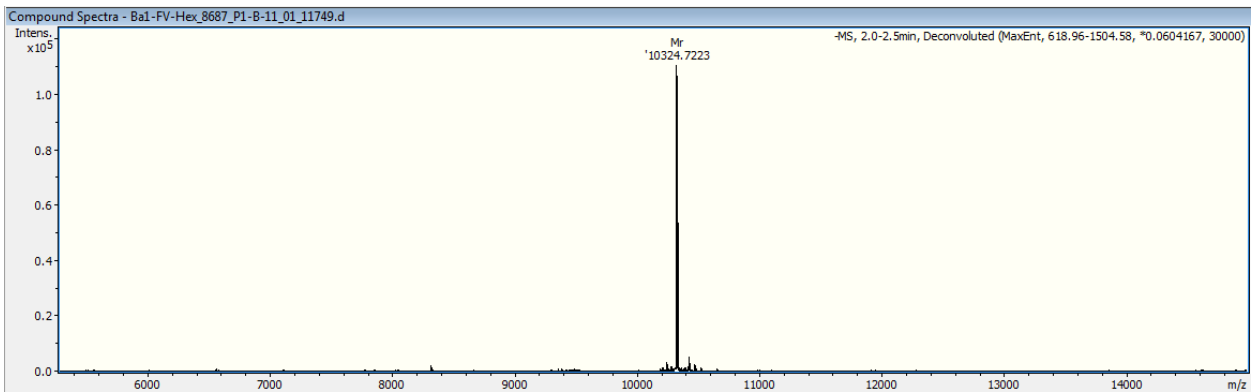
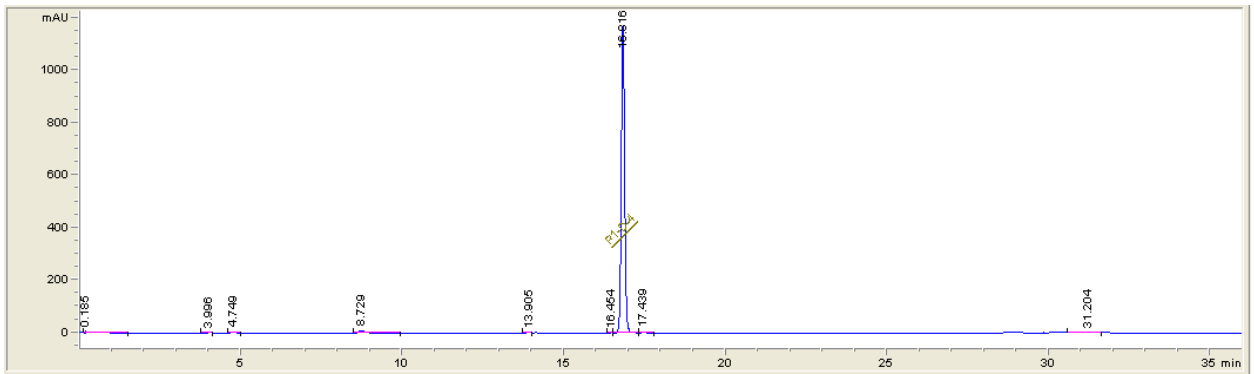
Oligonucleotide Ba0-FV-R6G - HPLC traces and MS data



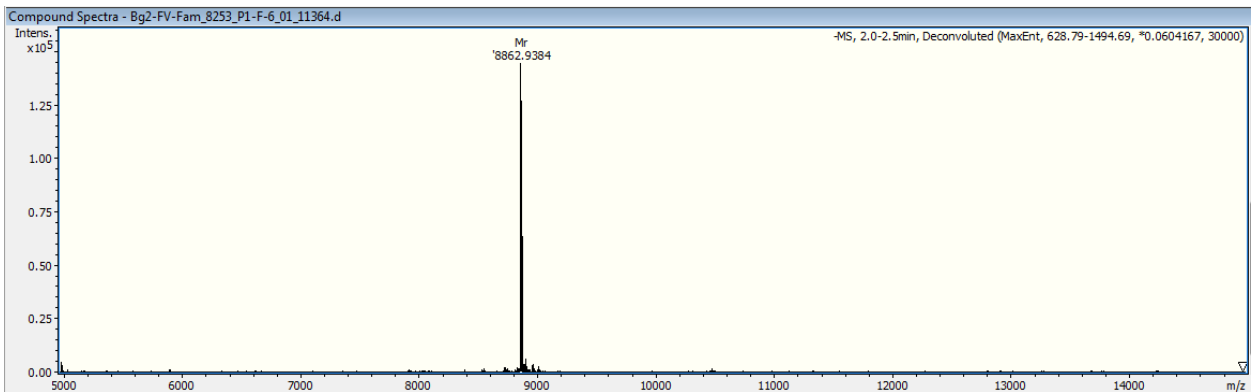
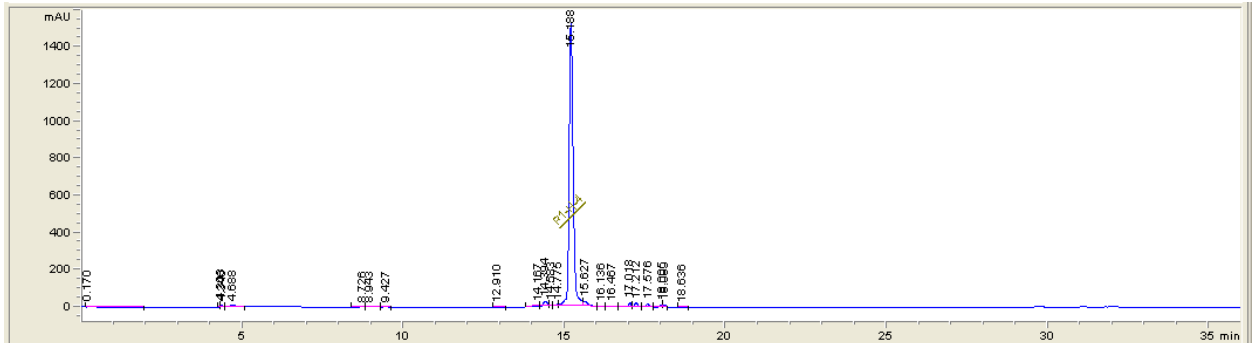
Oligonucleotide Bg1-FV-Fam - HPLC traces and MS data



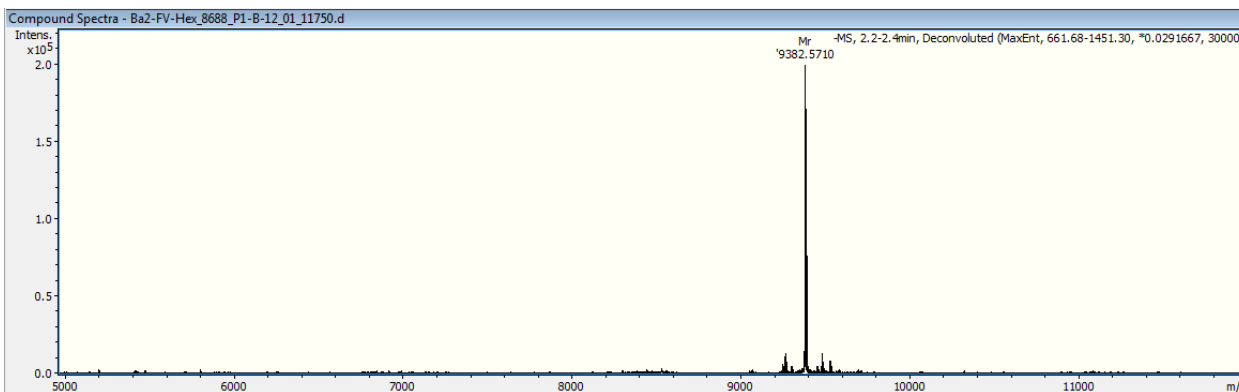
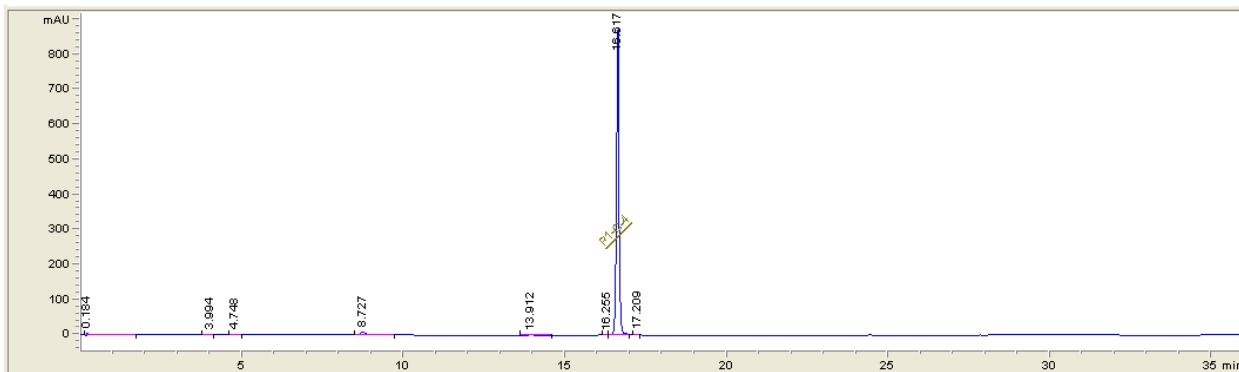
Oligonucleotide Ba1-FV-Hex - HPLC traces and MS data



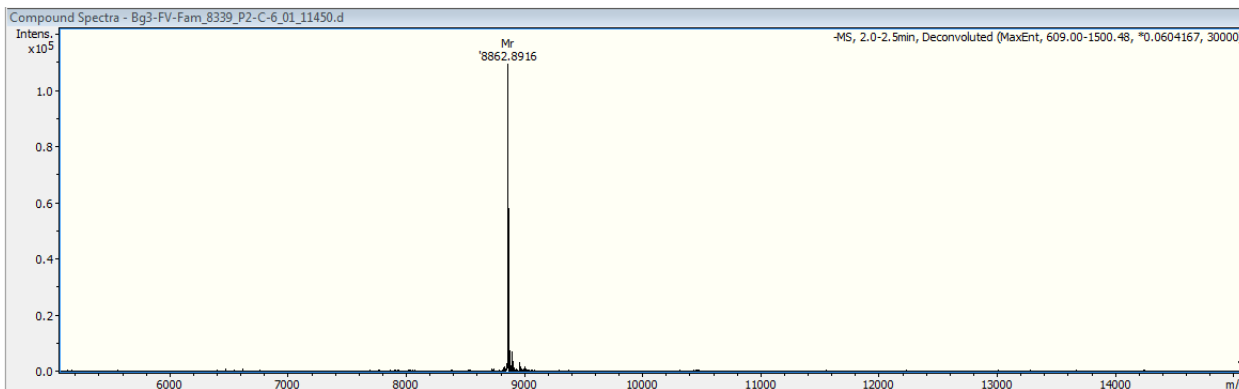
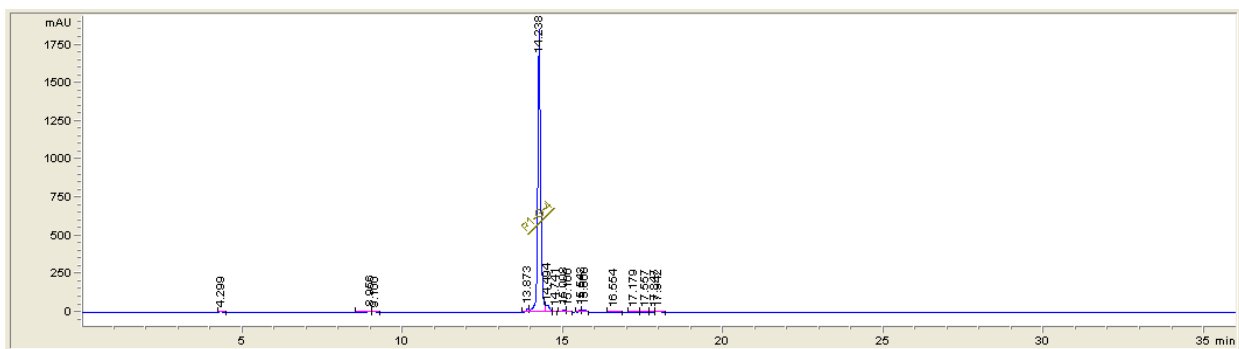
Oligonucleotide Bg2-FV-Fam - HPLC traces and MS data



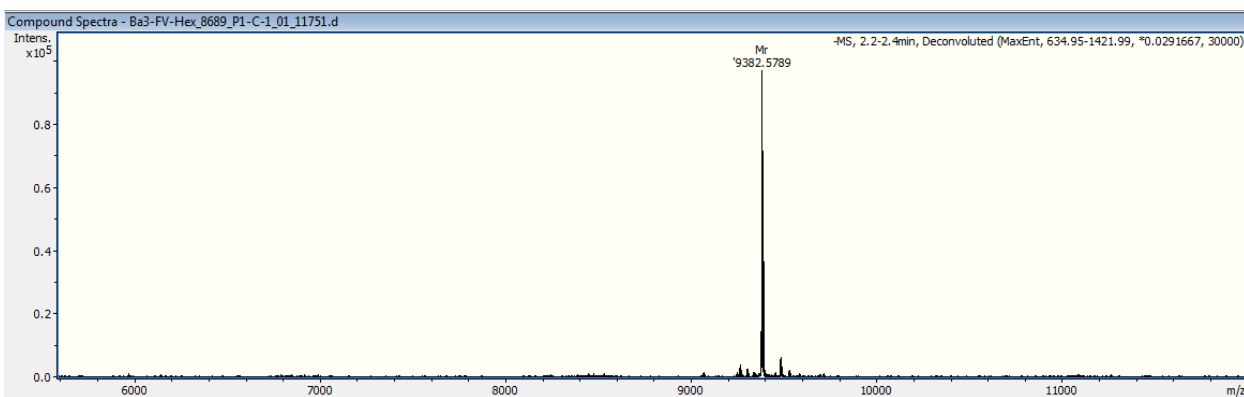
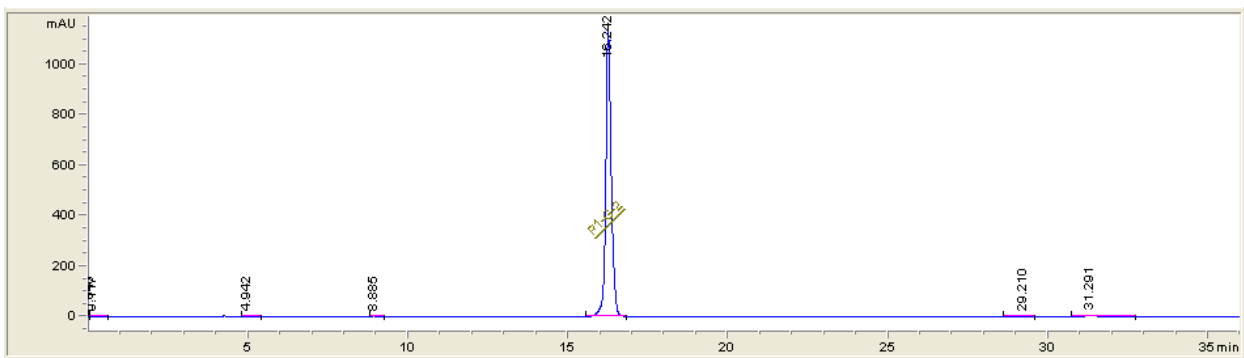
Oligonucleotide Ba2-FV-Hex - HPLC traces and MS data



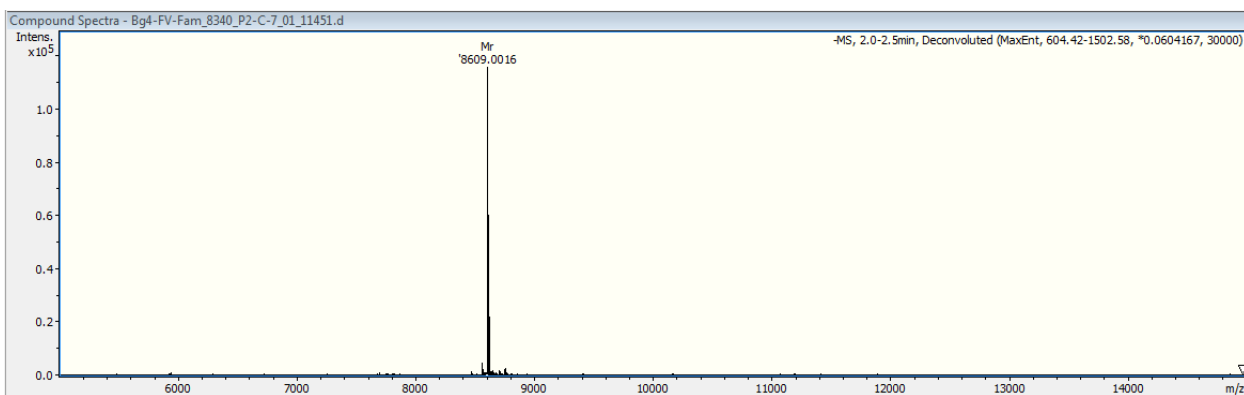
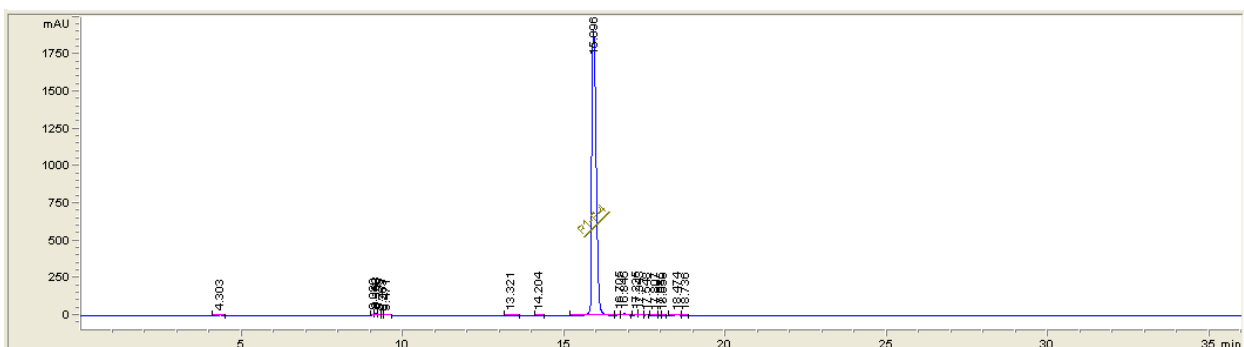
Oligonucleotide Bg3-FV-Fam - HPLC traces and MS data



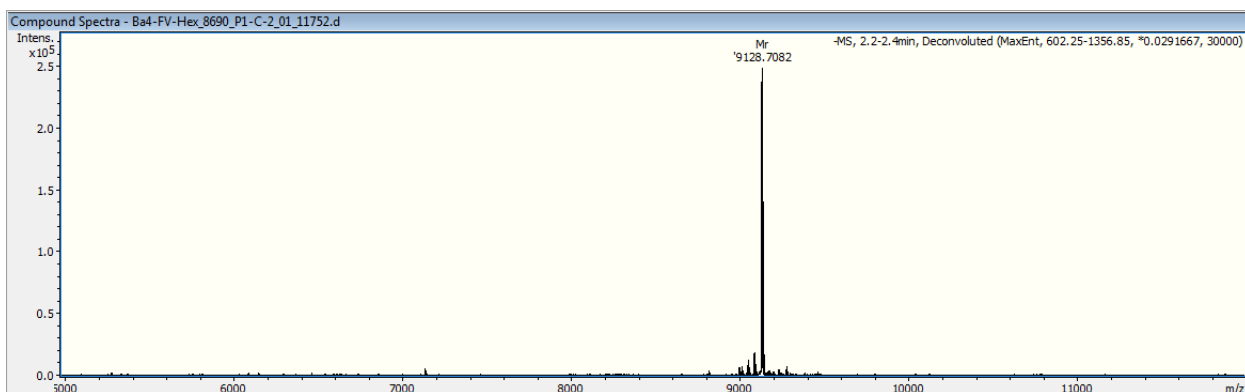
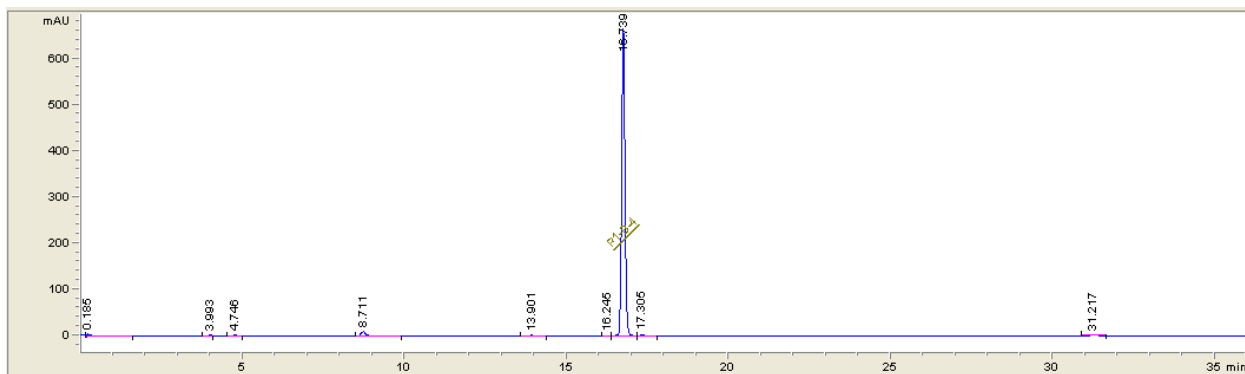
Oligonucleotide Ba3-FV-Hex - HPLC traces and MS data



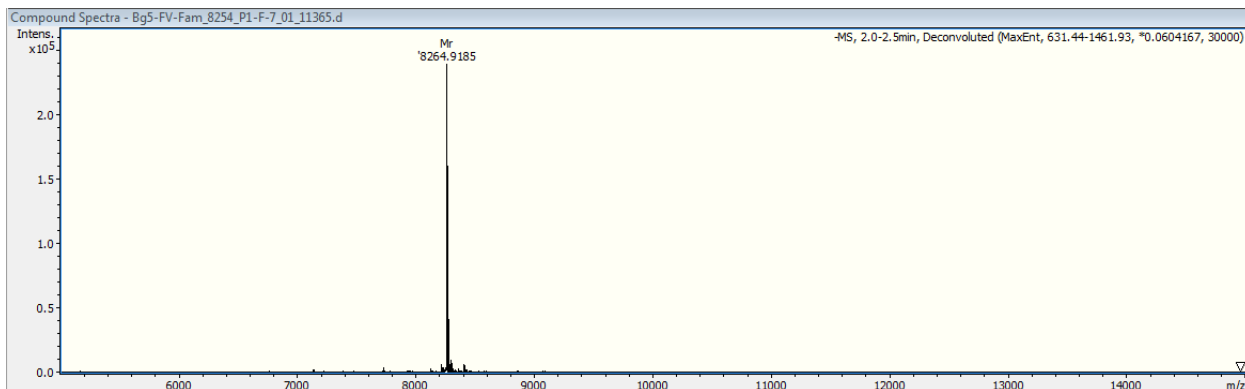
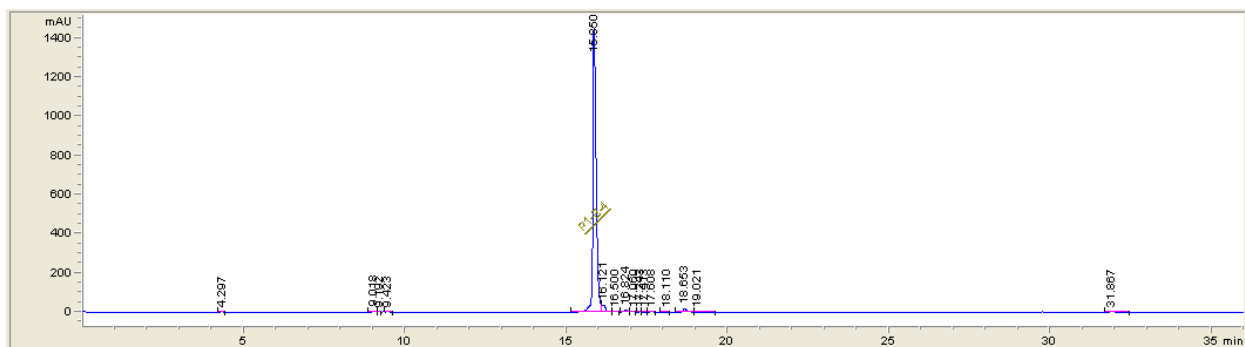
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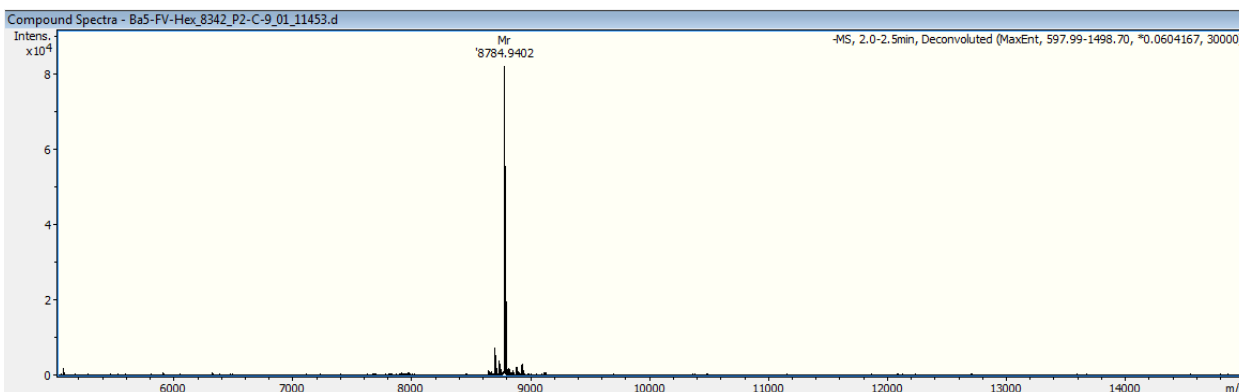
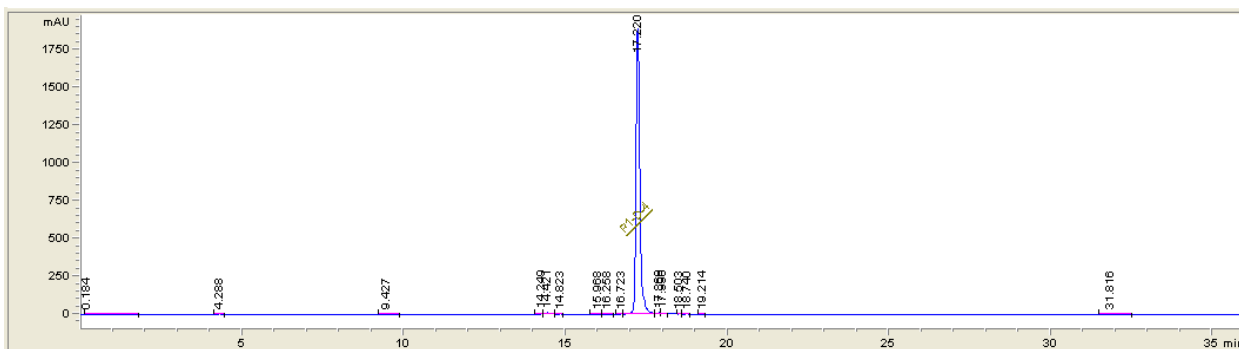
Oligonucleotide Ba4-FV-Hex - HPLC traces and MS data



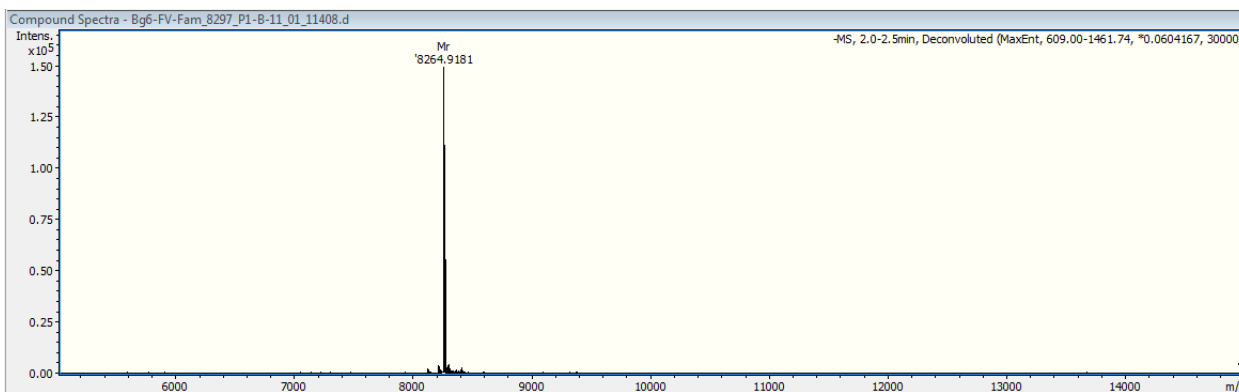
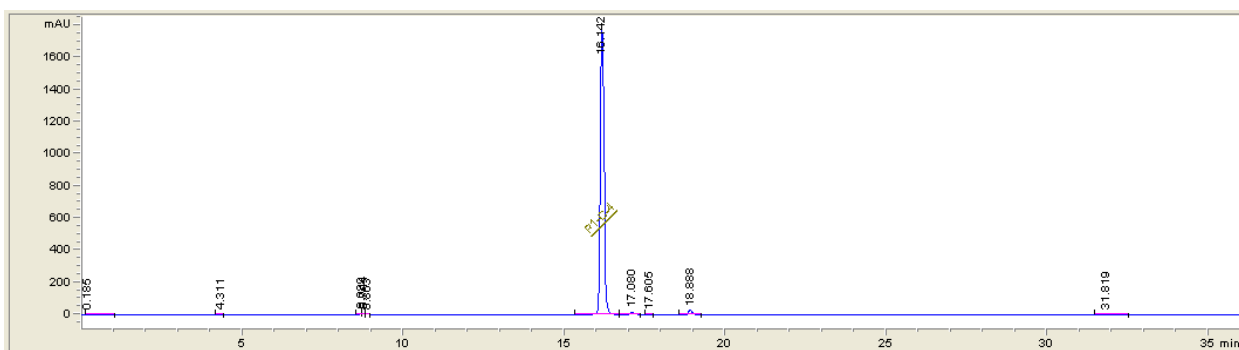
Oligonucleotide Bg5-FV-Fam - HPLC traces and MS data



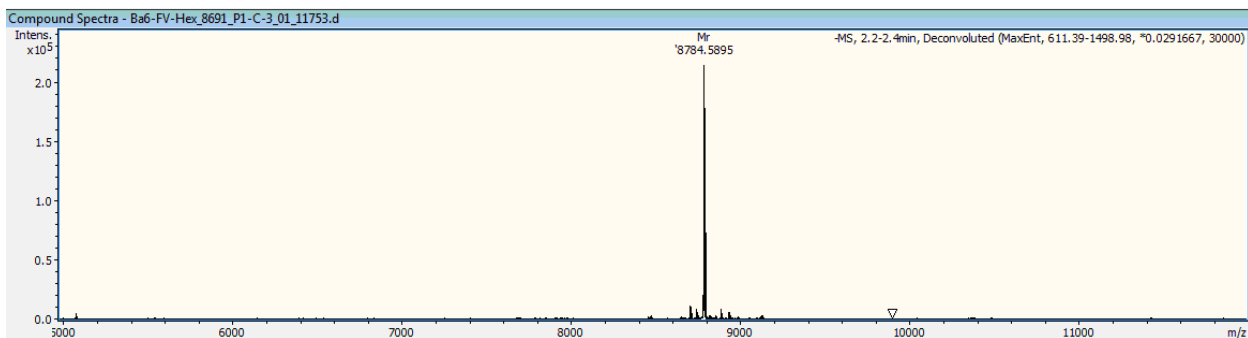
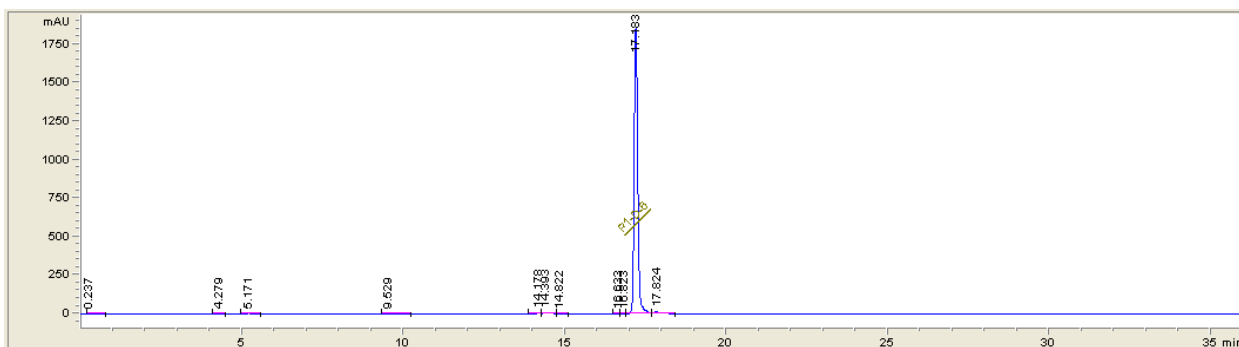
Oligonucleotide Ba5-FV-Hex - HPLC traces and MS data



Oligonucleotide Bg6-FV-Fam - HPLC traces and MS data



Oligonucleotide Ba6-FV-Hex - HPLC traces and MS data



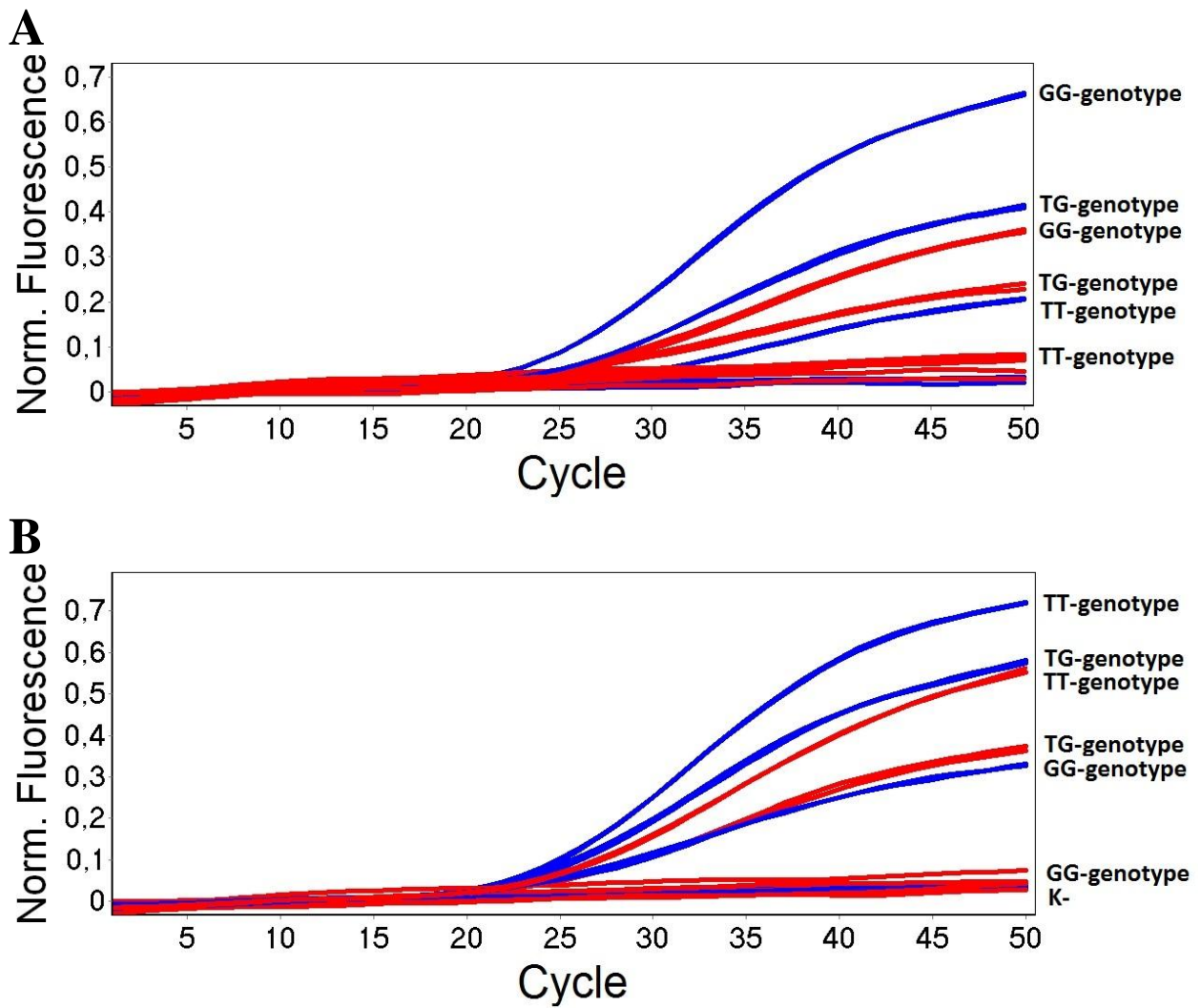


Figure S1. qPCR data for NOS3 SNP detection by MBs (blue: classic b0-nos3 MB, red: b4-nos3 MB with Sp18 linkers), A: FAM channel (b0- or b4-nos-Fam MB for GG allele), B : HEX channel (b0- or b4-nos-Hex MB for TT allele). K- is a void sample.

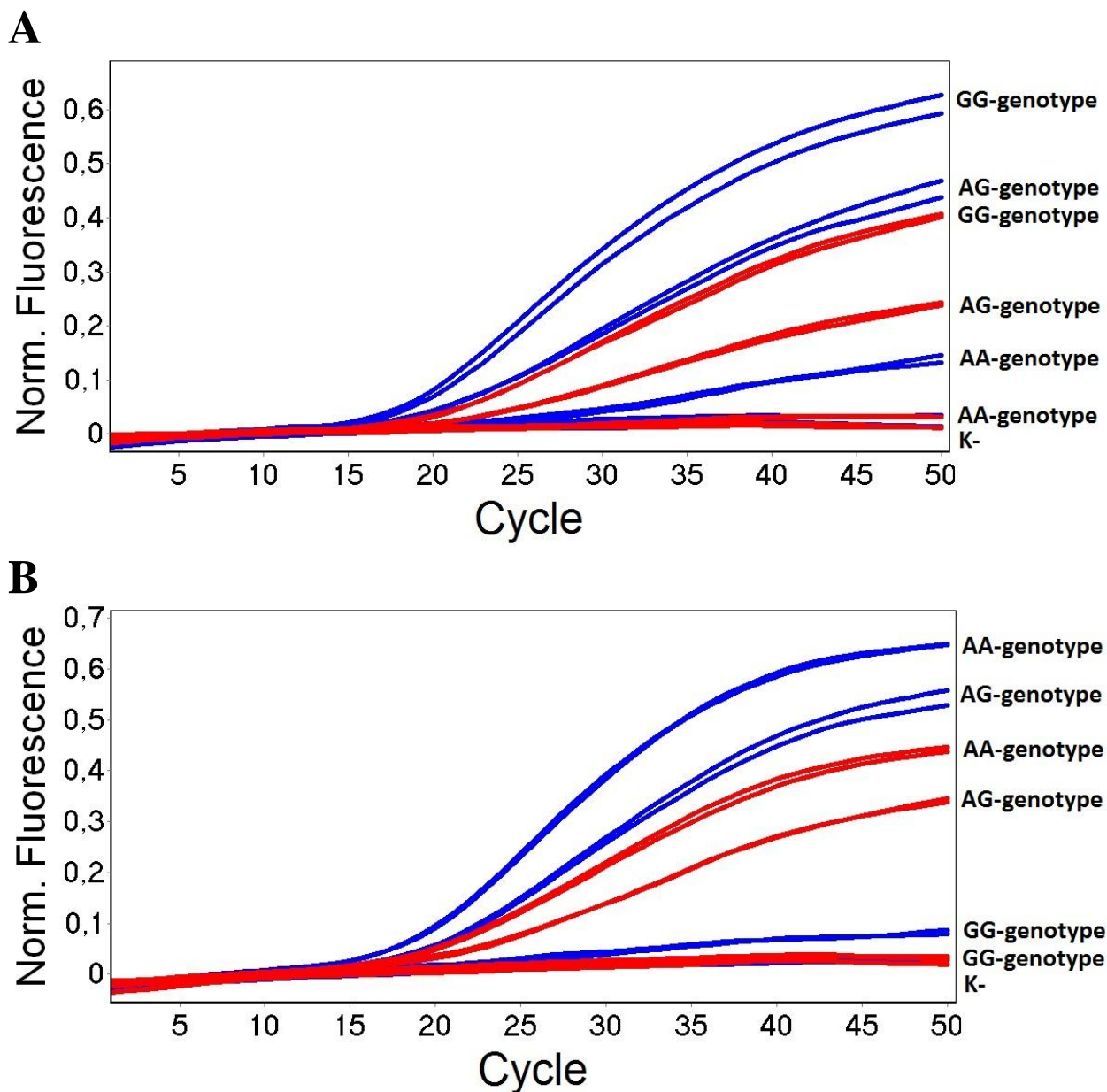


Figure S2. qPCR data for ADRB2 SNP detection by MBs (blue: classic b0-adrb2 MB, red: b4-adrb2 MB with Sp18 linkers), A: FAM channel (b0- or b4-adrb-Fam MB for GG allele), B : HEX channel (b0- or b4-FV-Hex MB for AA allele). K- is a void sample.