VSDL
EVVPPQVLSEPNEEAGAALSPLPEVPPWTGEVSPAQR (SEQ ID No:2)

B72R- VSDL
MKEVKSLLLDLQLLLEKVKNPENLKLSRMHTFDFYVPK
VNATELKHLKALLEELKLLEEVLNLAPSKNLNVDR↓
EVVPPQVLSEPNEEAGAALSPLPEVPPWTGEVSPAQR (SEQ ID No:11)

B72R-(VSDL)$_3$
MKEVKSLLLDLQLLLEKVKNPENLKLSRMHTFDFYVPK
VNATELKHLKALLEELKLLEEVLNLAPSKNLNVDR↓
EVVPPQVLSEPNEEAGAALSPLPEVPPWTGEVSPAQR↓
EVVPPQVLSEPNEEAGAALSPLPEVPPWTGEVSPAQR↓
EVVPPQVLSEPNEEAGAALSPLPEVPPWTGEVSPAQR↓(SEQ ID No:12)

Figure 1

B72R-VSDL (340 bp)

CAT*ATGAAAGAAGTGAAGTCATTGCTGCTGGATTTACAGTTGCTTTTGGAGAAAGTTAAAAATCCTGAGAACCTCAAGCTCTCCAGGATGCATACATTTG*
ACTTTTACGTGCCCAAGGTTAACGCTACAGAATTGAAACATCTTAAGGCGTTACTAGAAGAACTCAAACTTCTAGAGGAAGTACTAAATTTAGCTCCAAG
*CAAAAACCTGAACGTCGACCGT*GAAGTTGTACCGCCGCAGGTTCTGTCTGAACCGAACGAAGAAGCGGGTGCGGCGCTGTCTCCGCTGCCGGAAGTTCCG
CCGTGGACCGGTGAAGTGAGCCCAGCGCAGCGTTAAGCTT (SEQ ID No:14)

B72R-(VSDL)$_3$ (562 bp)

CAT*ATGAAAGAAGTGAAGTCATTGCTGCTGGATTTACAGTTGCTTTTGGAGAAAGTTAAAAATCCTGAGAACCTCAAGCTCTCCAGGATGCATACATTTG*
ACTTTTACGTGCCCAAGGTTAACGCTACAGAATTGAAACATCTTAAGGCGTTACTAGAAGAACTCAAACTTCTAGAGGAAGTACTAAATTTAGCTCCAAG
*CAAAAACCTGAACGTCGACCGT*GAAGTTGTACCGCCGCAGGTTCTGTCTGAACCGAACGAAGAAGCGGGTGCGGCGCTGTCTCCGCTGCCGGAAGTTCCG
CCGTGGACCGGTGAGGTGAGCCCAGCGCAGCGCGAAGTTGTACCGCCGCAGGTTCTGTCTGAACCGAACGAAGAAGCGGGTGCGGCGCTGTCTCCGCTGC
CGGAAGTTCCGCCATGGACCGGCGAAGTGAGCCCAGCGCAGCGCGAAGTTGTACCGCCGCAGGTTCTGTCTGAACCGAACGAAGAAGCGGGTGCGGCGCT
GTCTCCGCTGCCGGAAGTTCCGCCATGGACCGGTGAAGTGAGCCCAGCGCAGCGTTAAGCTT (SEQ ID No:15)

B72(Q)R-(VSDL)$_3$ (562 bp)

CAT*ATGAAAGAAGTGAAGTCATTGCTGCTGGATTTACAGTTGCTTTTGGAGAAAGTTAAAAATCCTGAGAACCTCAAGCTCTCCAGGATGCATACATTTG*
ACTTTTACGTGCCCAAGGTTAACGCTACAGAATTGAAACATCTTAAGGCGTTACTAGAAGAACTCAAACTTCTAGAGGAAGTACTAAATTTAGCTCCAAG
*CAAAAACCTGAACGTCCAGCGT*GAAGTTGTACCGCCGCAGGTTCTGTCTGAACCGAACGAAGAAGCGGGTGCGGCGCTGTCTCCGCTGCCGGAAGTTCCG
CCGTGGACCGGTGAGGTGAGCCCAGCGCAGCGCGAAGTTGTACCGCCGCAGGTTCTGTCTGAACCGAACGAAGAAGCGGGTGCGGCGCTGTCTCCGCTGC
CGGAAGTTCCGCCATGGACCGGCGAAGTGAGCCCAGCGCAGCGCGAAGTTGTACCGCCGCAGGTTCTGTCTGAACCGAACGAAGAAGCGGGTGCGGCGCT
GTCTCCGCTGCCGGAAGTTCCGCCATGGACCGGTGAAGTGAGCCCAGCGCAGCGTTAAGCTT (SEQ ID No:16)

B72(Q)R-(VSDL)$_6$ (895 bp)

CAT*ATGAAAGAAGTGAAGTCATTGCTGCTGGATTTACAGTTGCTTTTGGAGAAAGTTAAAAATCCTGAGAACCTCAAGCTCTCCAGGATGCATACATTTG*
ACTTTTACGTGCCCAAGGTTAACGCTACAGAATTGAAACATCTTAAGGCGTTACTAGAAGAACTCAAACTTCTAGAGGAAGTACTAAATTTAGCTCCAAG
*CAAAAACCTGAACGTCCAGCGT*GAAGTGGTTCCGCCGCAGGTTCTGAGCGAACCGAACGAAGAAGCAGGTGCAGCACTGTCTCCGCTGCCGGAAGTCCCG
CCGTGGACCGGTGAAGTTAGTCCGGCGCAACGTGAAGTGGTTCCGCCGCAGGTTCTGAGCGAACCGAACGAAGAAGCAGGTGCAGCACTGTCTCCGCTGC
CGGAAGTCCCGCCGTGGACCGGTGAAGTTAGTCCGGCGCAACGTGAAGTGGTTCCGCCGCAGGTTCTGAGCGAACCGAACGAAGAAGCAGGTGCAGCACT
GTCTCCGCTGCCGGAAGTCCCGCCGTGGACCGGTGAAGTTAGTCCGGCGCAACGTGAAGTGGTTCCGCCGCAGGTTCTGAGCGAACCGAACGAAGAAGCA
GGTGCAGCACTGTCTCCGCTGCCGGAAGTCCCGCCGTGGACCGGTGAAGTTAGTCCGGCGCAACGTGAAGTGGTTCCGCCGCAGGTTCTGAGCGAACCGA
ACGAAGAAGCAGGTGCAGCACTGTCTCCGCTGCCGGAAGTCCCGCCGTGGACCGGTGAAGTTAGTCCGGCGCAACGTGAAGTGGTTCCGCCGCAGGTTCT
GAGCGAACCGAACGAAGAAGCAGGTGCAGCACTGTCTCCGCTGCCGGAAGTCCCGCCGTGGACCGGTGAAGTTAGTCCGGCGCAACGTTAAGCTT
(SEQ ID No:17)

B72(Q)R-(VSDL)$_8$ (1117 bp)

CAT*ATGAAAGAAGTGAAGTCATTGCTGCTGGATTTACAGTTGCTTTTGGAGAAAGTTAAAAATCCTGAGAACCTCAAGCTCTCCAGGATGCATACATTTG*
ACTTTTACGTGCCCAAGGTTAACGCTACAGAATTGAAACATCTTAAGGCGTTACTAGAAGAACTCAAACTTCTAGAGGAAGTACTAAATTTAGCTCCAAG
*CAAAAACCTGAACGTCCAGCGT*GAAGTGGTTCCGCCGCAGGTTCTGAGCGAACCGAACGAAGAAGCAGGTGCAGCACTGTCTCCGCTGCCGGAAGTCCCG
CCGTGGACCGGTGAAGTTAGTCCGGCGCAACGTGAAGTGGTTCCGCCGCAGGTTCTGAGCGAACCGAACGAAGAAGCAGGTGCAGCACTGTCTCCGCTGC
CGGAAGTCCCGCCGTGGACCGGTGAAGTTAGTCCGGCGCAACGTGAAGTGGTTCCGCCGCAGGTTCTGAGCGAACCGAACGAAGAAGCAGGTGCAGCACT
GTCTCCGCTGCCGGAAGTCCCGCCGTGGACCGGTGAAGTTAGTCCGGCGCAACGTGAAGTGGTTCCGCCGCAGGTTCTGAGCGAACCGAACGAAGAAGCA
GGTGCAGCACTGTCTCCGCTGCCGGAAGTCCCGCCGTGGACCGGTGAAGTTAGTCCGGCGCAACGTGAAGTGGTTCCGCCGCAGGTTCTGAGCGAACCGA
ACGAAGAAGCAGGTGCAGCACTGTCTCCGCTGCCGGAAGTCCCGCCGTGGACCGGTGAAGTTAGTCCGGCGCAACGTGAAGTGGTTCCGCCGCAGGTTCT
GAGCGAACCGAACGAAGAAGCAGGTGCAGCACTGTCTCCGCTGCCGGAAGTCCCGCCGTGGACCGGTGAAGTTAGTCCGGCGCAACGTGAAGTGGTTCCG
CCGCAGGTTCTGAGCGAACCGAACGAAGAAGCAGGTGCAGCACTGTCTCCGCTGCCGGAAGTCCCGCCGTGGACCGGTGAAGTTAGTCCGGCGCAACGTG
AAGTGGTTCCGCCGCAGGTTCTGAGCGAACCGAACGAAGAAGCAGGTGCAGCACTGTCTCCGCTGCCGGAAGTCCCGCCGTGGACCGGTGAAGTTAGTCC
GGCGCAACGTTAAGCTT (SEQ ID No:18)

B72(Q)R-(VSDL)$_{10}$ (1339 bp)

CAT*ATGAAAGAAGTGAAGTCATTGCTGCTGGATTTACAGTTGCTTTTGGAGAAAGTTAAAAATCCTGAGAACCTCAAGCTCTCCAGGATGCATACATTTG*
ACTTTTACGTGCCCAAGGTTAACGCTACAGAATTGAAACATCTTAAGGCGTTACTAGAAGAACTCAAACTTCTAGAGGAAGTACTAAATTTAGCTCCAAG
*CAAAAACCTGAACGTCCAGCGT*GAAGTGGTTCCGCCGCAGGTTCTGAGCGAACCGAACGAAGAAGCAGGTGCAGCACTGTCTCCGCTGCCGGAAGTCCCG
CCGTGGACCGGTGAAGTTAGTCCGGCGCAACGTGAAGTGGTTCCGCCGCAGGTTCTGAGCGAACCGAACGAAGAAGCAGGTGCAGCACTGTCTCCGCTGC
CGGAAGTCCCGCCGTGGACCGGTGAAGTTAGTCCGGCGCAACGTGAAGTGGTTCCGCCGCAGGTTCTGAGCGAACCGAACGAAGAAGCAGGTGCAGCACT
GTCTCCGCTGCCGGAAGTCCCGCCGTGGACCGGTGAAGTTAGTCCGGCGCAACGTGAAGTGGTTCCGCCGCAGGTTCTGAGCGAACCGAACGAAGAAGCA
GGTGCAGCACTGTCTCCGCTGCCGGAAGTCCCGCCGTGGACCGGTGAAGTTAGTCCGGCGCAACGTGAAGTGGTTCCGCCGCAGGTTCTGAGCGAACCGA
ACGAAGAAGCAGGTGCAGCACTGTCTCCGCTGCCGGAAGTCCCGCCGTGGACCGGTGAAGTTAGTCCGGCGCAACGTGAAGTGGTTCCGCCGCAGGTTCT
GAGCGAACCGAACGAAGAAGCAGGTGCAGCACTGTCTCCGCTGCCGGAAGTCCCGCCGTGGACCGGTGAAGTTAGTCCGGCGCAACGTGAAGTGGTTCCG
CCGCAGGTTCTGAGCGAACCGAACGAAGAAGCAGGTGCAGCACTGTCTCCGCTGCCGGAAGTCCCGCCGTGGACCGGTGAAGTTAGTCCGGCGCAACGTG
AAGTGGTTCCGCCGCAGGTTCTGAGCGAACCGAACGAAGAAGCAGGTGCAGCACTGTCTCCGCTGCCGGAAGTCCCGCCGTGGACCGGTGAAGTTAGTCC
GGCGCAACGTGAAGTGGTTCCGCCGCAGGTTCTGAGCGAACCGAACGAAGAAGCAGGTGCAGCACTGTCTCCGCTGCCGGAAGTCCCGCCGTGGACCGGT
GAAGTTAGTCCGGCGCAACGTGAAGTGGTTCCGCCGCAGGTTCTGAGCGAACCGAACGAAGAAGCAGGTGCAGCACTGTCTCCGCTGCCGGAAGTCCCGC
CGTGGACCGGTGAAGTTAGTCCGGCGCAACGTTAAGCTT (SEQ ID No:19)

Figure 2

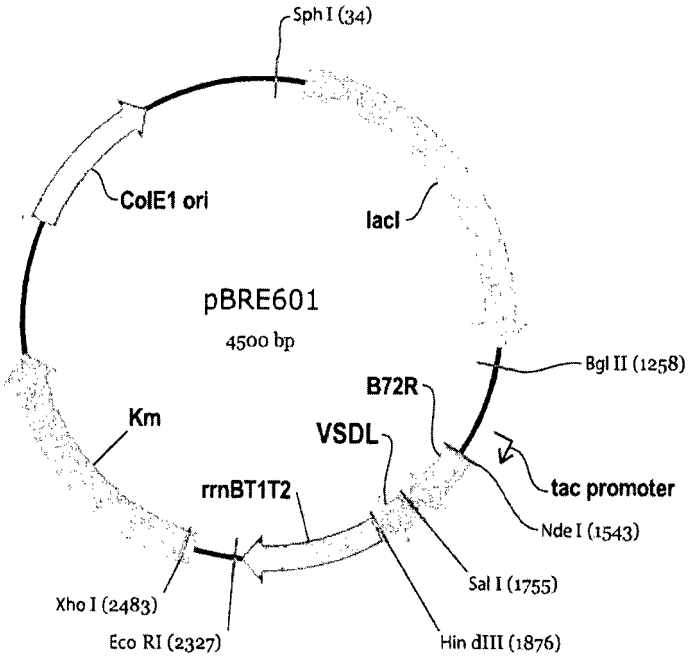


Figure 3a

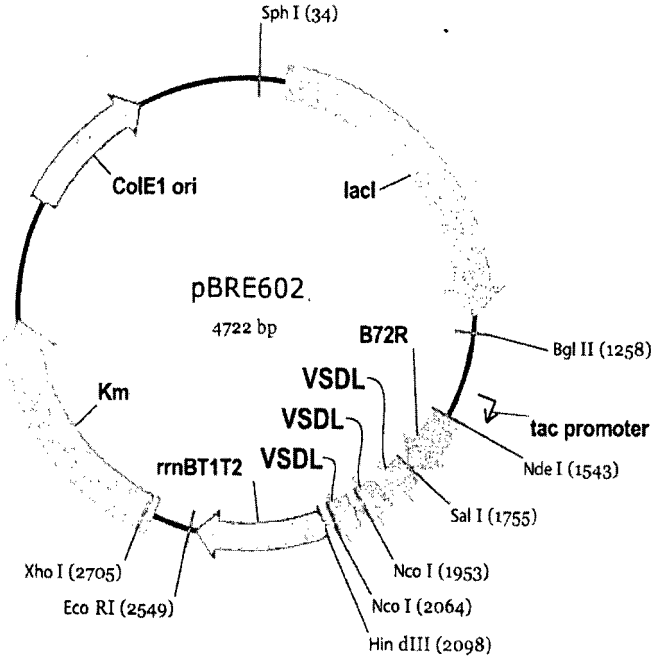


Figure 3b

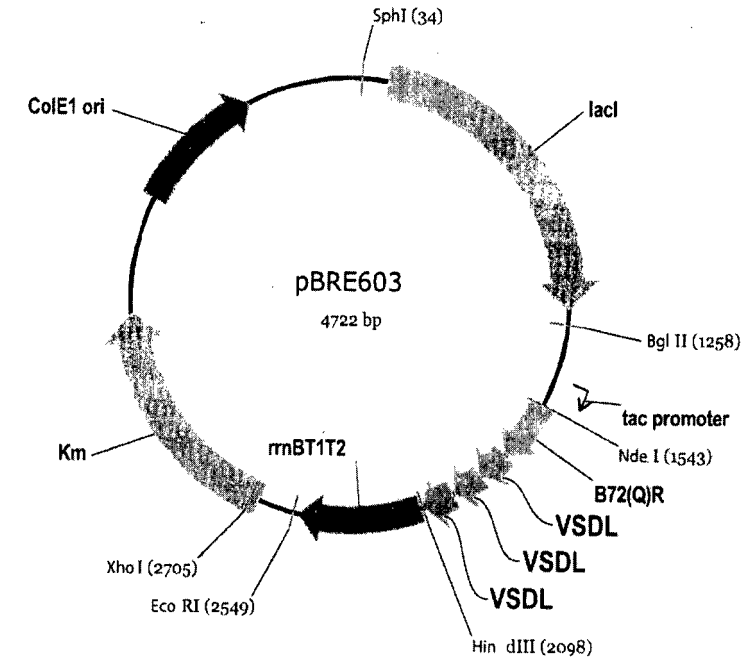


Figure 3c

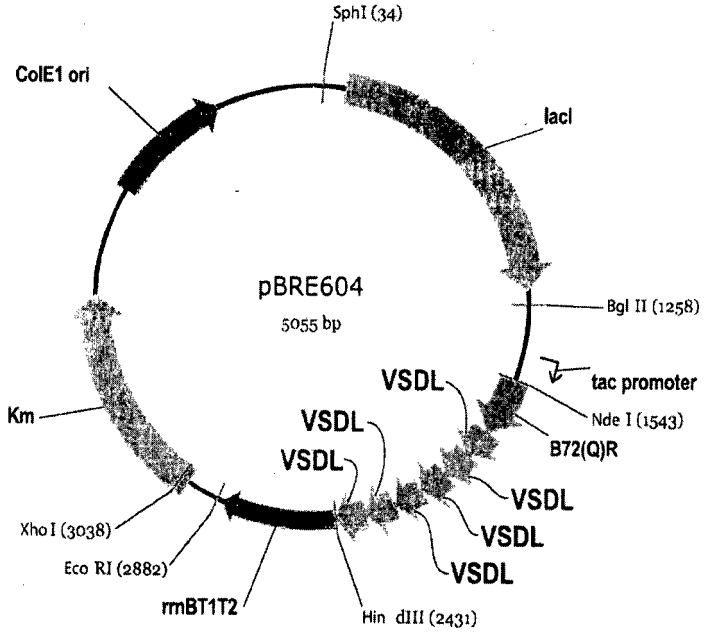


Figure 3d

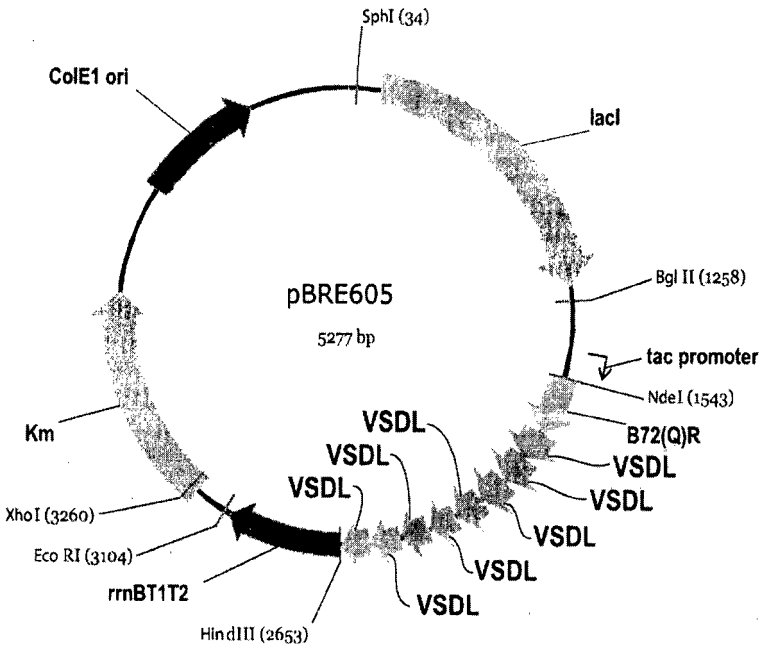


Figure 3e

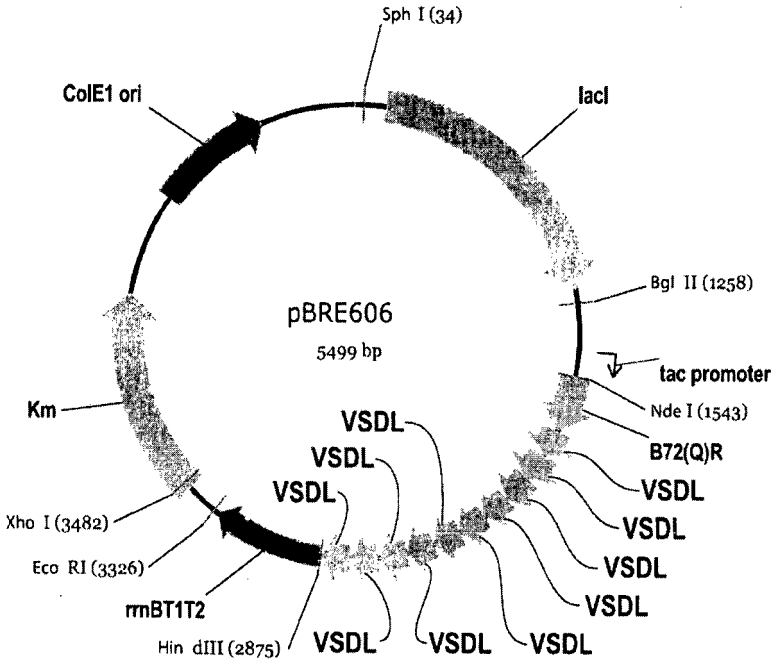


Figure 3f

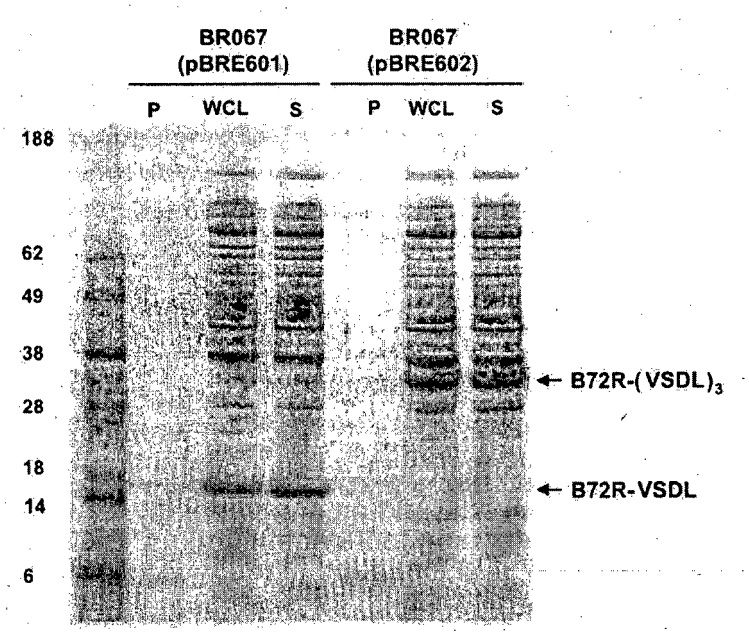
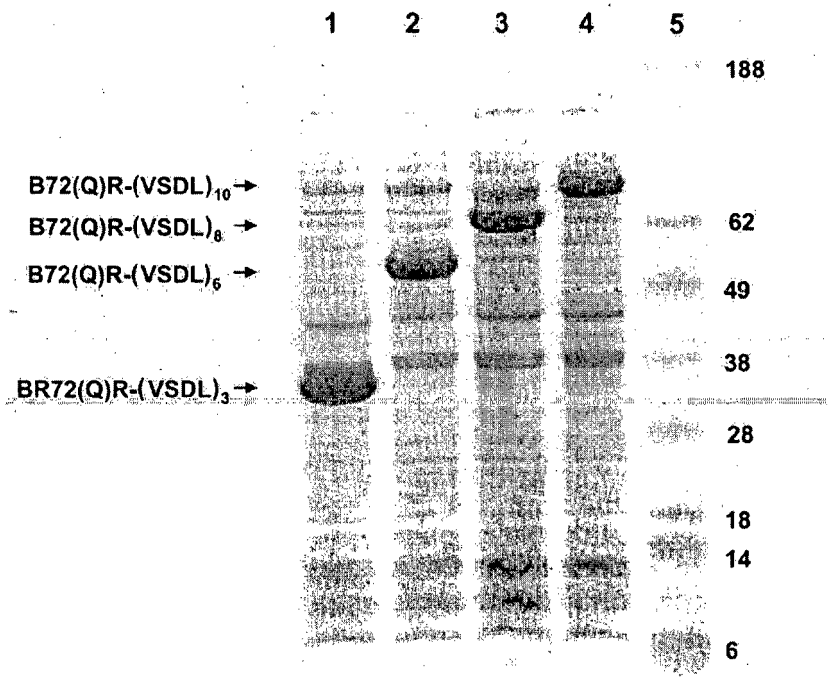

BR067
(pBRE601)
BR067
(pBRE602)
P
WCL
S
P
WCL
S
188
62
49
38
28
18
14
6
← B72R-(VSDL)3
← B72R-VSDL

Figure 4



Lane	Sample
1	BR067(pBRE603) + IPTG
2	BR067(pBRE604) + IPTG
3	BR067(pBRE605) + IPTG
4	BR067(pBRE606) + IPTG
5	SeeBlue Marker

Figure 5

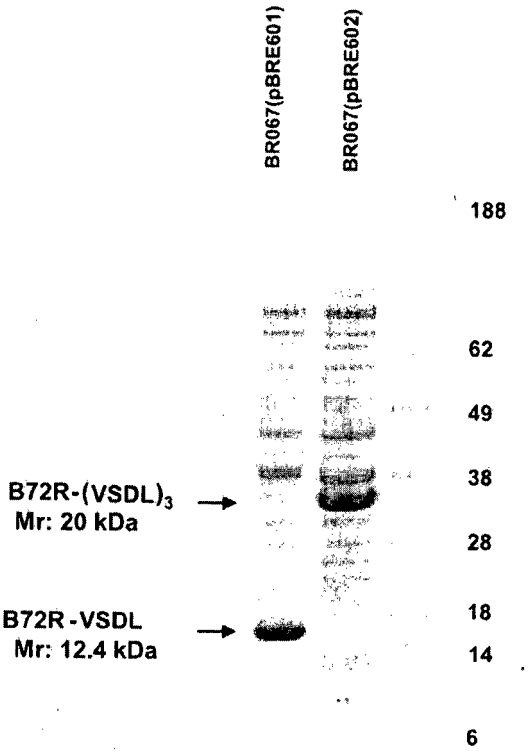


Figure 6

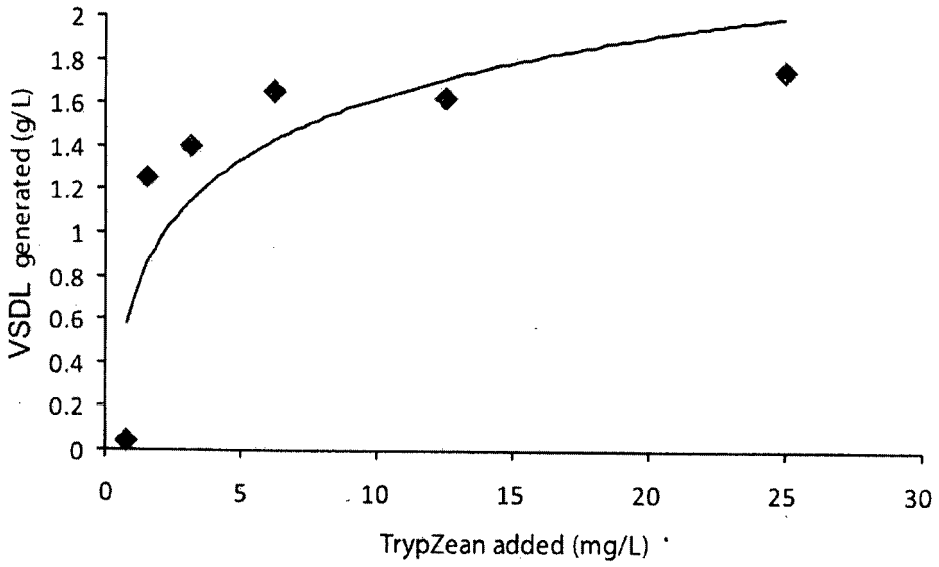


Figure 7

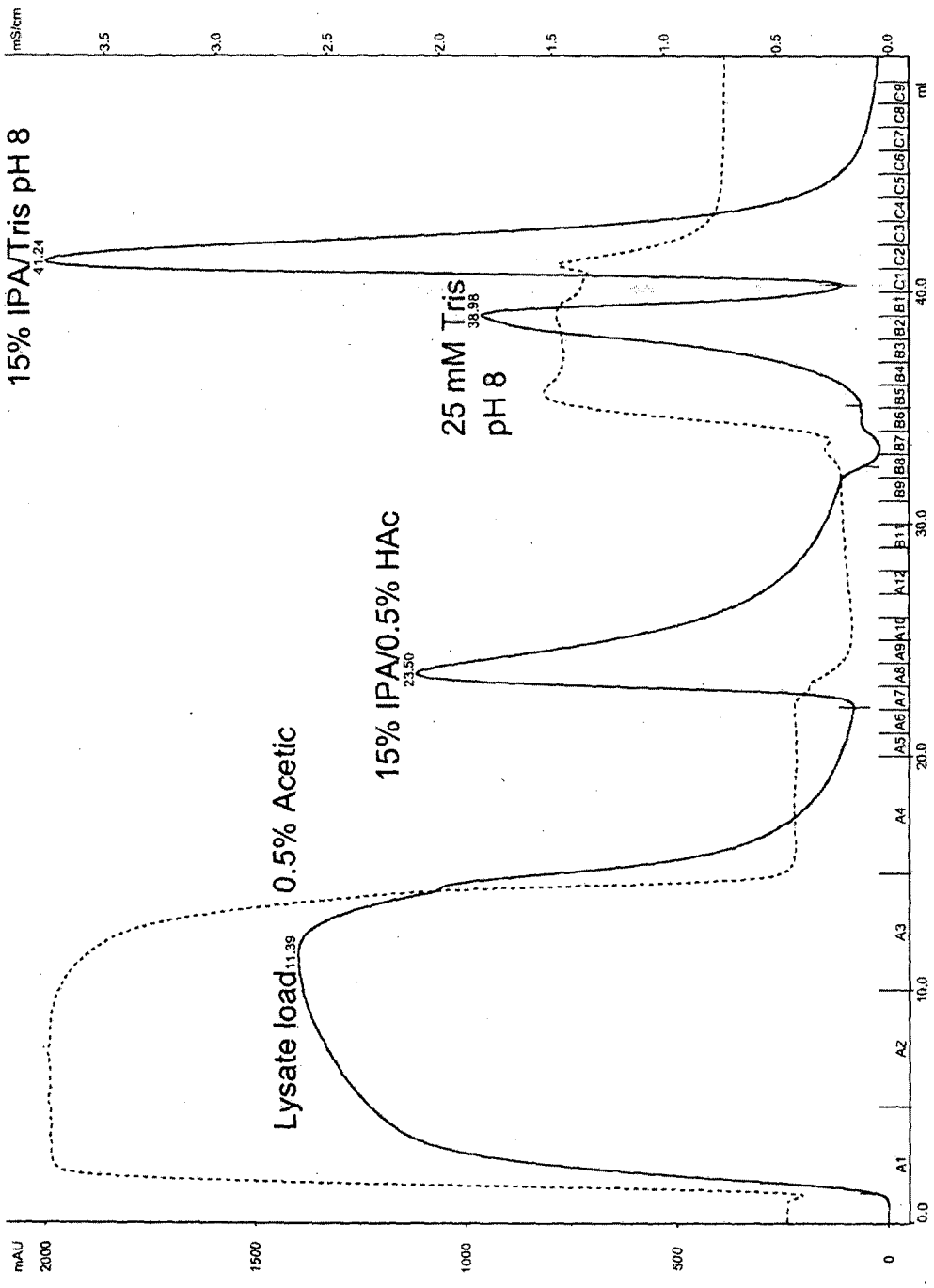

mS/cm
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
ml
mAU
2000
1500
1000
500
0
15% IPA/Tris pH 8
41.24
25 mM Tris
pH 8
38.98
15% IPA/0.5% HAc
23.50
0.5% Acetic
Lysate load
11.39
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
A11
A12
B1
B2
B3
B4
B5
B6
B7
B8
B9
B11
C1
C2
C3
C4
C5
C6
C7
C8
C9
0.0
10.0
20.0
30.0
40.0

Figure 8

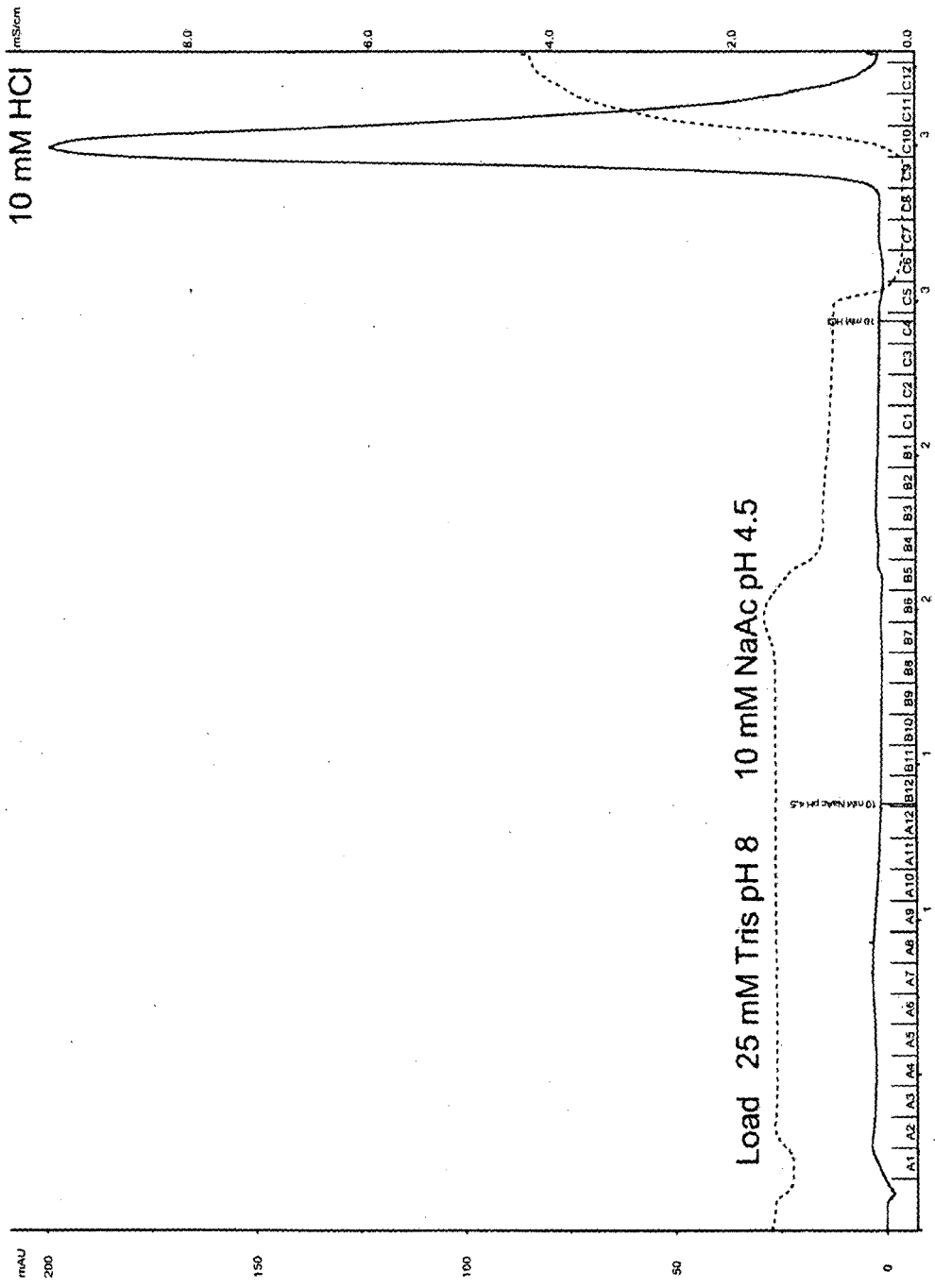

mS/cm
8.0
6.0
4.0
2.0
0.0
10 mM HCl
Load 25 mM Tris pH 8
10 mM NaAc pH 4.5
mAU
200
150
100
50
0
A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 B12 B11 B10 B9 B8 B7 B6 B5 B4 B3 B2 B1 C1 C2 C3 C4 C5 C6 C7 C8 C9 C10 C11 C12

Figure 9

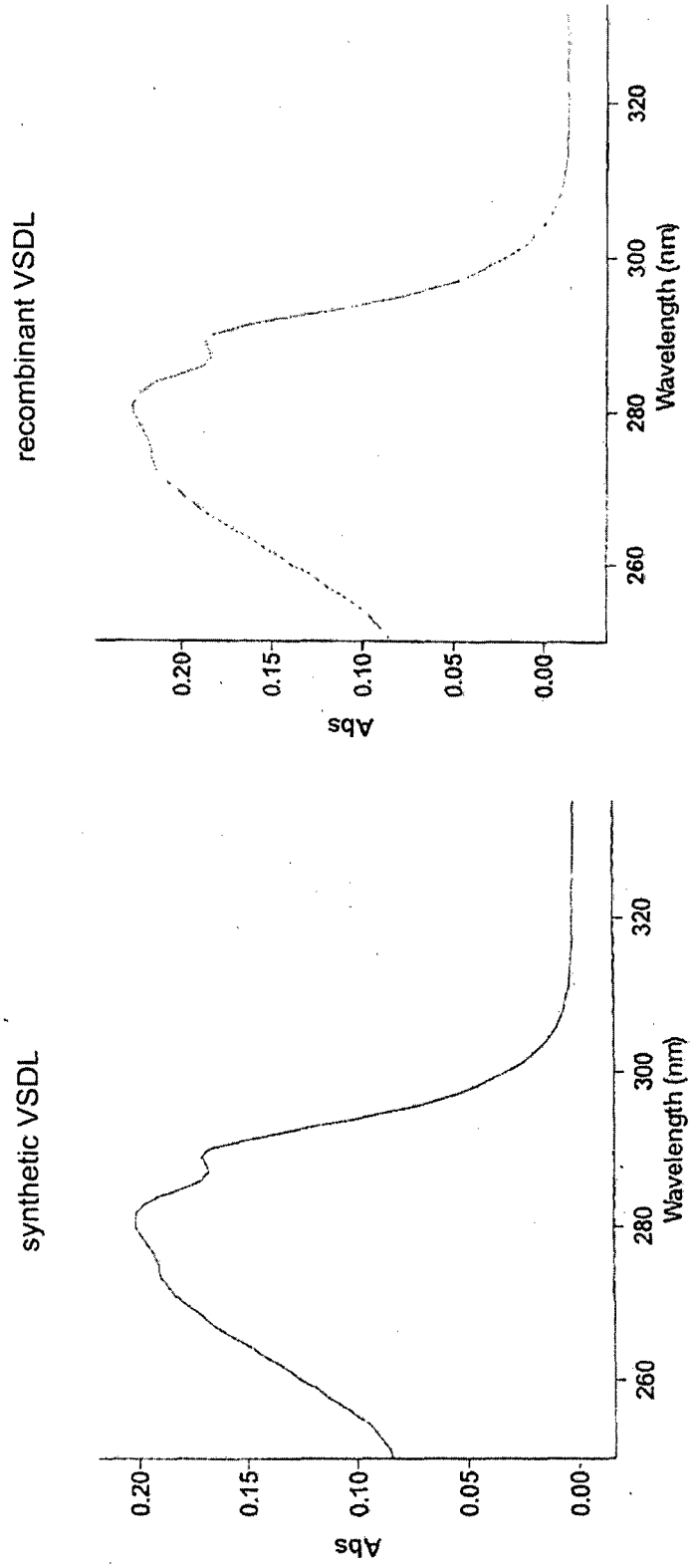

recombinant VSDL
synthetic VSDL
Abs
0.20
0.15
0.10
0.05
0.00
260
280
300
320
Wavelength (nm)

Figure 10

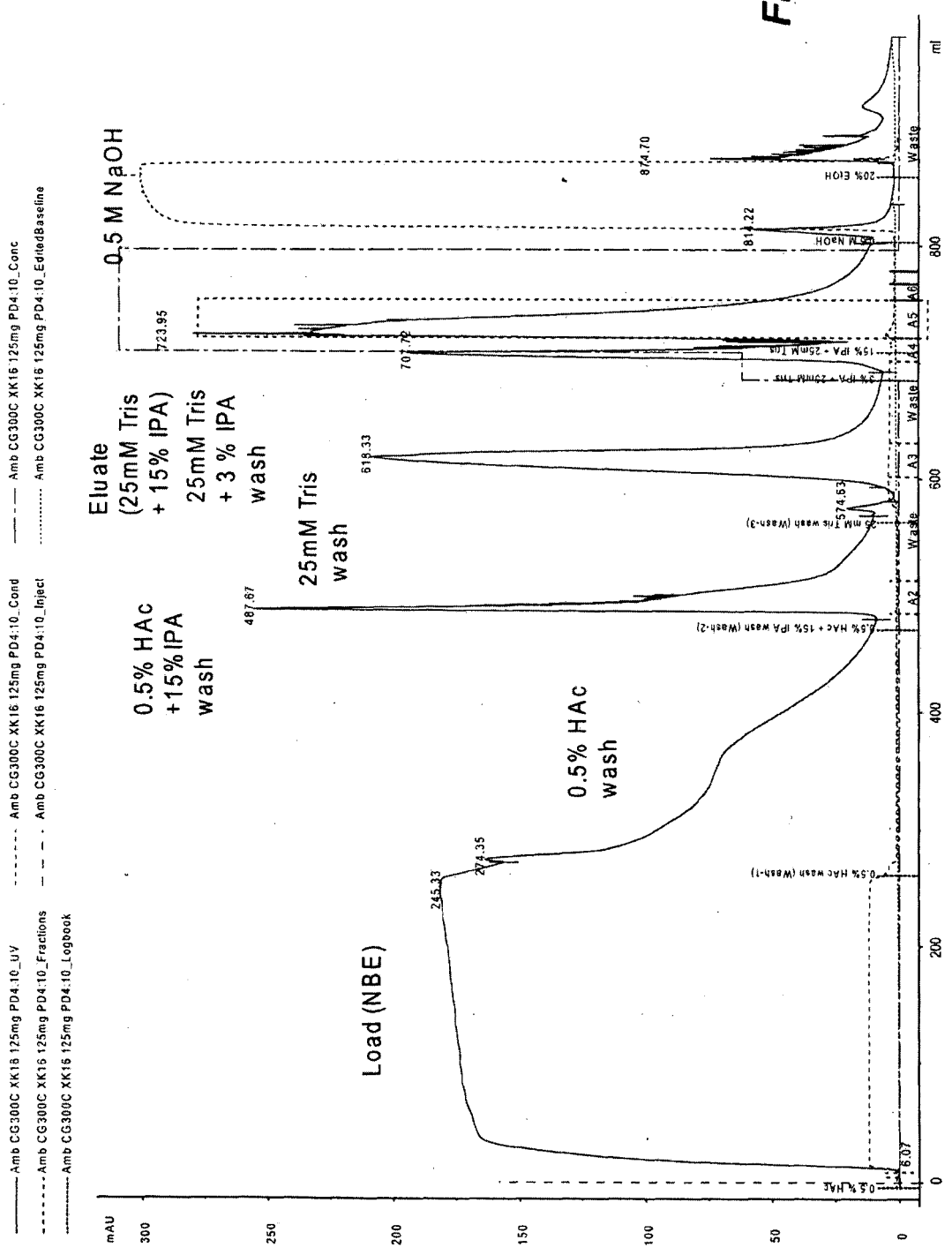
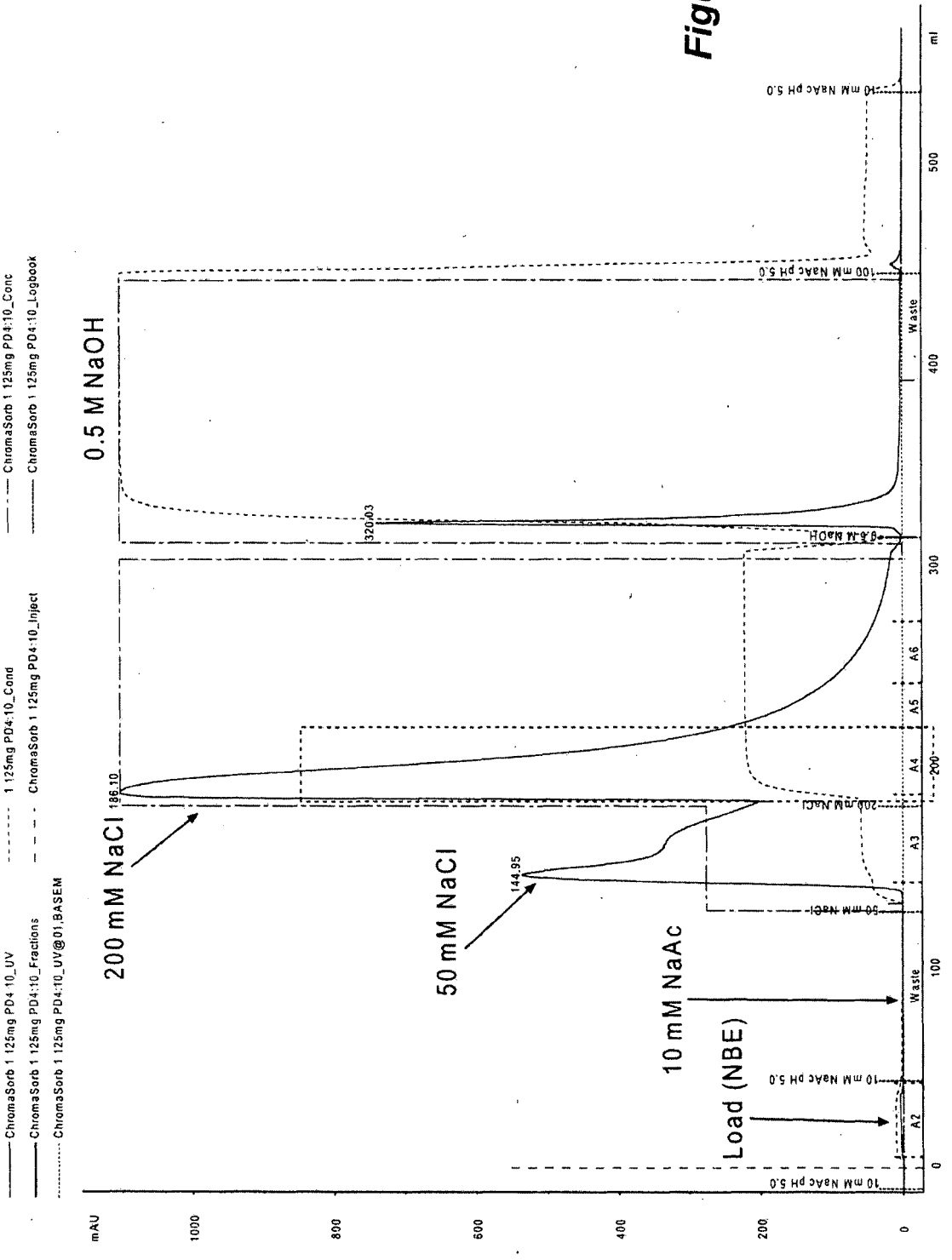

Amb CG300C XK16 125mg PD4:10_UV
Amb CG300C XK16 125mg PD4:10_Fractions
Amb CG300C XK16 125mg PD4:10_Logbook
Amb CG300C XK16 125mg PD4:10_Cond
Amb CG300C XK16 125mg PD4:10_Inject
Amb CG300C XK16 125mg PD4:10_Conc
Amb CG300C XK16 125mg PD4:10_EditedBaseline
mAU
ml
0.5 M NaOH
Eluate (25mM Tris + 15% IPA)
25mM Tris + 3 % IPA wash
25mM Tris wash
0.5% HAc +15% IPA wash
0.5% HAc wash
Load (NBE)
723.95
701.72
874.70
814.22
618.33
574.63
487.67
274.35
245.33
6.07

Figure 11

Figure 12


ChromaSorb 1 125mg PD4 10_UV
ChromaSorb 1 125mg PD4:10_Fractions
ChromaSorb 1 125mg PD4:10_UV@01,BASEM
1 125mg PD4:10_Cond
ChromaSorb 1 125mg PD4:10_Inject
ChromaSorb 1 125mg PD4:10_Conc
ChromaSorb 1 125mg PD4:10_Logbook
mAU
ml
0.5 M NaOH
200 mM NaCl
50 mM NaCl
10 mM NaAc
Load (NBE)
186.10
320.03
144.95
Waste
A2
A3
A4
A5
A6
10 mM NaAc pH 5.0
100 mM NaAc pH 5.0
200 mM NaCl
50 mM NaCl
0.5 M NaOH