DRAWINGS:

Figure 1: Amino acid sequences of :

(a) 2xGLP-1 A8G DOM7h-14 fusion **(DAT0114)**

HGEGTFTSDVSSYLEGQAAKEFIAWLVKGRHGEGTFTSDVSSYLEGQAAKE
FIAWLVKGRDIQMTQSPSSLSASVGDRVTITCRASQWIGSQLSWYQQKPGK
APKLLIMWRSSLQSGVPSRFSGSGSGTDFTLTISSLQPEDFATYYCAQGAALP
RTFGQGTKVEIKR

(SEQ ID NO 1)

(b) Exendin 4, (G4S)3 linker, DOM7h-14 fusion **(DAT0115)**

HGEGTFTSDLSKQMEEEAVRLFIEWLKNGGPSSGAPPPSGGGGGSGGGGSG
GGGSDIQMTQSPSSLSASVGDRVTITCRASQWIGSQLSWYQQKPGKAPKLLI
MWRSSLQSGVPSRFSGSGSGTDFTLTISSLQPEDFATYYCAQGAALPRTFGQ
GTKVEIKR

(SEQ ID NO 2)

(c) Exendin 4 DOM7h-14 fusion **(DAT0116)**

HGEGTFTSDLSKQMEEEAVRLFIEWLKNGGPSSGAPPPSGDIQMTQSPSSLSA
SVGDRVTITCRASQWIGSQLSWYQQKPGKAPKLLIMWRSSLQSGVPSRFSGS
GSGTDFTLTISSLQPEDFATYYCAQGAALPRTFGQGTKVEIKR

(SEQ ID NO 3)

(d) Exendin 4, helical linker, DOM7h-14 fusion **(DAT0117)**

HGEGTFTSDLSKQMEEEAVRLFIEWLKNGGPSSGAPPPSGKEAAAKEAAAK
EAAAKELAAKEAAAKEAAAKEAAAKELAADIQMTQSPSSLSASVGDRVTIT
CRASQWIGSQLSWYQQKPGKAPKLLIMWRSSLQSGVPSRFSGSGSGTDFTLT
ISSLQPEDFATYYCAQGAALPRTFGQGTKVEIKR

(SEQ ID NO 4)

Figure 1 continued:

(e) GLP-1 A8G, (G4S)3, linker DOM7h-14 fusion **(DAT0118)**

HGEGTFTSDVSSYLEGQAAKEFIAWLVKGRGGGGSGGGGSGGGGSDIQMT
QSPSSLSASVGDRVTITCRASQWIGSQLSWYQQKPGKAPKLLIMWRSSLQSG
VPSRFSGSGSGTDFTLTISSLQPEDFATYYCAQGAALPRTFGQGTKVEIKR

(SEQ ID NO 5)

(f) GLP-1 A8G, PSS linker, DOM7h-14 fusion **(DAT0119)**

HGEGTFTSDVSSYLEGQAAKEFIAWLVKGRGPSSDIQMTQSPSSLSASVGDR
VTITCRASQWIGSQLSWYQQKPGKAPKLLIMWRSSLQSGVPSRFSGSGSGTD
FTLTISSLQPEDFATYYCAQGAALPRTFGQGTKVEIKR

(SEQ ID NO 6)

(g) GLP-1 A8G, helical linker, DOM7h-14 fusion **(DAT0120)**

HGEGTFTSDVSSYLEGQAAKEFIAWLVKGRGKEAAAKEAAAKEAAAKELA
AKEAAAKEAAAKEAAAKELAADIQMTQSPSSLSASVGDRVTITCRASQWIG
SQLSWYQQKPGKAPKLLIMWRSSLQSGVPSRFSGSGSGTDFTLTISSLQPEDF
ATYYCAQGAALPRTFGQGTKVEIKR

(SEQ ID NO 7)

(h) DOM7h-14:

DIQMTQSPSSLSASVGDRVTITCRASQWIGSQLSWYQQKPGKAPKLLIMWRS
SLQSGVPSRFSGSGSGTDFTLTISSLQPEDFATYYCAQGAALPRTFGQGTKVE
IKR

(SEQ ID NO 8)

(i) GLP-1 (7-37) A8G:

HGEGTFTSDVSSYLEGQAAKEFIAWLVKGRG

(SEQ ID NO 9)

(j) exendin-4:

HGEGTFTSDLSKQMEEEAVRLFIEWLKNGGPSSGAPPPS

(SEQ ID NO 10)

Figure 1 continued:

(k) helical linker:

KEAAAKEAAAKEAAAKELAAKEAAAKEAAAKEAAAKELAA

(SEQ ID NO 11)

(l) Gly-ser linker:

GGGGGSGGGGSGGGGS

(SEQ ID NO 12)

Figure 2: Nucleic acid sequences

(a) DAT0114 – nucleic acid sequence (from mammalian construct):

CATGGTGAAGGGACCTTTACCAGTGATGTAAGTTCTTATTTGGAAGGCCA
AGCTGCCAAGGAATTCATTGCTTGGCTGGTGAAAGGCCGACATGGTGAA
GGGACCTTTACCAGTGATGTAAGTTCTTATTTGGAAGGCCAAGCTGCCAA
GGAATTCATTGCTTGGCTGGTGAAAGGCCGAGACATCCAGATGACCCAG
TCTCCATCCTCCCTGTCTGCATCTGTAGGAGACCGTGTCACCATCACTTG
CCGGGCAAGTCAGTGGATTGGGTCTCAGTTATCTTGGTACCAGCAGAAA
CCAGGGAAAGCCCCTAAGCTCCTGATCATGTGGCGTTCCTCGTTGCAAA
GTGGGGTCCCATCACGTTTCAGTGGCAGTGGATCTGGGACAGATTTCACT
CTCACCATCAGCAGTCTGCAACCTGAAGATTTTGCTACGTACTACTGTGC
TCAGGGTGCGGCGTTGCCTAGGACGTTCGGCCAAGGGACCAAGGTGGAA
ATCAAACGG

(SEQ ID NO 13)

(b) DAT0115 – nucleic acid sequence (from mammalian construct):

CATGGTGAAGGAACATTTACCAGTGACTTGTCAAAACAGATGGAAGAGG
AGGCAGTGCGGTTATTTATTGAGTGGCTTAAGAACGGAGGACCAAGTAG
CGGGGCACCTCCGCCATCGGGTGGTGGAGGCGGTTCAGGCGGAGGTGGC
AGCGGCGGTGGCGGGTCGGACATCCAGATGACCCAGTCTCCATCCTCCC
TGTCTGCATCTGTAGGAGACCGTGTCACCATCACTTGCCGGGCAAGTCAG
TGGATTGGGTCTCAGTTATCTTGGTACCAGCAGAAACCAGGGAAAGCCC
CTAAGCTCCTGATCATGTGGCGTTCCTCGTTGCAAAGTGGGGTCCCATCA
CGTTTCAGTGGCAGTGGATCTGGGACAGATTTCACTCTCACCATCAGCAG
TCTGCAACCTGAAGATTTTGCTACGTACTACTGTGCTCAGGGTGCGGCGT
TGCCTAGGACGTTCGGCCAAGGGACCAAGGTGGAAATCAAACGG

(SEQ ID NO 14)

Figure 2 continued:

(c) DAT0115 – nucleic acid sequence (from E.coli construct):

CACGGTGAAGGTACCTTCACCTCTGACCTGAGCAAACAGATGGAGGAAG
AAGCGGTTCGTCTGTTCATCGAGTGGCTGAAAAACGGTGGTCCGTCTTCT
GGTGCTCCGCCACCGTCTGGTGGTGGTGGTGGTTCTGGTGGTGGTGGTTC
TGGTGGTGGCGGTAGCGACATCCAGATGACTCAGTCCCCAAGCTCTCTGT
CTGCCTCCGTTGGCGATCGTGTTACGATCACGTGCCGTGCTTCTCAGTGG
ATCGGTTCCCAGCTGTCCTGGTATCAGCAGAAACCGGGCAAAGCCCCGA
AACTCCTGATCATGTGGCGTAGCTCTCTGCAGTCTGGTGTACCGAGCCGC
TTCTCTGGTTCTGGTTCTGGTACCGACTTCACCCTGACCATTTCCTCTCTG
CAGCCGGAAGATTTCGCGACCTACTACTGTGCTCAGGGTGCGGCACTGC
CACGTACTTTTGGCCAGGGTACGAAAGTCGAGATTAAACGTTAATGA

(SEQ ID NO 15)

(d) DAT0116 – nucleic acid sequence (from mammalian construct):

CATGGTGAAGGAACATTTACCAGTGACTTGTCAAAACAGATGGAAGAGG
AGGCAGTGCGGTTATTTATTGAGTGGCTTAAGAACGGAGGACCAAGTAG
CGGGGCACCTCCGCCATCGGGTGACATCCAGATGACCCAGTCTCCATCCT
CCCTGTCTGCATCTGTAGGAGACCGTGTCACCATCACTTGCCGGGCAAGT
CAGTGGATTGGGTCTCAGTTATCTTGGTACCAGCAGAAACCAGGGAAAG
CCCCTAAGCTCCTGATCATGTGGCGTTCCTCGTTGCAAAGTGGGGTCCCA
TCACGTTTCAGTGGCAGTGGATCTGGGACAGATTTCACTCTCACCATCAG
CAGTCTGCAACCTGAAGATTTTGCTACGTACTACTGTGCTCAGGGTGCGG
CGTTGCCTAGGACGTTCGGCCAAGGGACCAAGGTGGAAATCAAACGG

(SEQ ID NO 16)

Figure 2 continued:

(e) DAT0116 – nucleic acid sequence (from E.coli construct):

CACGGTGAAGGTACCTTCACCTCTGACCTGAGCAAACAGATGGAGGAAG
AAGCGGTTCGTCTGTTCATCGAGTGGCTGAAAAACGGTGGTCCGTCTTCT
GGTGCTCCGCCACCGTCTGACATCCAGATGACTCAGTCCCCAAGCTCTCT
GTCTGCCTCCGTTGGCGATCGTGTTACGATCACGTGCCGTGCTTCTCAGT
GGATCGGTTCCCAGCTGTCCTGGTATCAGCAGAAACCGGGCAAAGCCCC
GAAACTCCTGATCATGTGGCGTAGCTCTCTGCAGTCTGGTGTACCGAGCC
GCTTCTCTGGTTCTGGTTCTGGTACCGACTTCACCCTGACCATTTCCTCTC
TGCAGCCGGAAGA
TTTCGCGACCTACTACTGTGCTCAGGGTGCGGCACTGCCACGTACTTTTG
GCCAGGGTACGAAAGTCGAGATTAAACGTTAATGA

(SEQ ID NO 17)

(f) DAT0117 – nucleic acid sequence (from mammalian construct):

CATGGTGAAGGAACATTTACCAGTGACTTGTCAAAACAGATGGAAGAGG
AGGCAGTGCGGTTATTTATTGAGTGGCTTAAGAACGGAGGACCAAGTAG
CGGGGCACCTCCGCCATCGGGTAAAGAAGCGGCGGCGAAAGAAGCGGC
GGCGAAAGAAGCGGCGGCGAAAGAATTGGCCGCAAAAGAAGCGGCGGC
GAAAGAAGCGGCGGCGAAAGAAGCGGCGGCGAAAGAATTGGCCGCAGA
CATCCAGATGACCCAGTCTCCATCCTCCCTGTCTGCATCTGTAGGAGACC
GTGTCACCATCACTTGCCGGGCAAGTCAGTGGATTGGGTCTCAGTTATCT
TGGTACCAGCAGAAACCAGGGAAAGCCCCTAAGCTCCTGATCATGTGGC
GTTCCTCGTTGCAAAGTGGGGTCCCATCACGTTTCAGTGGCAGTGGATCT
GGGACAGATTTCACTCTCACCATCAGCAGTCTGCAACCTGAAGATTTTGC
TACGTACTACTGTGCTCAGGGTGCGGCGTTGCCTAGGACGTTCGGCCAA
GGGACCAAGGTGGAAATCAAACGG

(SEQ ID NO 18)

Figure 2 continued:

(g) DAT0117 – nucleic acid sequence (from E.coli construct):

CACGGTGAAGGTACCTTCACCTCTGACCTGAGCAAACAGATGGAGGAAG
AAGCGGTTCGTCTGTTCATCGAGTGGCTGAAAAACGGTGGTCCGTCTTCT
GGTGCTCCGCCACCGTCTAAAGAAGCGGCGGCGAAAGAAGCGGCGGCG
AAAGAAGCGGCGGCGAAAGAATTGGCCGCAAAAGAAGCGGCGGCGAAA
GAAGCGGCGGCGAAAGAAGCGGCGGCGAAAGAATTGGCCGCAGACATC
CAGATGACTCAGTCCCCAAGCTCTCTGTCTGCCTCCGTTGGCGATCGTGT
TACGATCACGTGCCGTGCTTCTCAGTGGATCGGTTCCCAGCTGTCCTGGT
ATCAGCAGAAACCGGGCAAAGCCCCGAAACTCCTGATCATGTGGCGTAG
CTCTCTGCAGTCTGGTGTACCGAGCCGCTTCTCTGGTTCTGGTTCTGGTAC
CGACTTCACCCTGACCATTTCCTCTCTGCAGCCGGAAGATTTCGCGACCT
ACTACTGTGCTCAGGGTGCGGCACTGCCACGTACTTTTGGCCAGGGTACG
AAAGTCGAGATTAAACGTTAATGA

(SEQ ID NO 19)

(h) DAT0118 – nucleic acid sequence (from mammalian construct):

CATGGTGAAGGGACCTTTACCAGTGATGTAAGTTCTTATTTGGAAGGCCA
AGCTGCCAAGGAATTCATTGCTTGGCTGGTGAAAGGCCGAGGTGGAGGC
GGTTCAGGCGGAGGTGGCAGCGGCGGTGGCGGGTCGGACATCCAGATG
ACCCAGTCTCCATCCTCCCTGTCTGCATCTGTAGGAGACCGTGTCACCAT
CACTTGCCGGGCAAGTCAGTGGATTGGGTCTCAGTTATCTTGGTACCAGC
AGAAACCAGGGAAAGCCCCTAAGCTCCTGATCATGTGGCGTTCCTCGTT
GCAAAGTGGGGTCCCATCACGTTTCAGTGGCAGTGGATCTGGGACAGAT
TTCACTCTCACCATCAGCAGTCTGCAACCTGAAGATTTTGCTACGTACTA
CTGTGCTCAGGGTGCGGCGTTGCCTAGGACGTTCGGCCAAGGGACCAAG
GTGGAAATCAAACGG

(SEQ ID NO 20)

Figure 2 continued:

(i) DAT0119 – nucleic acid sequence (from mammalian construct):

CATGGTGAAGGGACCTTTACCAGTGATGTAAGTTCTTATTTGGAAGGCCA
AGCTGCCAAGGAATTCATTGCTTGGCTGGTGAAAGGCCGAGGACCAAGC
TCGGACATCCAGATGACCCAGTCTCCATCCTCCCTGTCTGCATCTGTAGG
AGACCGTGTCACCATCACTTGCCGGGCAAGTCAGTGGATTGGGTCTCAG
TTATCTTGGTACCAGCAGAAACCAGGGAAAGCCCCTAAGCTCCTGATCA
TGTGGCGTTCCTCGTTGCAAAGTGGGGTCCCATCACGTTTCAGTGGCAGT
GGATCTGGGACAGATTTCACTCTCACCATCAGCAGTCTGCAACCTGAAG
ATTTTGCTACGTACTACTGTGCTCAGGGTGCGGCGTTGCCTAGGACGTTC
GGCCAAGGGACCAAGGTGGAAATCAAACGG

(SEQ ID NO 21)

(j) DAT0120 – nucleic acid sequence (from mammalian construct):

CATGGTGAAGGGACCTTTACCAGTGATGTAAGTTCTTATTTGGAAGGCCA
AGCTGCCAAGGAATTCATTGCTTGGCTGGTGAAAGGCCGAGGAAAAGAA
GCGGCGGCGAAAGAAGCGGCGGCGAAAGAAGCGGCGGCGAAAGAATTG
GCCGCAAAAGAAGCGGCGGCGAAAGAAGCGGCGGCGAAAGAAGCGGC
GGCGAAAGAATTGGCCGCAGACATCCAGATGACCCAGTCTCCATCCTCC
CTGTCTGCATCTGTAGGAGACCGTGTCACCATCACTTGCCGGGCAAGTCA
GTGGATTGGGTCTCAGTTATCTTGGTACCAGCAGAAACCAGGGAAAGCC
CCTAAGCTCCTGATCATGTGGCGTTCCTCGTTGCAAAGTGGGGTCCCATC
ACGTTTCAGTGGCAGTGGATCTGGGACAGATTTCACTCTCACCATCAGCA
GTCTGCAACCTGAAGATTTTGCTACGTACTACTGTGCTCAGGGTGCGGCG
TTGCCTAGGACGTTCGGCCAAGGGACCAAGGTGGAAATCAAACGG

(SEQ ID NO 22)

Figure 2 continued:

(k) Dom7h-14 – nucleic acid sequence

GACATCCAGATGACCCAGTCTCCATCCTCCCTGTCTGCATCTGTAGGAGA
CCGTGTCACCATCACTTGCCGGGCAAGTCAGTGGATTGGGTCTCAGTTAT
CTTGGTACCAGCAGAAACCAGGGAAAGCCCCTAAGCTCCTGATCATGTG
GCGTTCCTCGTTGCAAAGTGGGGTCCCATCACGTTTCAGTGGCAGTGGAT
CTGGGACAGATTTCACTCTCACCATCAGCAGTCTGCAACCTGAAGATTTT
GCTACGTACTACTGTGCTCAGGGTGCGGCGTTGCCTAGGACGTTCGGCCA
AGGGACCAAGGTGGAAATCAAACGG

(SEQ ID NO 23)

Figure 3a: shows dose dependent reduction in body weight in mouse model of obesity by administering DAT0115.

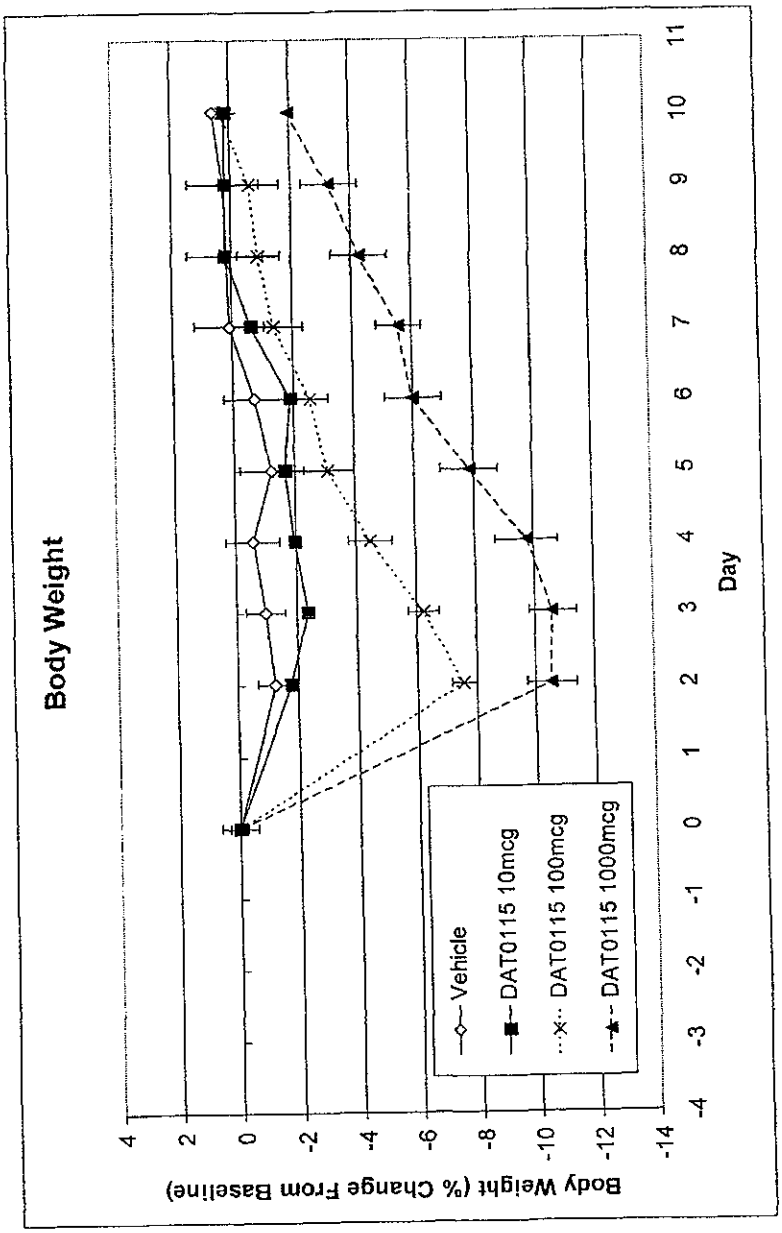


Figure 3b: shows daily food consumption in mouse model of obesity by administering DAT0115.

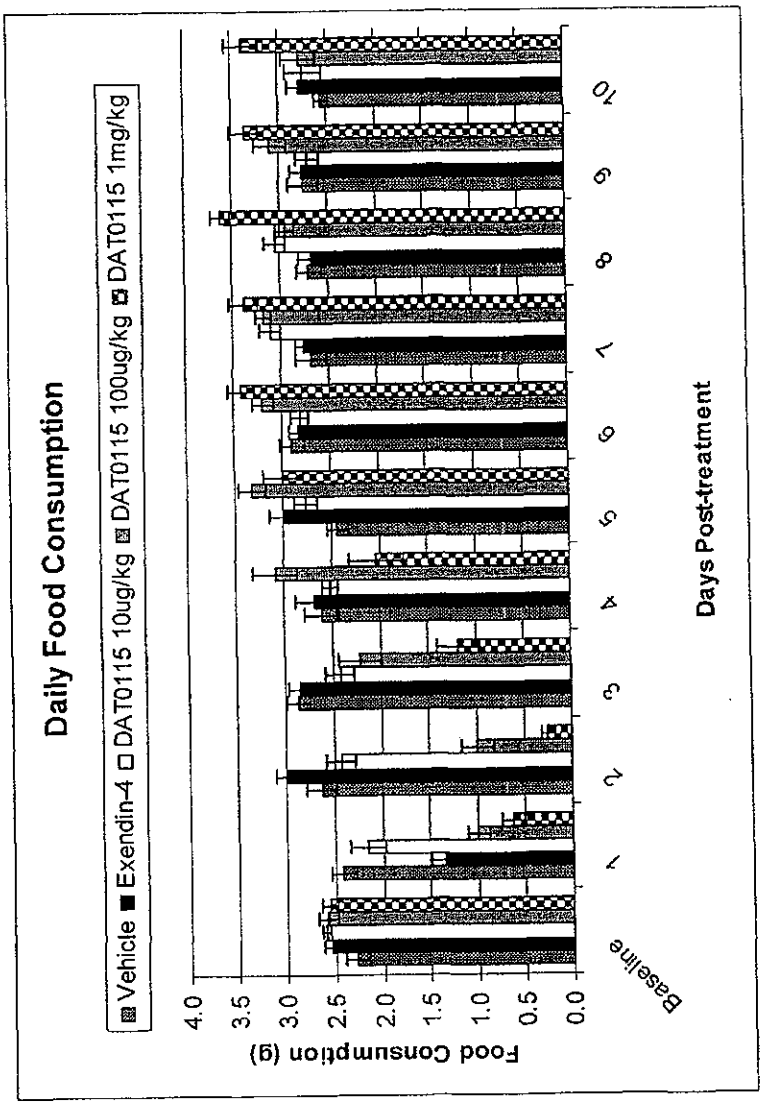


Figure 4: DSC of DAT0115: Solid line – DAT0115 trace, dotted line – fit to a non-2-state model.

5

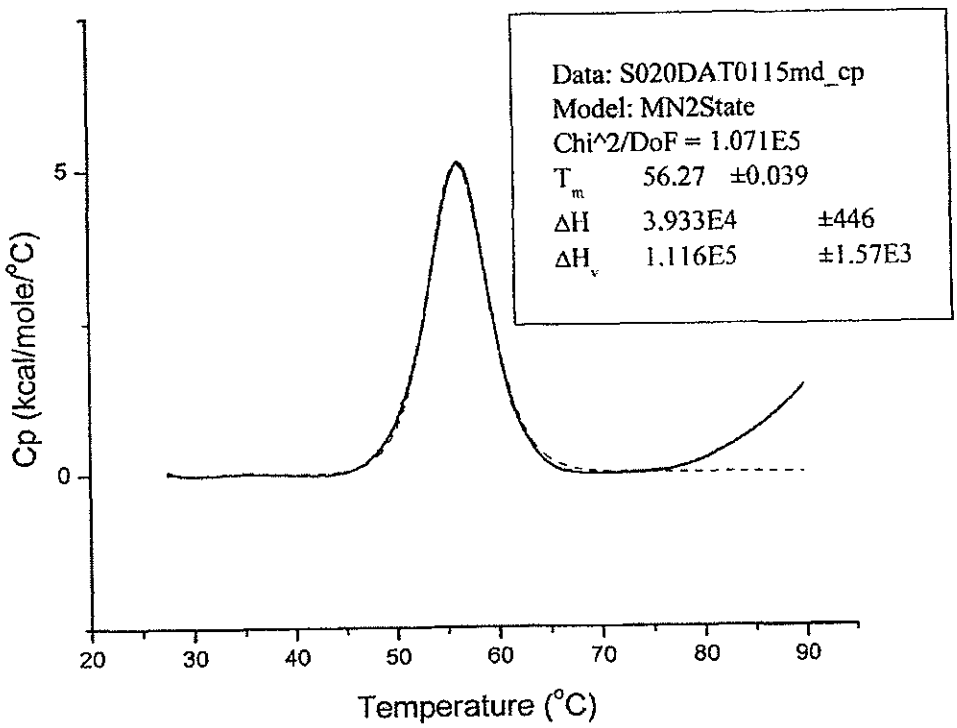


Figure 5: DSC of Lysozyme: Solid line – lysozyme trace, dotted line – fit to a non-2-state model (traces overlay so dotted trace cannot be seen)

5

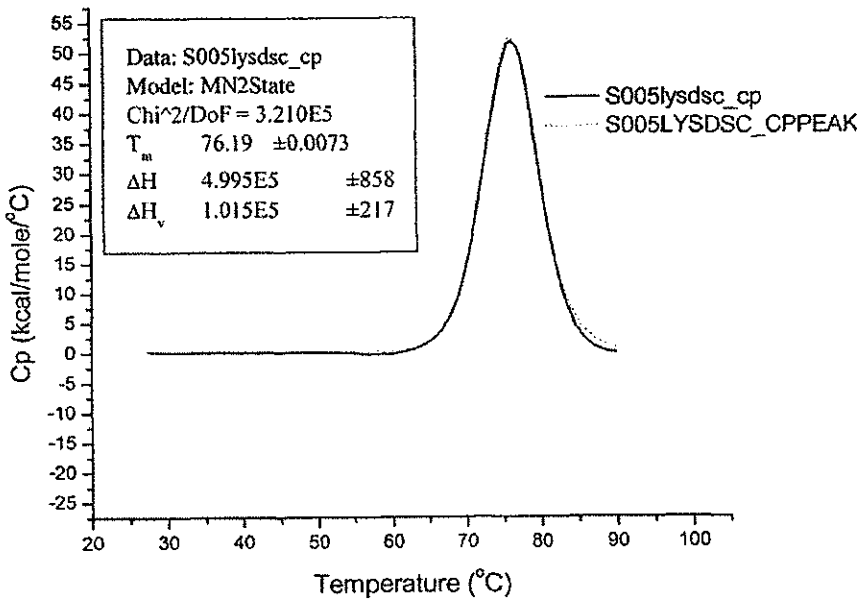
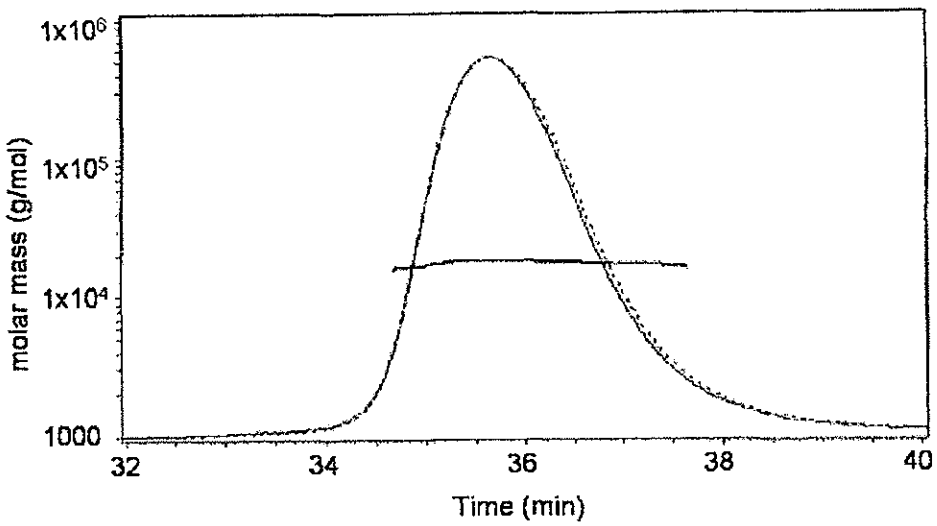
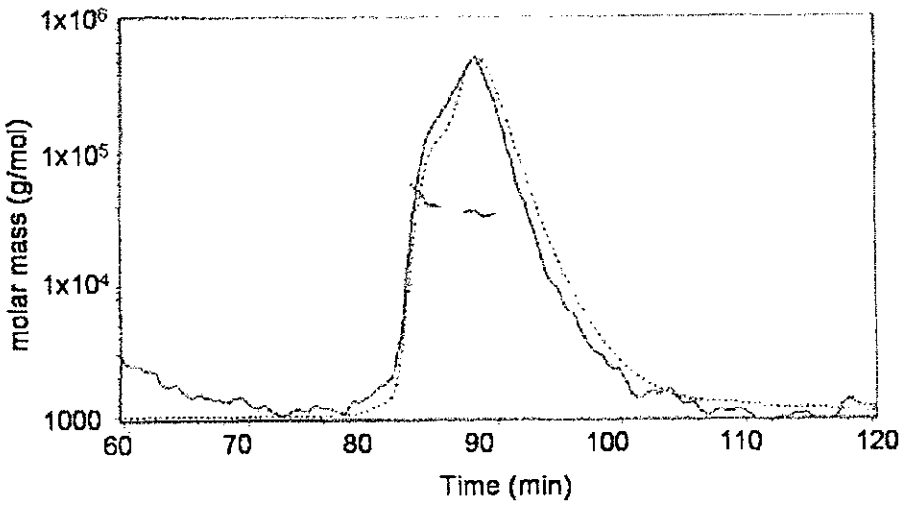


Figure 6: SEC MALLS of DAT0115



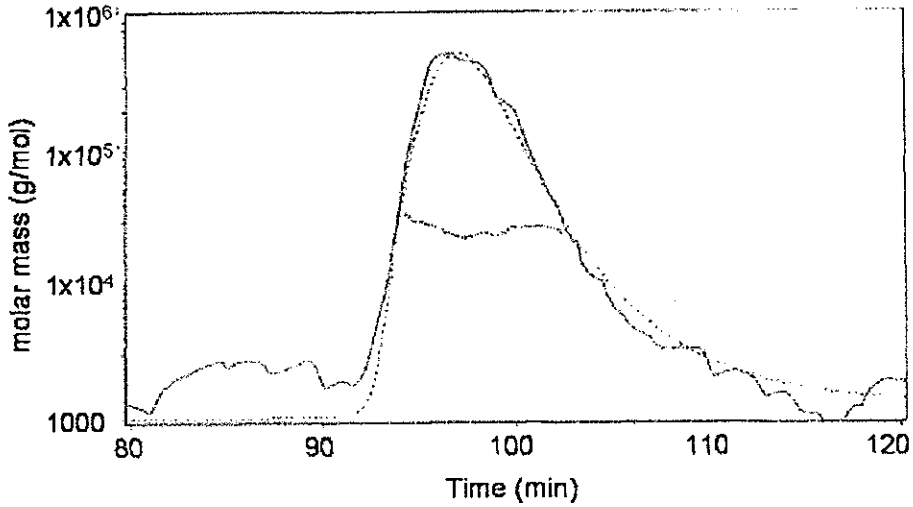
	Peak 1
Polydispersity	
Mw/Mn	**Mw/Mn**
Mz/Mn	**Mz/Mn**
Molar mass moments (g/mol)	
Mn	1.741e+4(1%)
Mw	1.743e+4(1%)
Mz	1.744e+4(3%)
Peak limits (min)	34.682-37.664
Injected mass (g)	1.0000e-4
Calc. mass (g)	9.9398e-5

Figure 7: SEC MALLS of DAT0117



	Peak 1	Peak 2
Polydispersity		
Mw/Mn	1.017(25%)	1.001(17%)
Mz/Mn	1.037(46%)	1.003(30%)
Molar mass moments (g/mol)		
Mn	4.378e+4(17%)	3.471e+4(12%)
Mw	4.454e+4(18%)	3.475e+4(12%)
Mz	4.538e+4(42%)	3.480e+4(27%)
Peak limits (min)	8.311 - 8.564	8.728 - 8.992
Injected mass (g)	2.0000e-4	
Calc. mass (g)	2.2014e-5	3.5001e-5

Figure 8: SEC MALLS of DAT0120



	Peak 1
Polydispersity	
Mw/Mn	1.009(16%)
Mz/Mn	1.019(29%)
Molar mass moments (g/mol)	
Mn	2.532e+4(11%)
Mw	2.555e+4(12%)
Mz	2.579e+4(26%)
Peak limits (min)	9.447-10.272
Injected mass (g)	1.5500e-4
Calc. mass (g)	6.3720e-5