

Figure 1

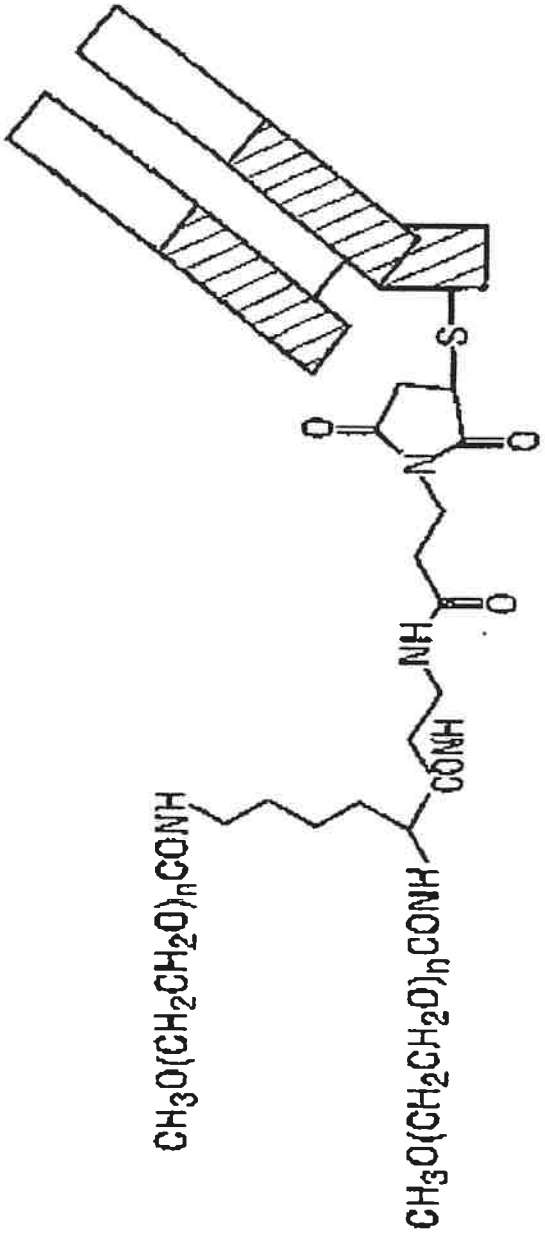


Figure 2

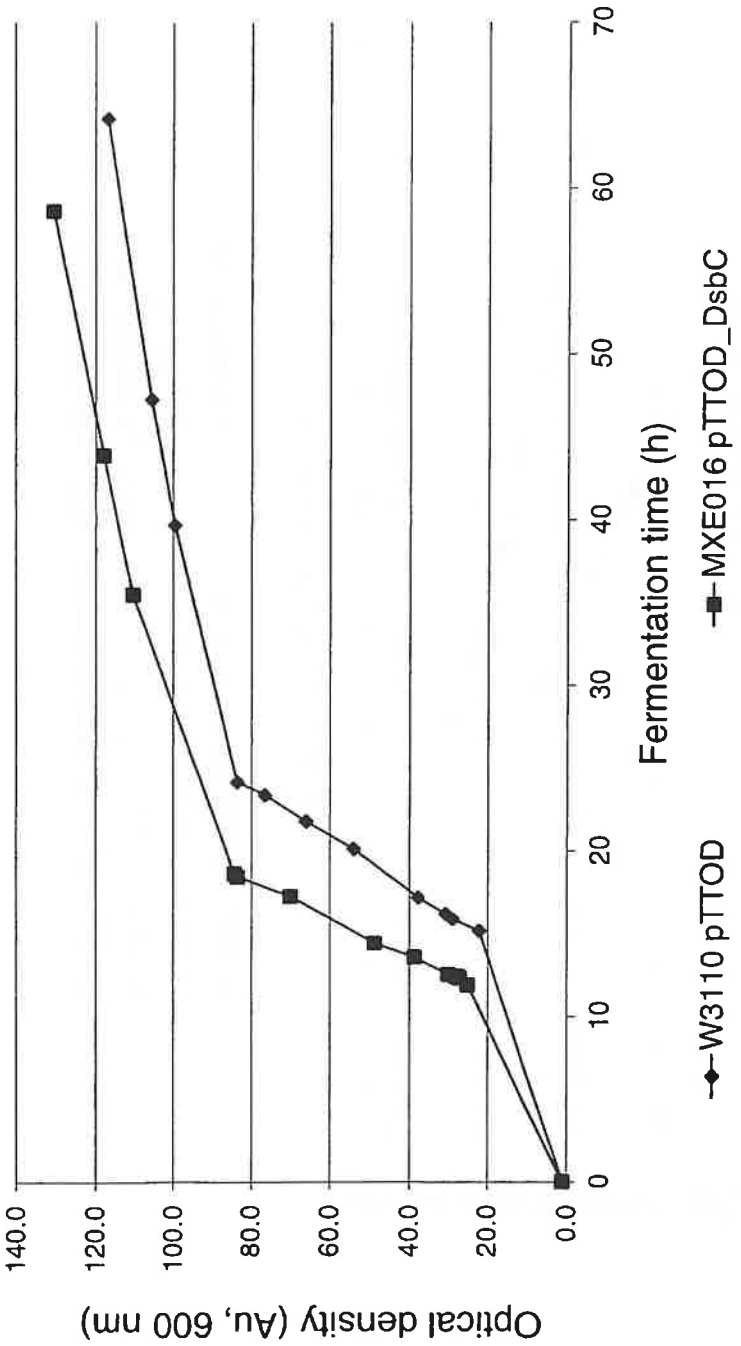
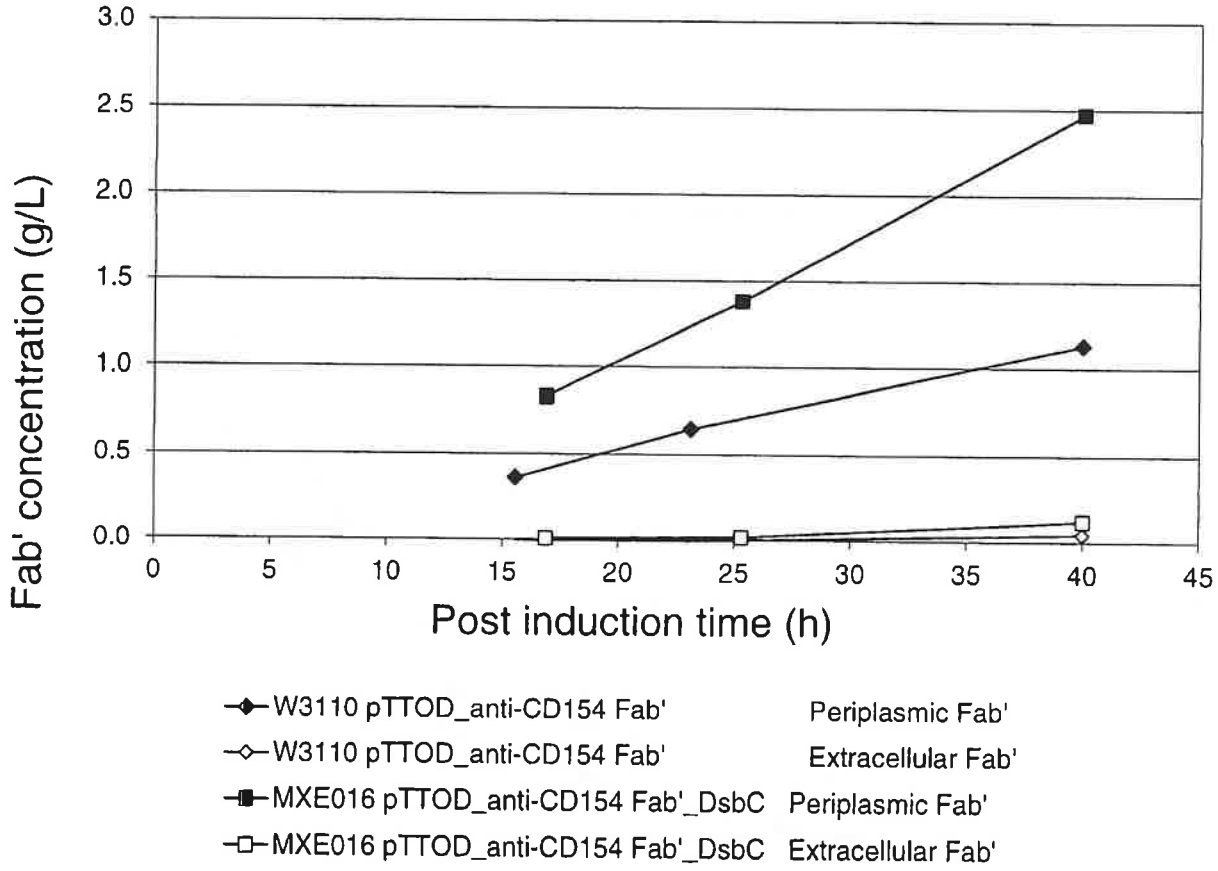

Optical density (Au, 600 nm)
140.0
120.0
100.0
80.0
60.0
40.0
20.0
0.0
0
10
20
30
40
50
60
70
Fermentation time (h)
W3110 pTTOD
MXE016 pTTOD_DsbC

Figure 3

Figure 4


3.0
2.5
2.0
1.5
1.0
0.5
0.0
Fab' concentration (g/L)
0
5
10
15
20
25
30
35
40
45
Post induction time (h)
W3110 pTTOD_anti-CD154 Fab' Periplasmic Fab'
W3110 pTTOD_anti-CD154 Fab' Extracellular Fab'
MXE016 pTTOD_anti-CD154 Fab'_DsbC Periplasmic Fab'
MXE016 pTTOD_anti-CD154 Fab'_DsbC Extracellular Fab'

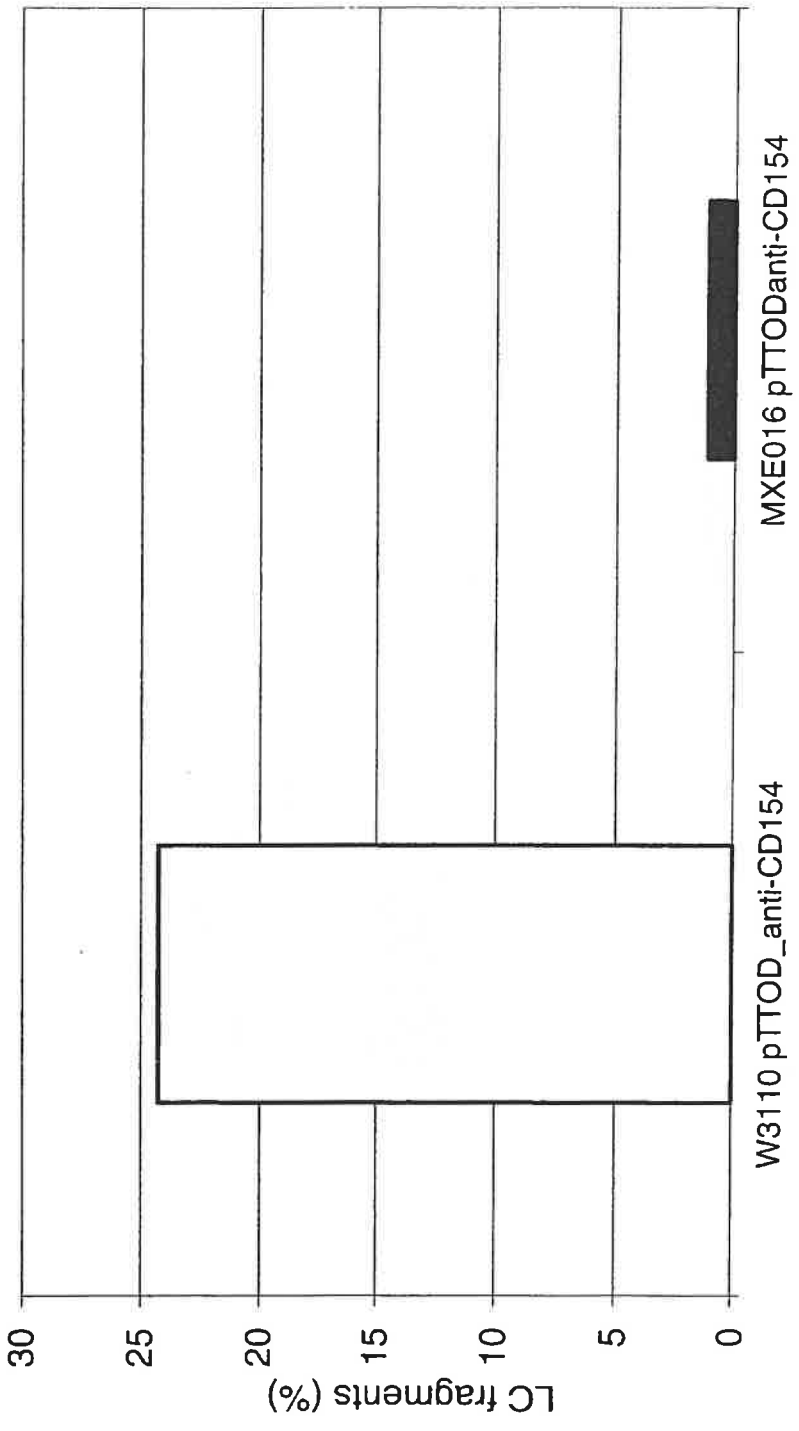

LC fragments (%)
30
25
20
15
10
5
0
W3110 pTTOD_anti-CD154
MXE016 pTTODanti-CD154

Figure 5

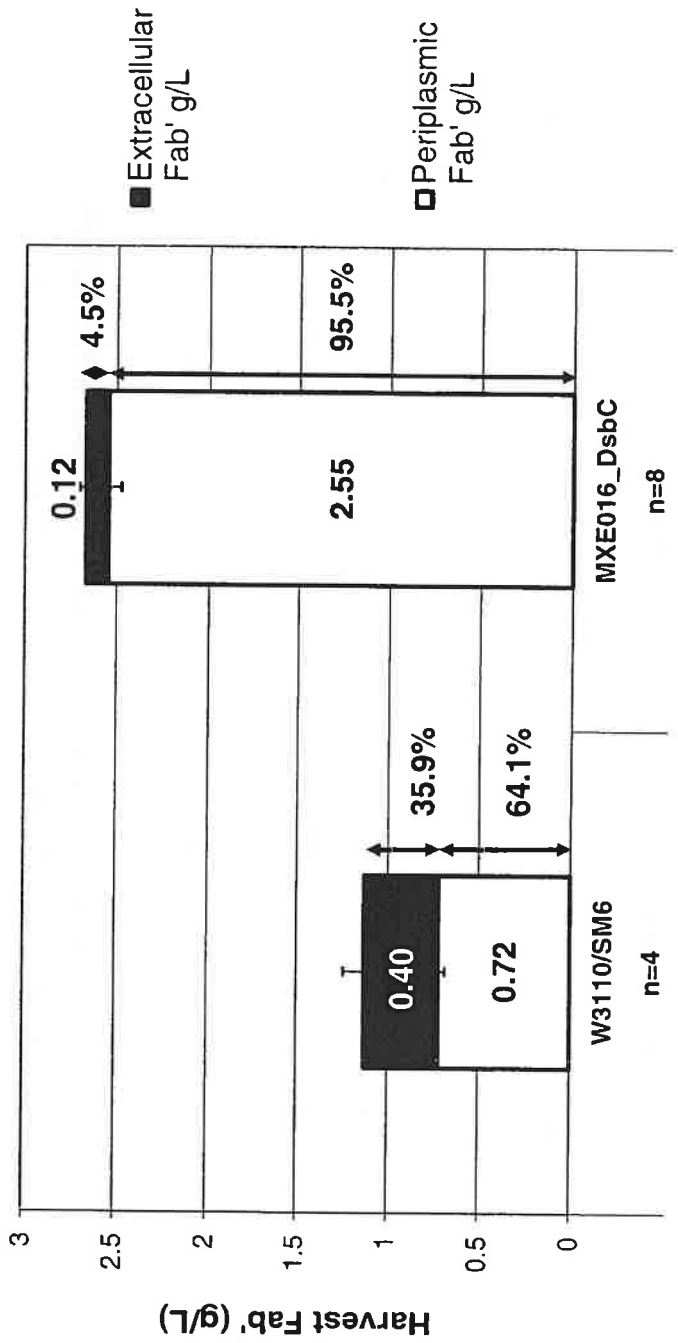

Extracellular Fab' g/L
Periplasmic Fab' g/L
Harvest Fab' (g/L)
3
2.5
2
1.5
1
0.5
0
0.12
2.55
4.5%
95.5%
MXE016_DsbC
n=8
0.40
0.72
35.9%
64.1%
W3110/SM6
n=4

Figure 6

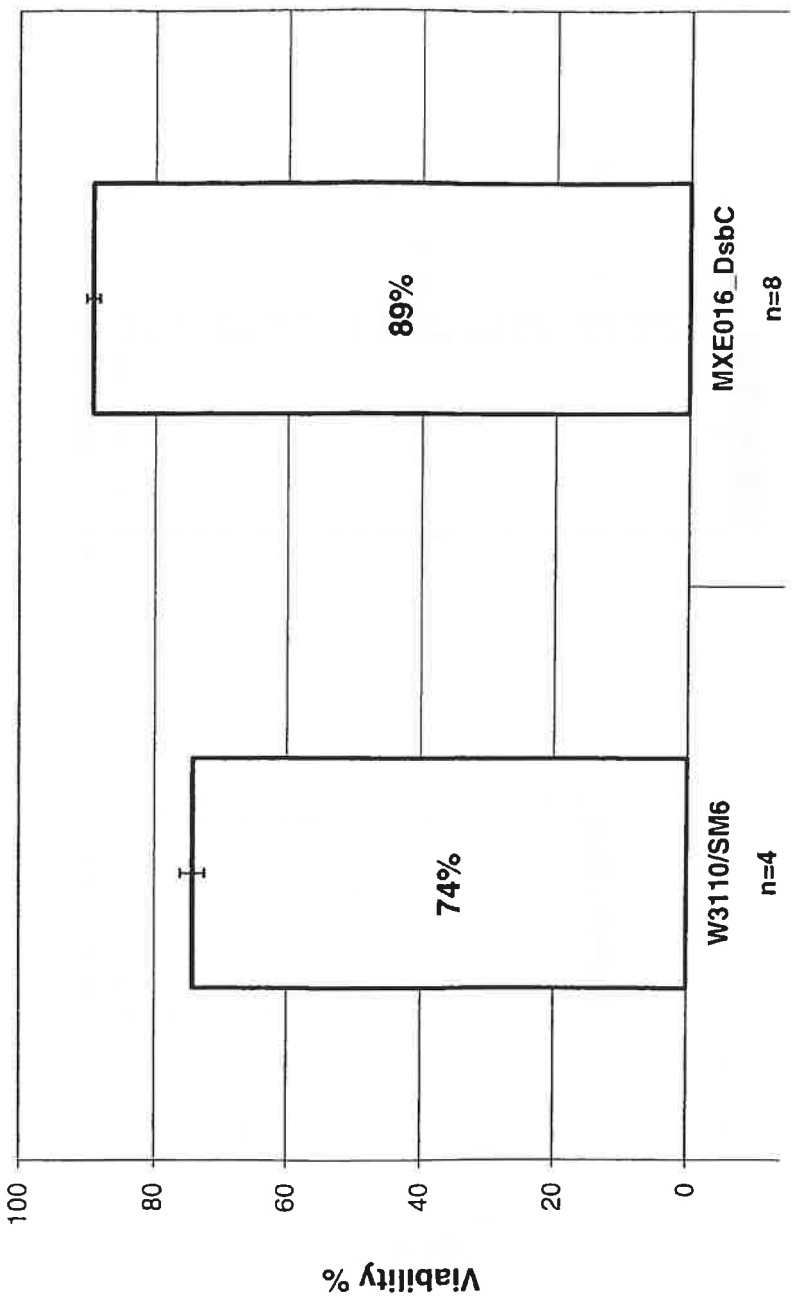


Figure 7

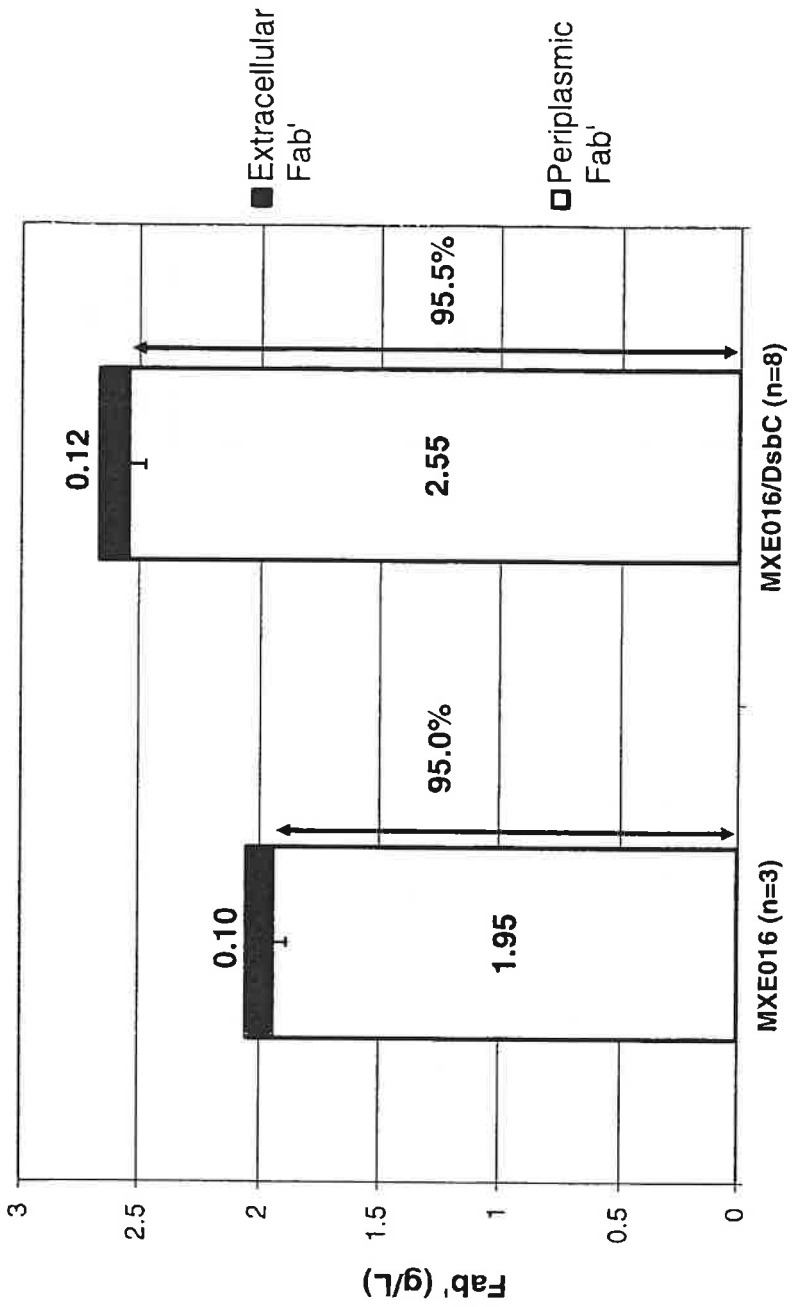

Extracellular Fab'
Periplasmic Fab'
95.5%
95.0%
0.12
2.55
0.10
1.95
MXE016/DsbC (n=8)
MXE016 (n=3)
Fab' (g/L)
0
0.5
1
1.5
2
2.5
3

Figure 8

Figure 9

Wild type ptr (protease III) 5'.

```
  *   M   P   R   S   T   W   F   K   A   L   L   L   L   V
TGA ATG CCC CGC AGC ACC TGG TTC AAA GCA TTA TTG TTG TTA GTT

  A   L   W   A   P   L   S
GCC CTT TGG GCA CCC TTA AGT
```

Mutated Δ ptr (protease III) 5'.

```
    EcoR I
  ~~~~~~~~
  *   I   P   R   S   T   W   F   K   A   L   L   L   L   V
TGA ATT CCC CGC AGC ACC TGG TTC AAA GCA TTA TTG TTG TTA GTT

                        Ase I
                      ~~~~~~~~
  A   L   W   A   H   *   C
GCC CTT TGG GCA CAT TAA TGT
```

Figure 10

Wild type Tsp 5'.

M N M F F R L T A L A G L L A
ATG AAC ***ATG*** TTT TT***T*** AGG CTT ACC GCG TTA GCT GGC CTG CTT GCA

I A G Q T F A
ATA GCA GGC CAG ACC TTC GCT

Mutated Δ Tsp 5'.

EcoR I

M N S F L G L P R * L A C L Q
ATG AAT ***TCG*** TTT TTA GGC TTA CCG CGT TAG CTG GCC TGC TTG CAA

Ase I

* Q A R H * L
TAG CAG GCC AGA C***AT TAA T***TG

Figure 11

Wild type DegP

```
202   D  A  A  I  N  R  G  N  S  G  G
949   GAT GCA GCG ATC AAC CGT GGT AAC TCC GGT GGT
```

Mutated DegP S210A

```
                    Ase I
                   --------
202     D  A  A  I  N  R  G  N  A  G  G
949     GAT GCA GCG ATT AAT CGT GGT AAC GCC GGT GGT
```