Fig.1.

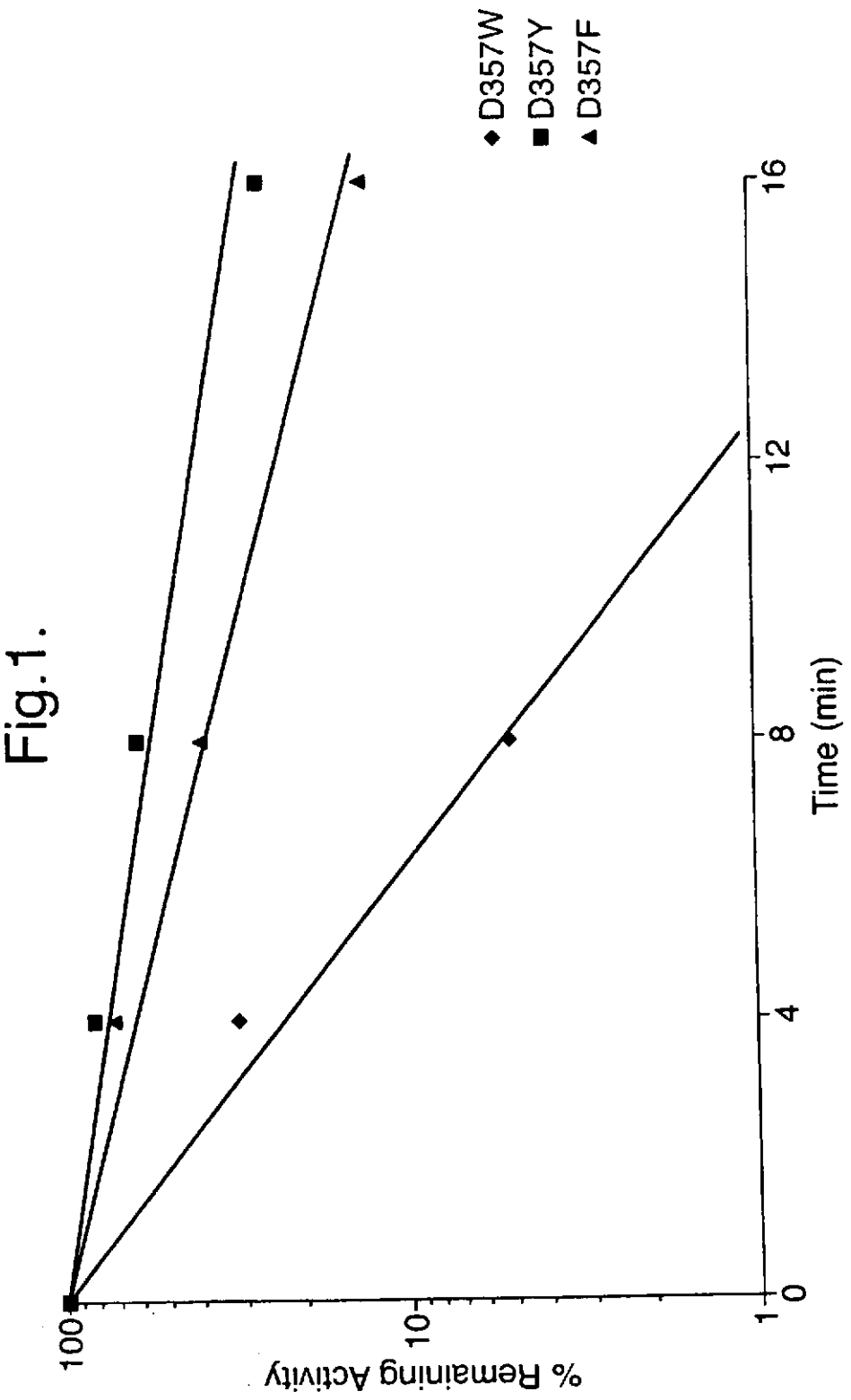

D357W
D357Y
D357F
% Remaining Activity
100
10
1
Time (min)
0
4
8
12
16

Fig.2(a).

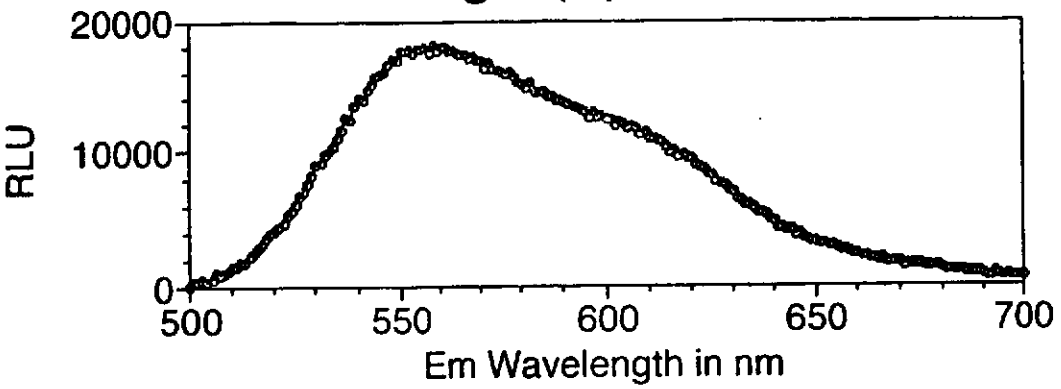


Fig.2(b).

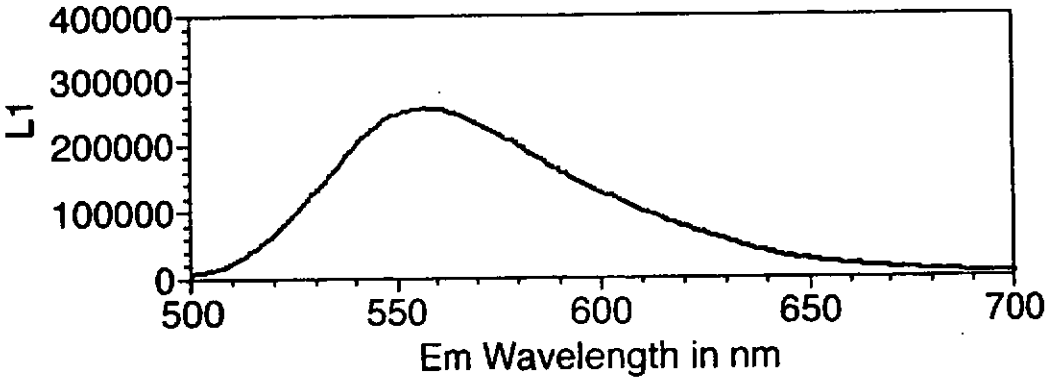


Fig.2(c).

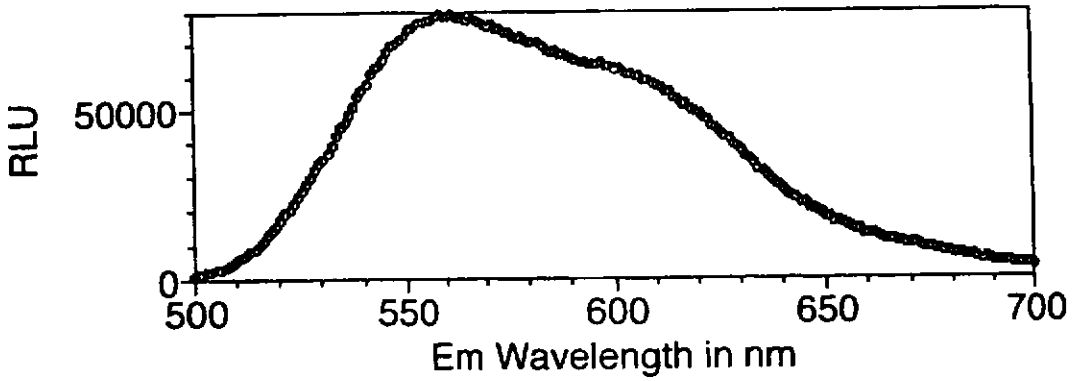


Fig.2(d).

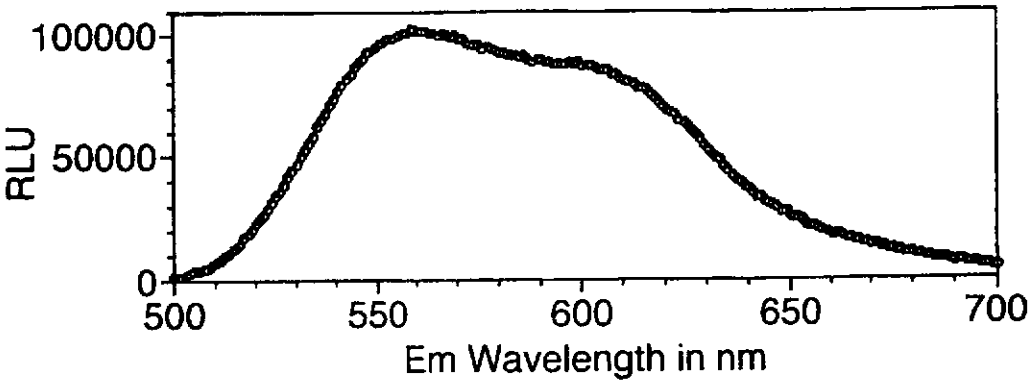


Fig.2(e).

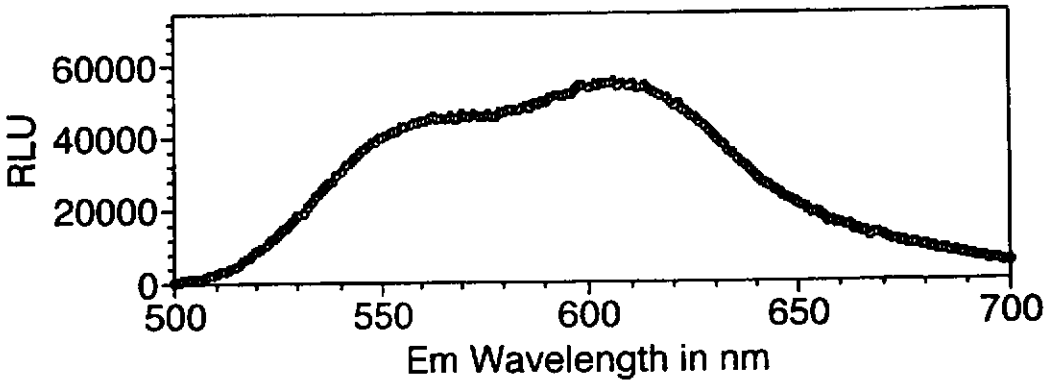


Fig.2(f).

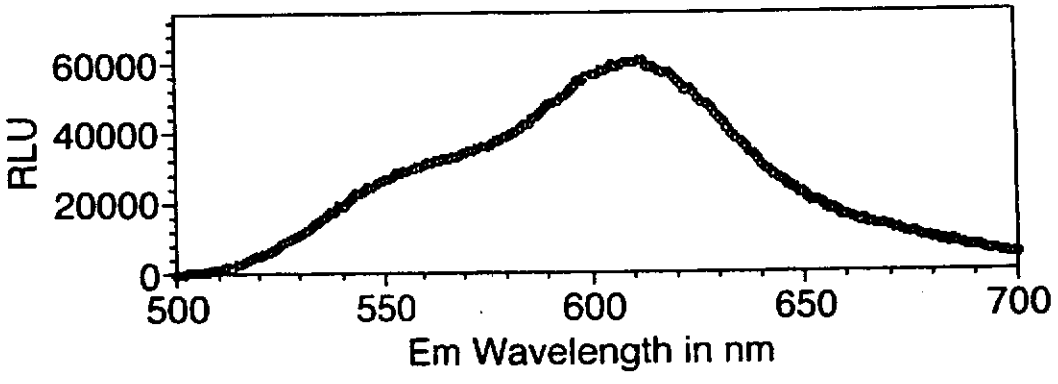


Fig.2(g).

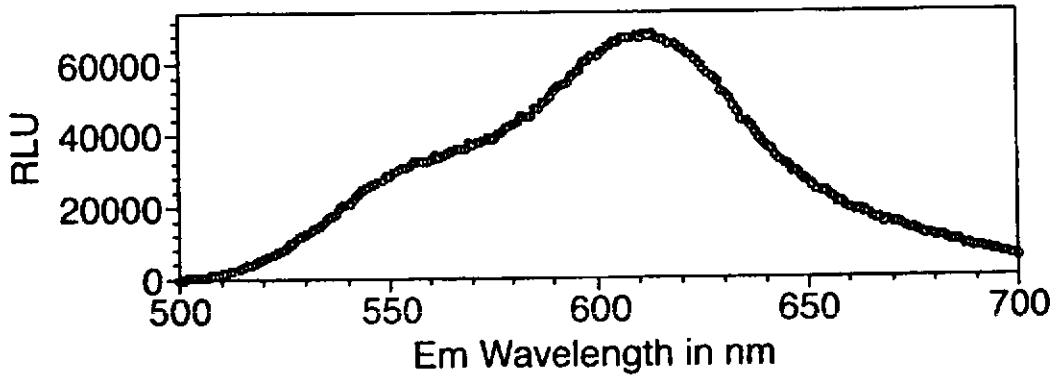

RLU
60000
40000
20000
0
500
550
600
650
700
Em Wavelength in nm

Fig.2(h).

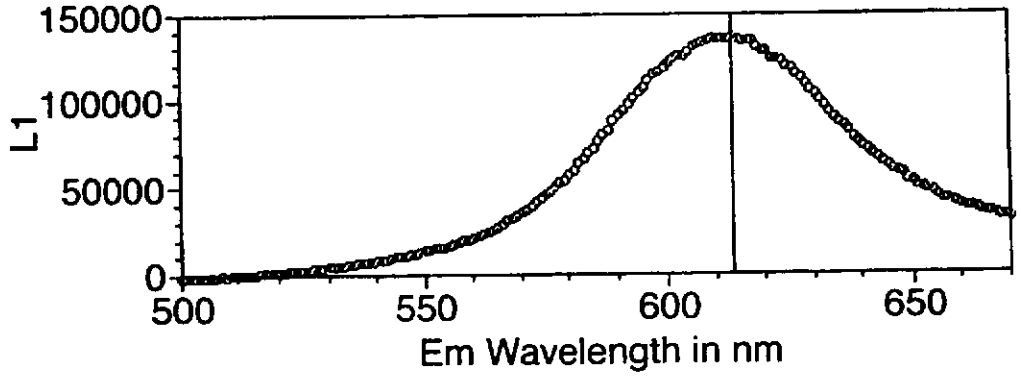

L1
150000
100000
50000
0
500
550
600
650
Em Wavelength in nm

Fig.3.

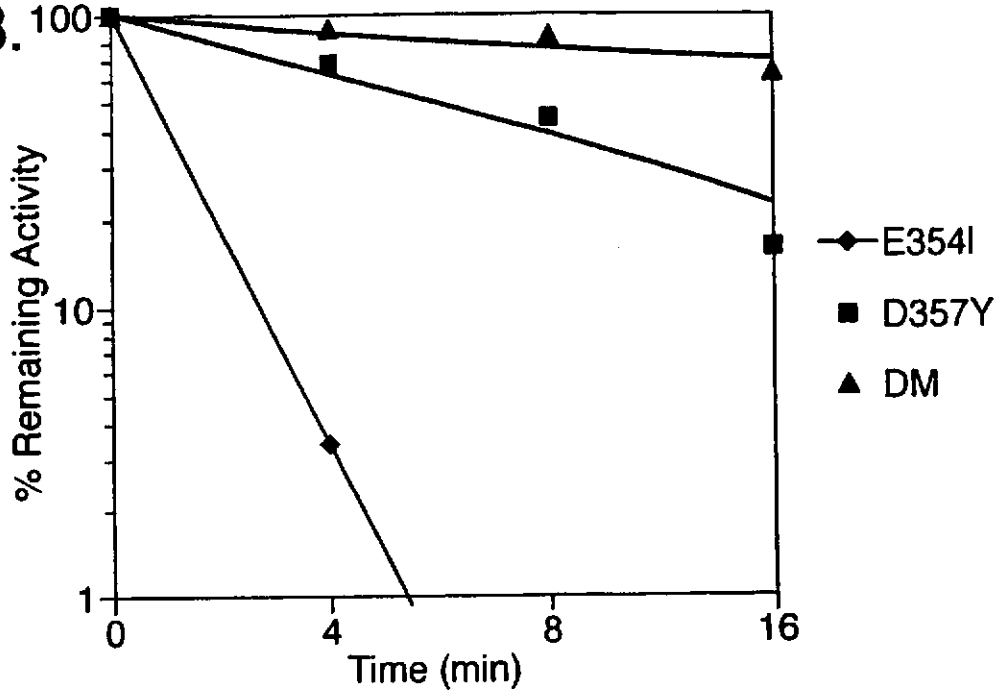


Fig.4(a).

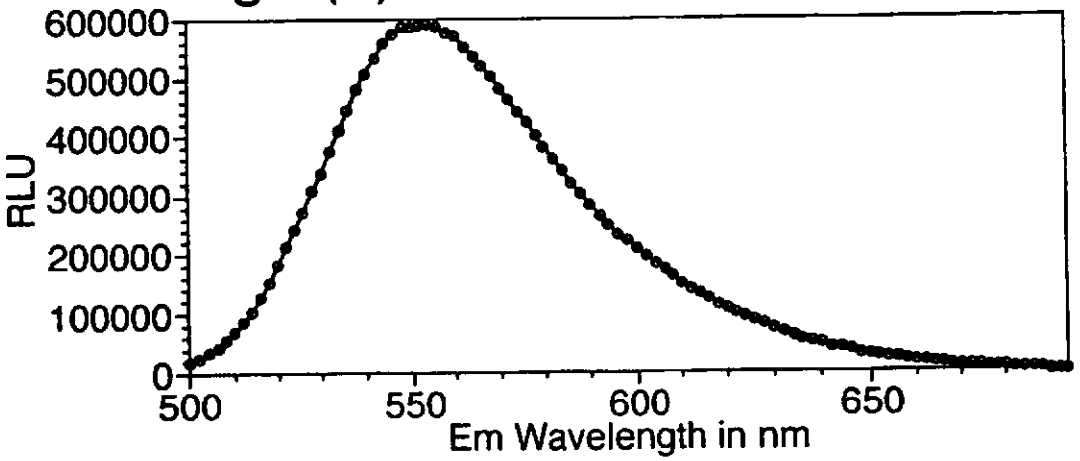


Fig.4(b).

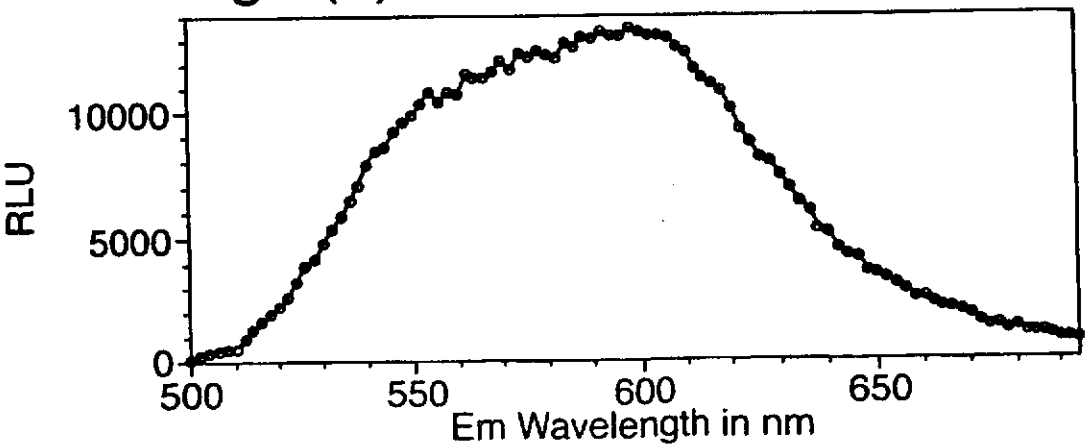
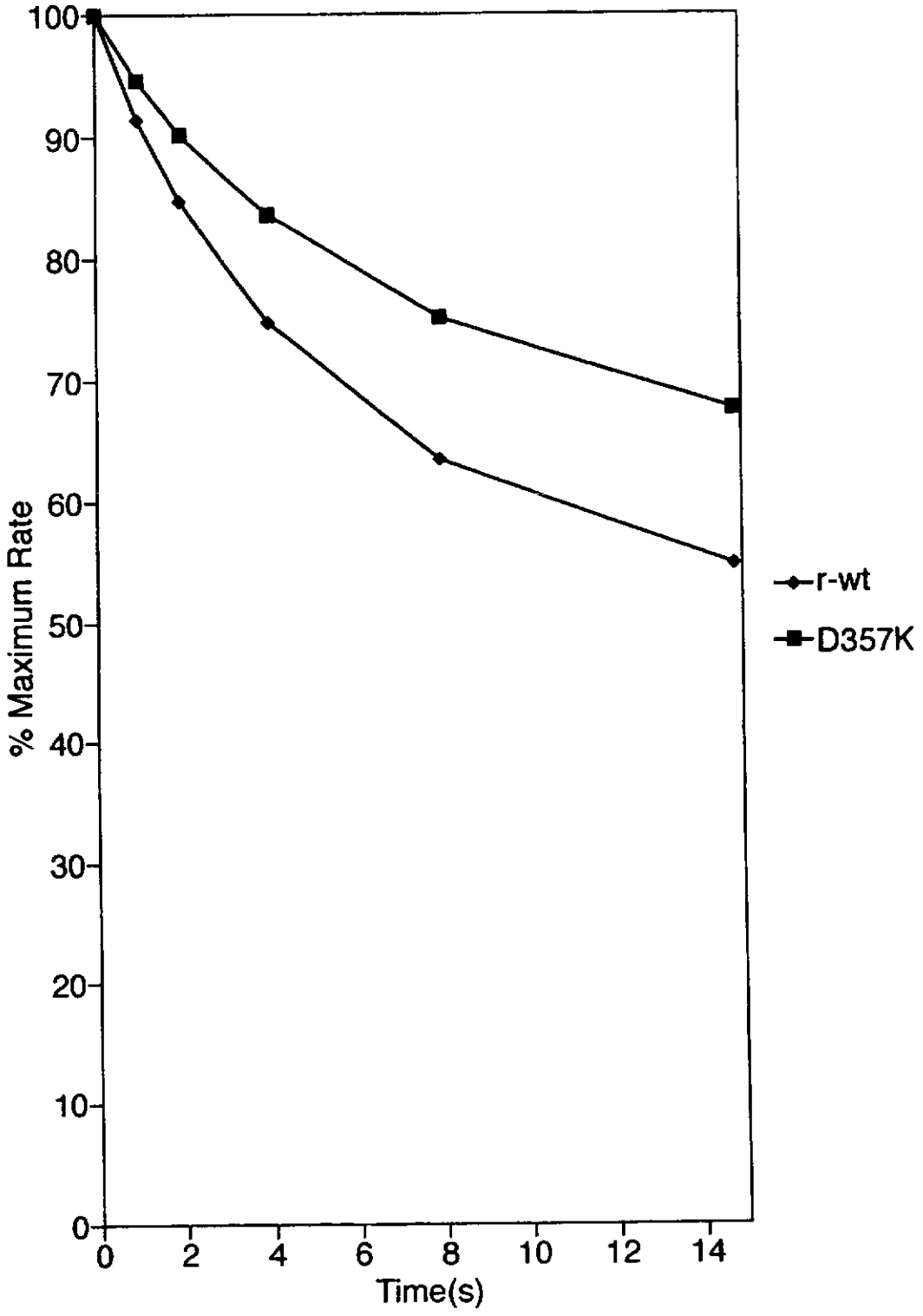


Fig.5.


100
90
80
70
60
50
40
30
20
10
0
% Maximum Rate
0
2
4
6
8
10
12
14
Time(s)
r-wt
D357K

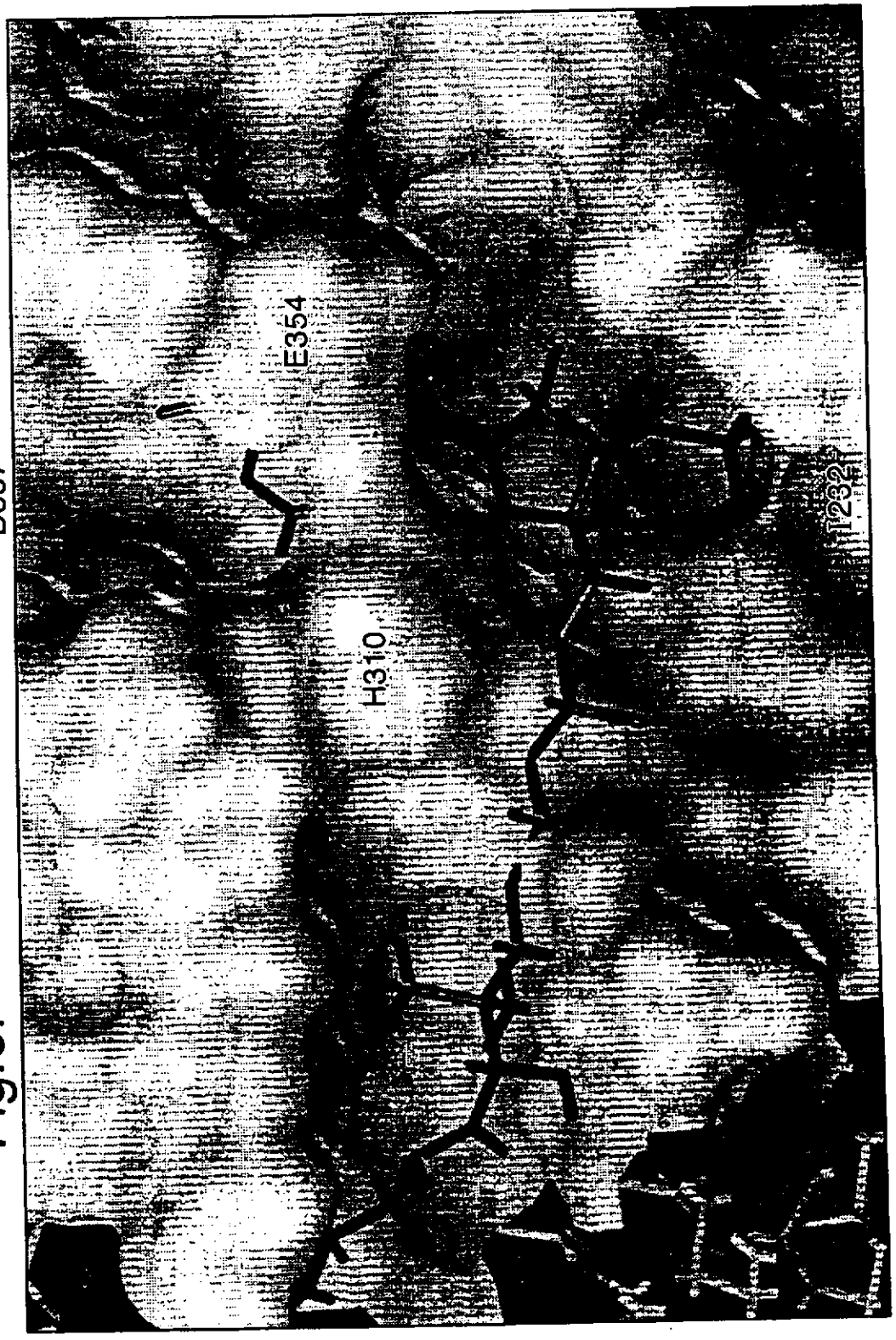


Fig.6.

Fig.7a.

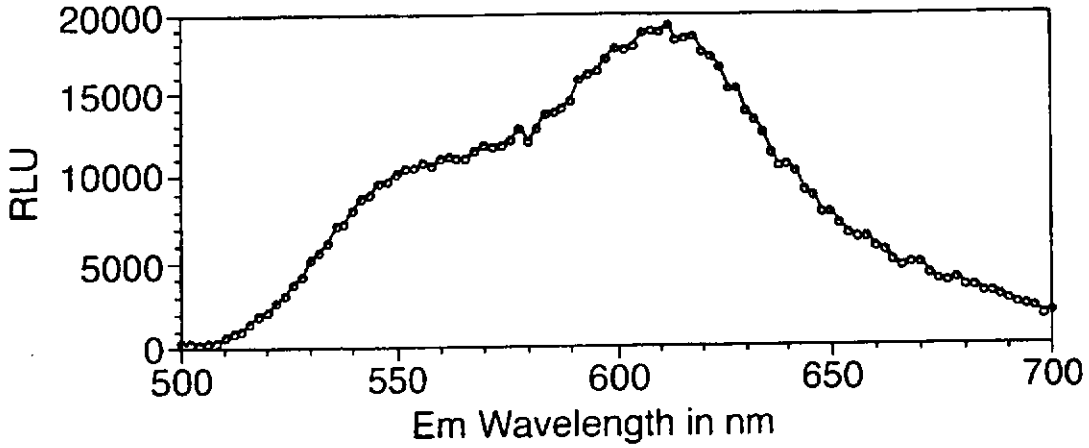


Fig.7b.

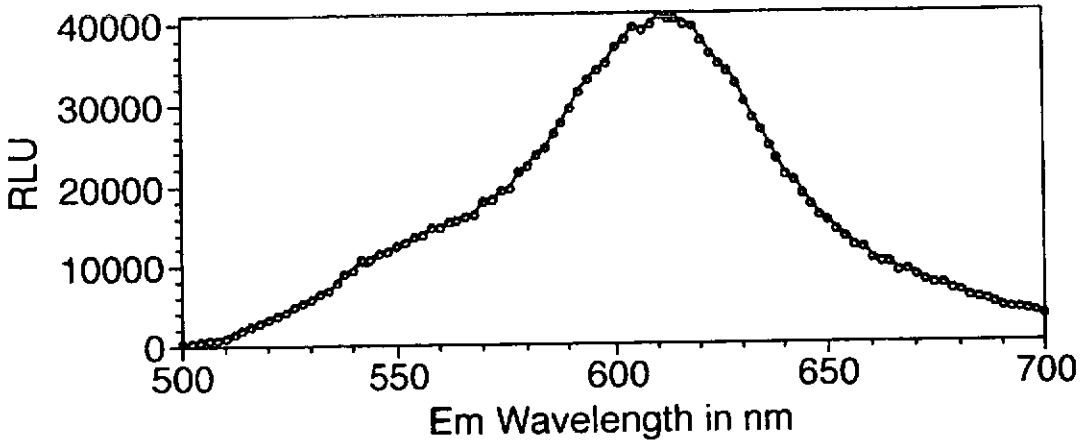


Fig.7c.

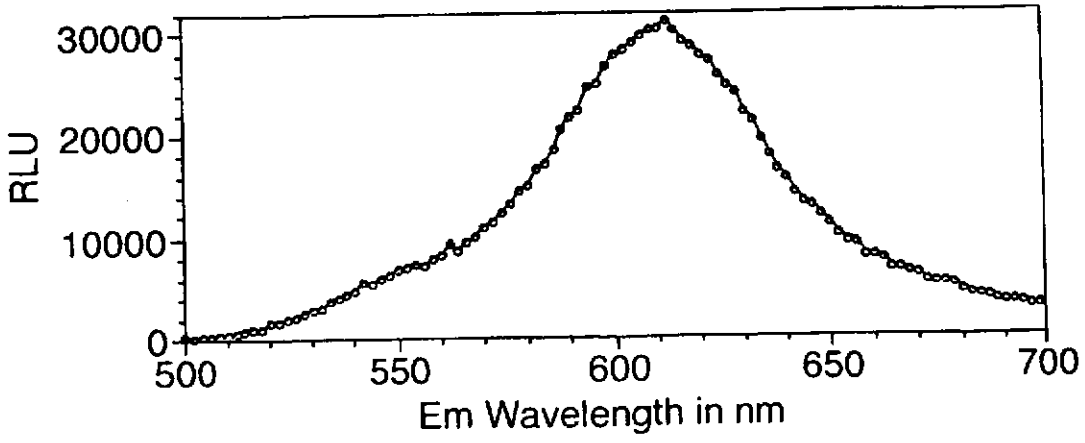


Fig.8(a).

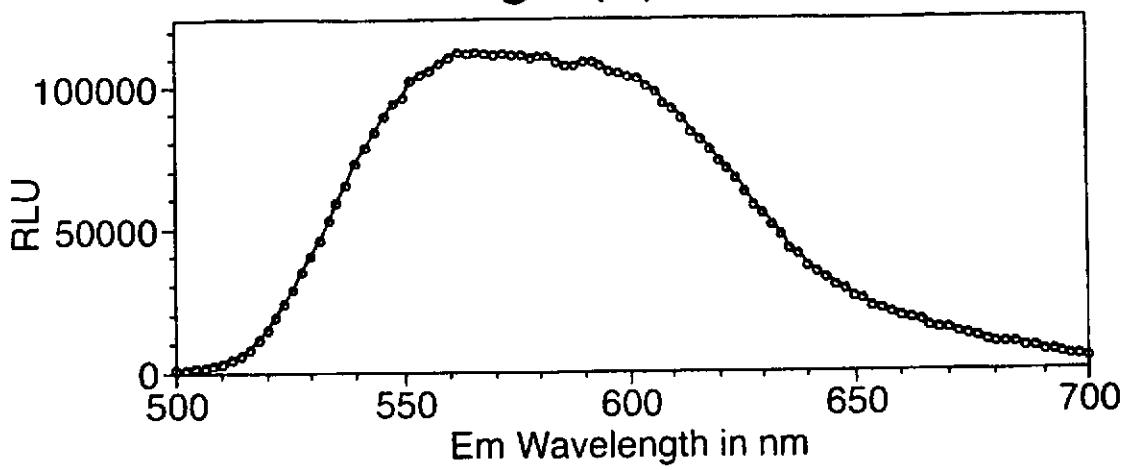


Fig.8(b).

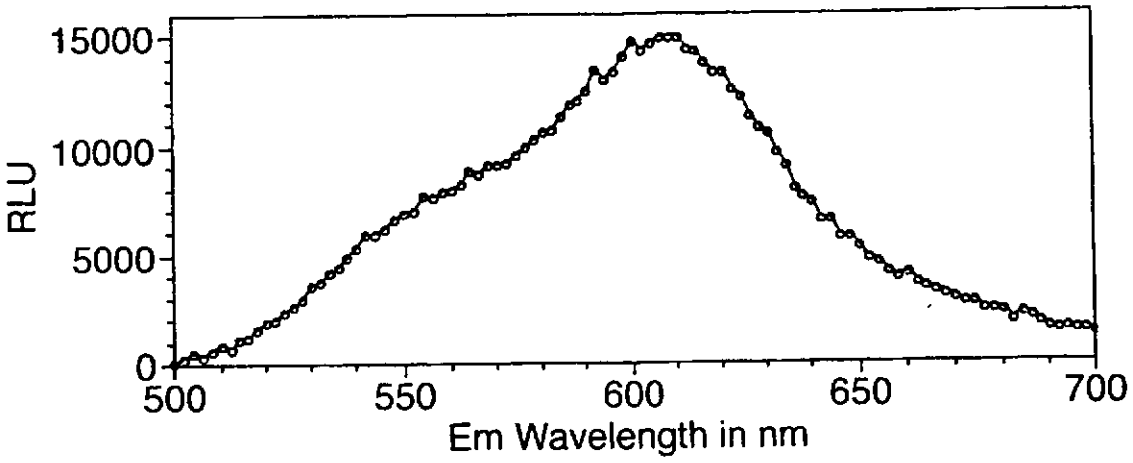


Fig.8(c).

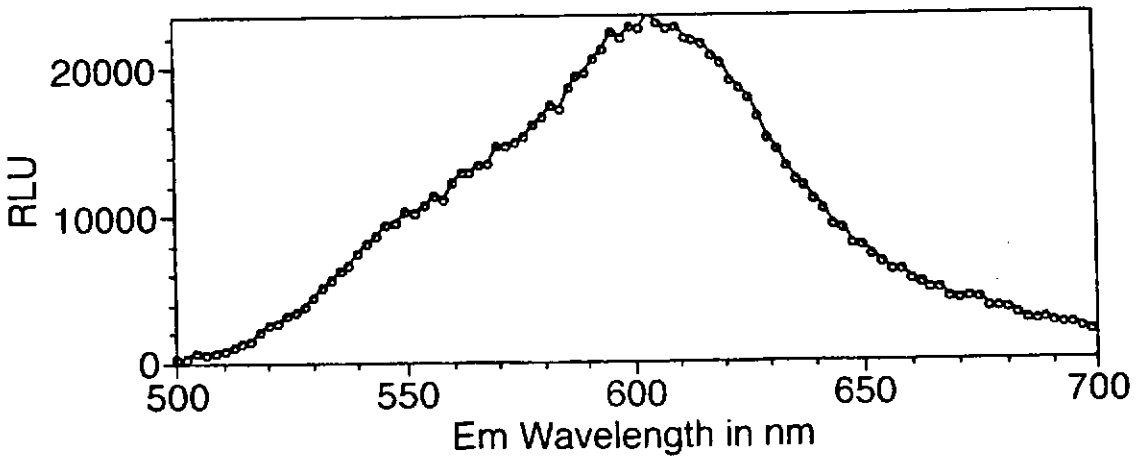
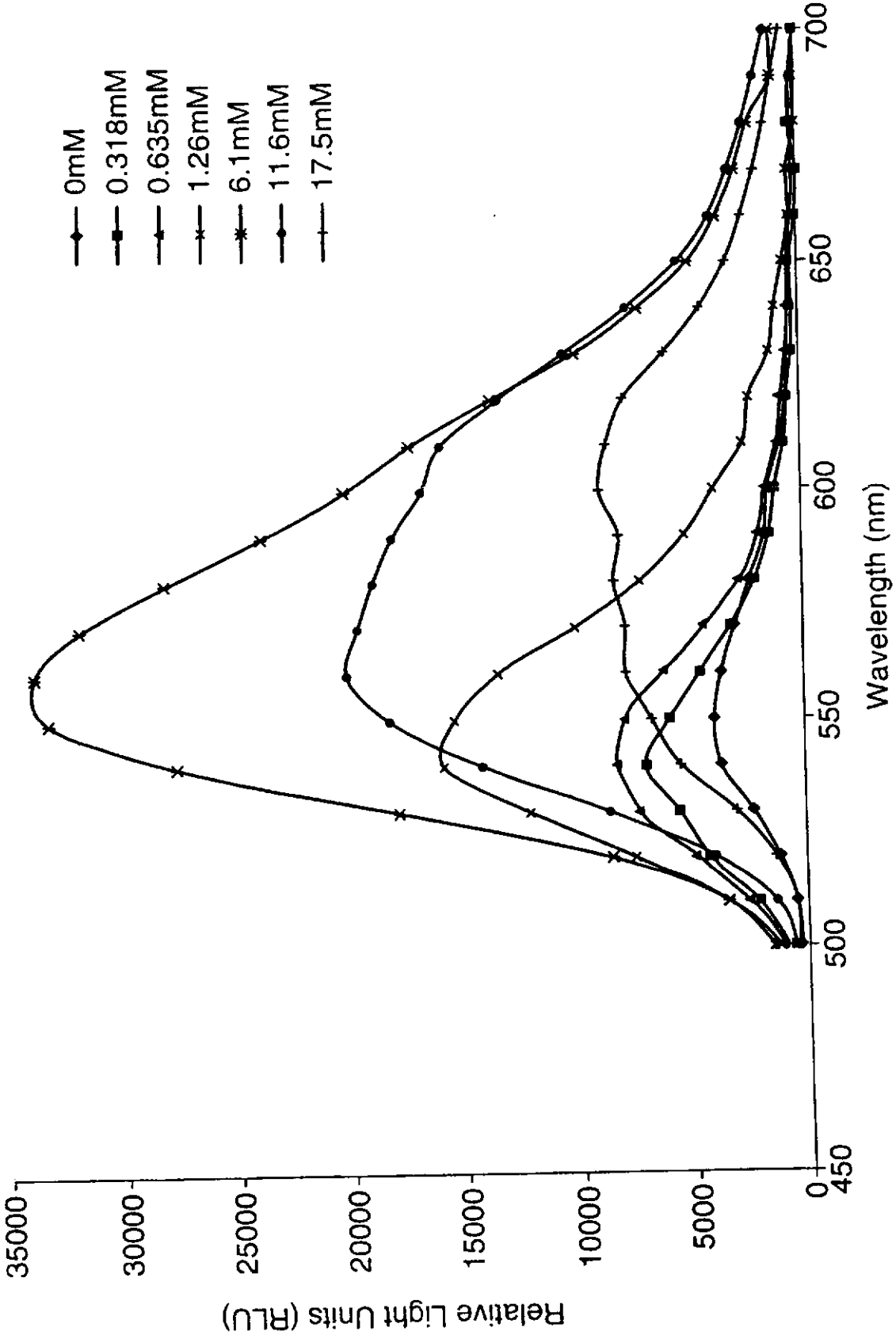


Fig.9.


0mM
0.318mM
0.635mM
1.26mM
6.1mM
11.6mM
17.5mM
Relative Light Units (RLU)
35000
30000
25000
20000
15000
10000
5000
0
450
500
550
600
650
700
Wavelength (nm)

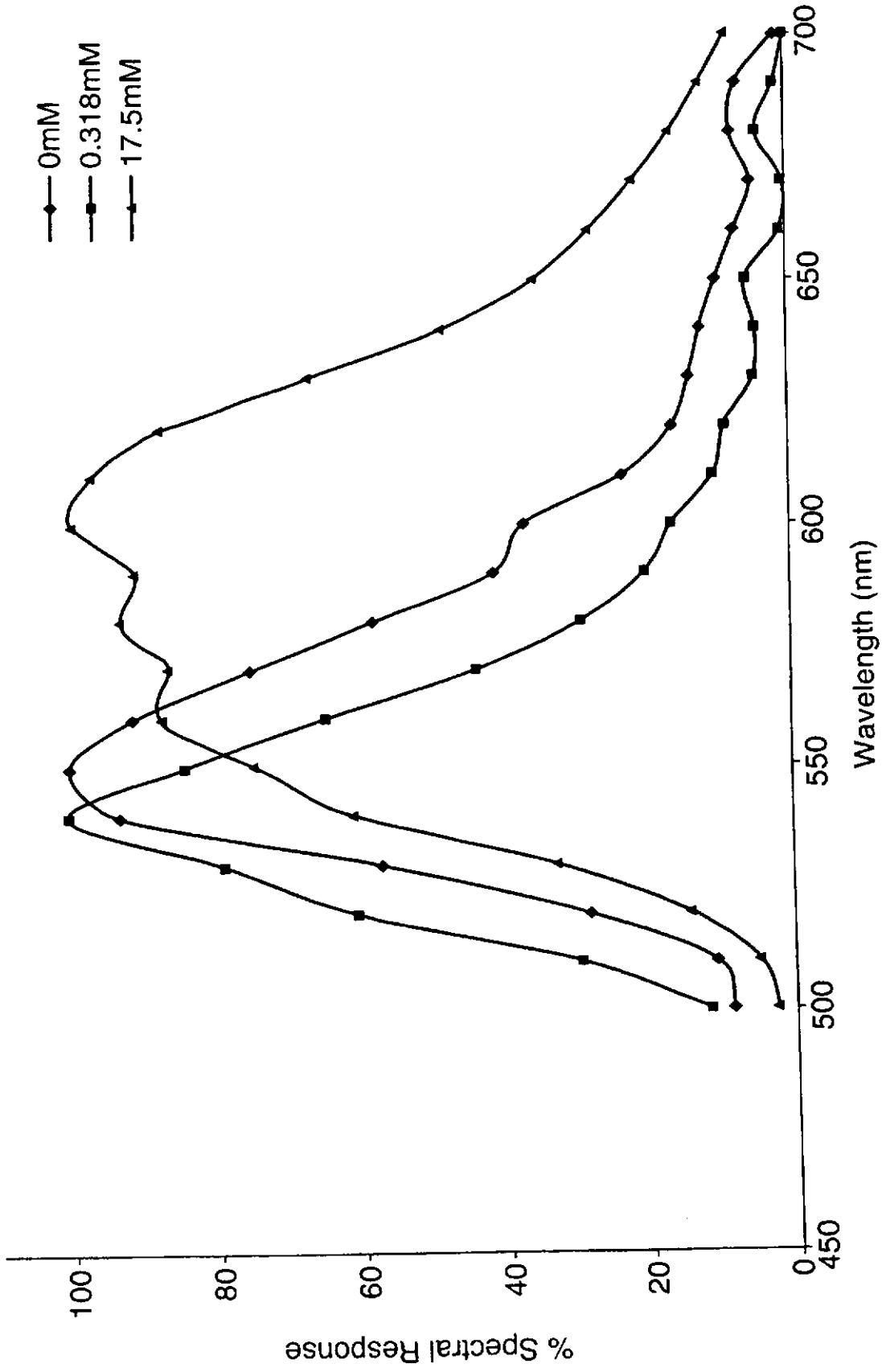
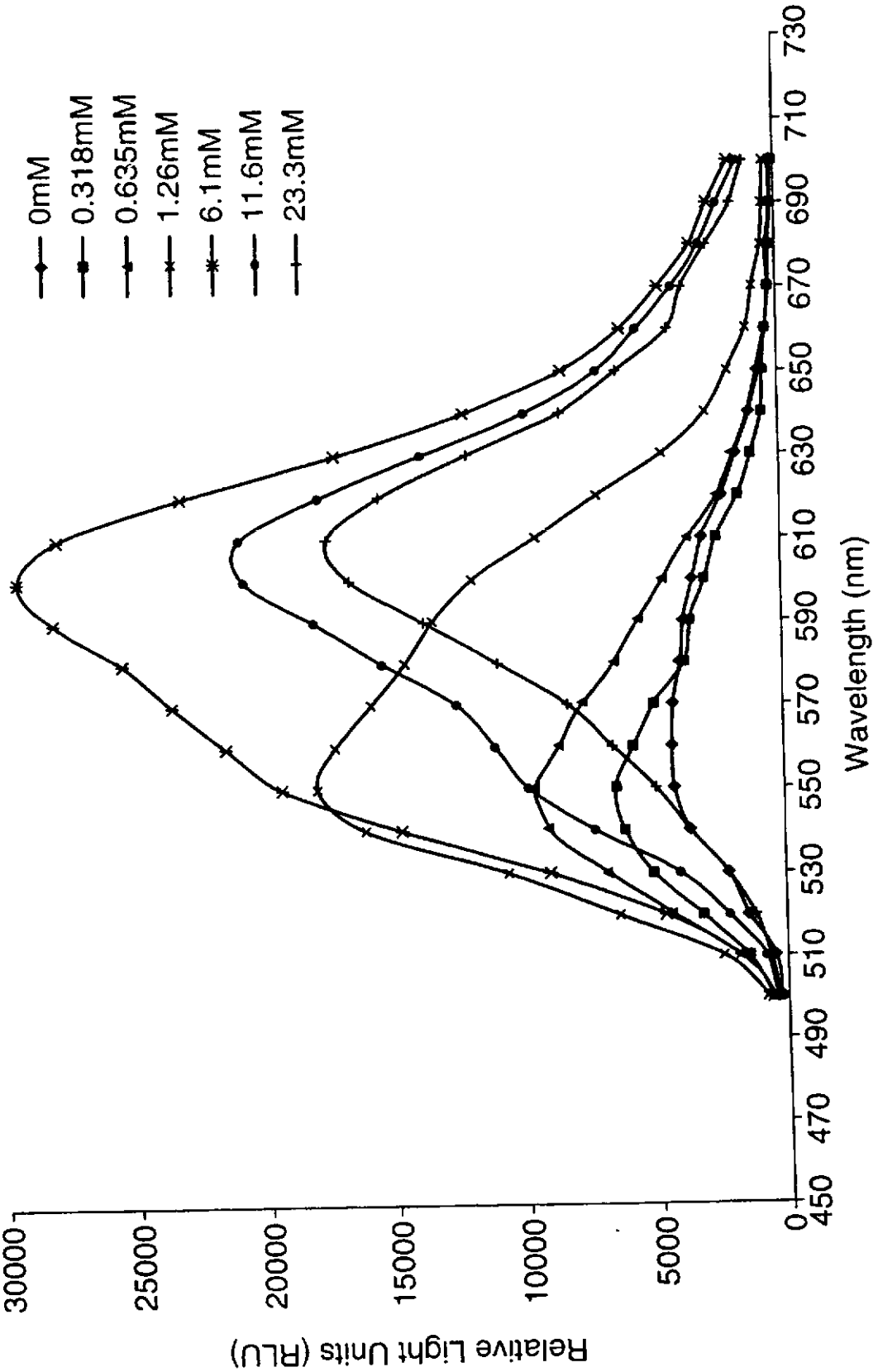

0mM
0.318mM
17.5mM
% Spectral Response
0
20
40
60
80
100
450
500
550
600
650
700
Wavelength (nm)

Fig.10.

Fig.11(a).


0mM
0.318mM
0.635mM
1.26mM
6.1mM
11.6mM
23.3mM
Relative Light Units (RLU)
0
5000
10000
15000
20000
25000
30000
450
470
490
510
530
550
570
590
610
630
650
670
690
710
730
Wavelength (nm)

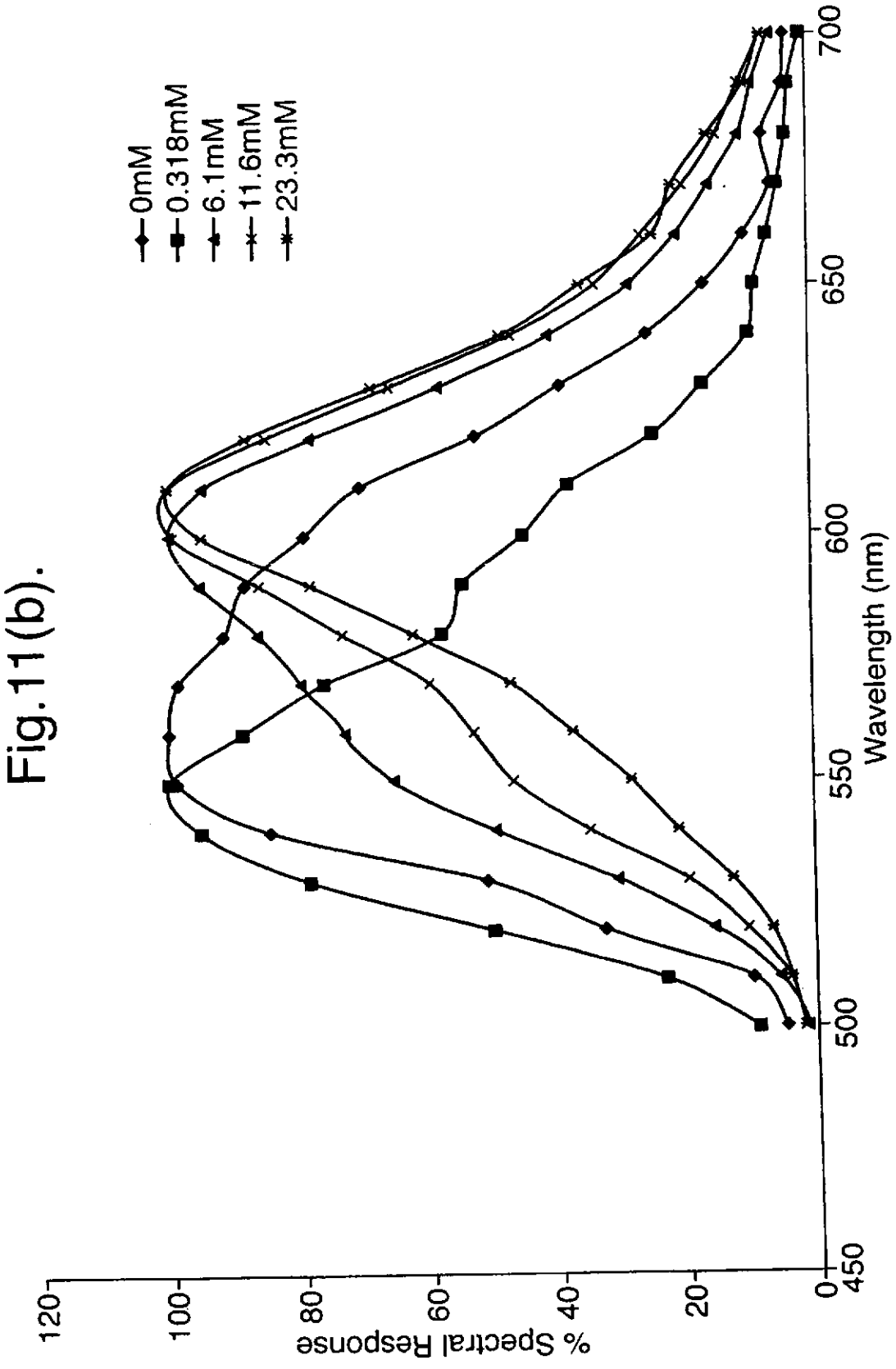

0mM
0.318mM
6.1mM
11.6mM
23.3mM
% Spectral Response
Wavelength (nm)
0
20
40
60
80
100
120
450
500
550
600
650
700

Fig.11(b).

Fig.12.

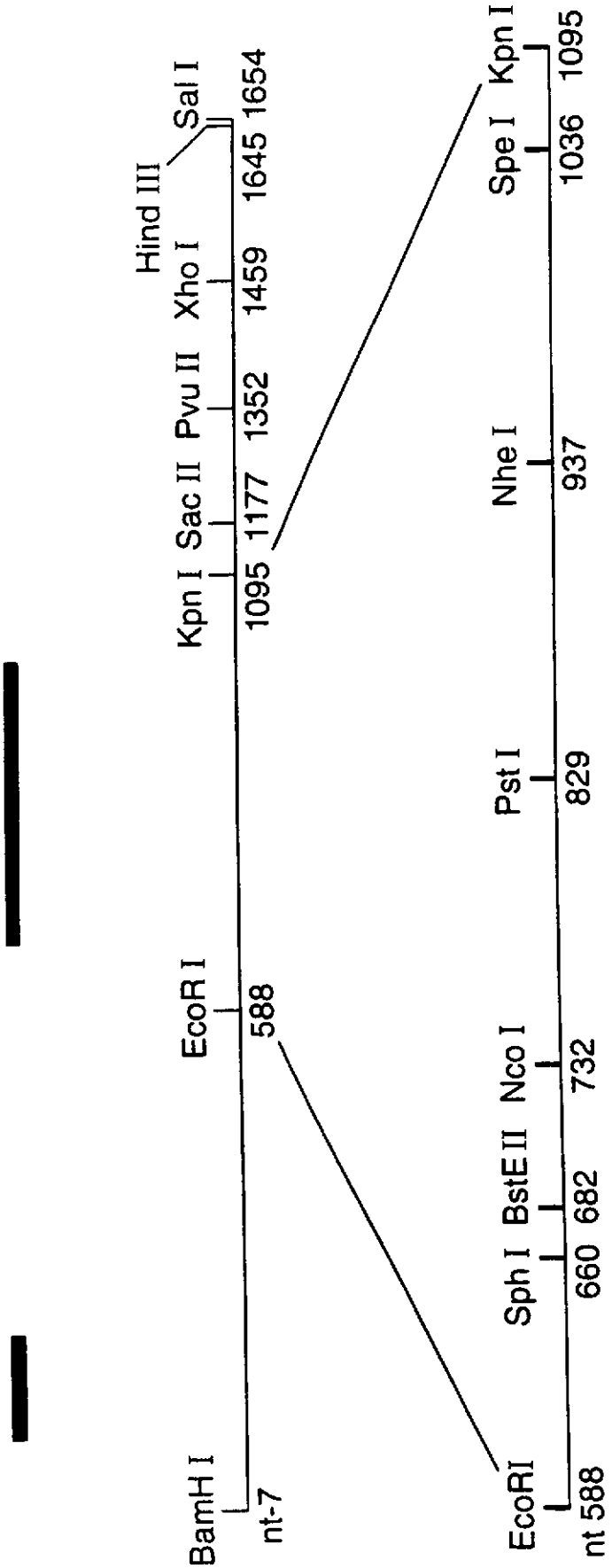

Hind III
Sal I
Xho I
Pvu II
Sac II
Kpn I
EcoR I
BamH I
nt-7
1654
1645
1459
1352
1177
1095
588
Kpn I
Spe I
Nhe I
Pst I
Nco I
BstE II
Sph I
EcoRI
nt 588
1095
1036
937
829
732
682
660

Fig.13.

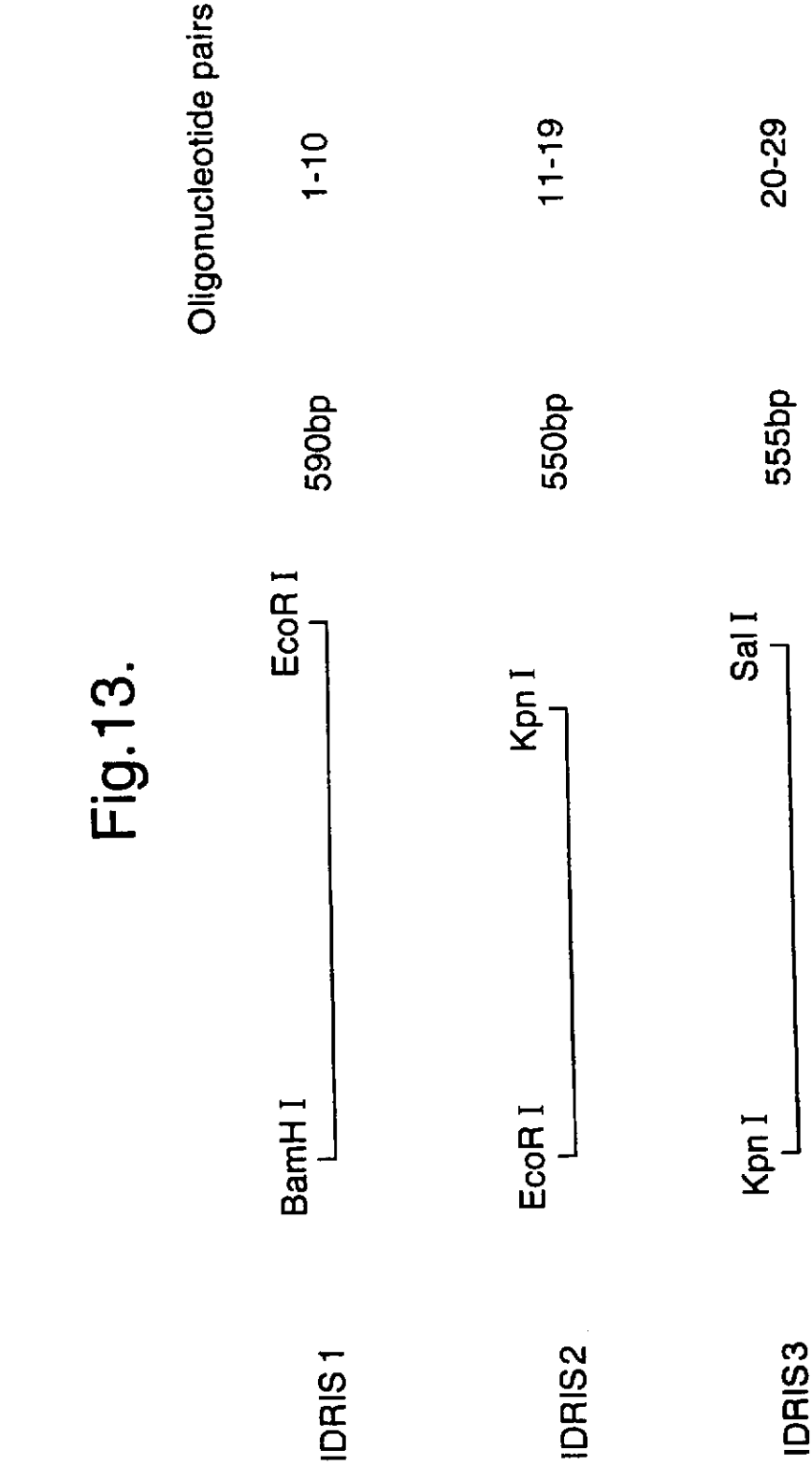

Oligonucleotide pairs
1-10
11-19
20-29
590bp
550bp
555bp
EcoR I
Kpn I
Sal I
BamH I
EcoR I
Kpn I
IDRIS 1
IDRIS2
IDRIS3

Fig.14.(1/8)

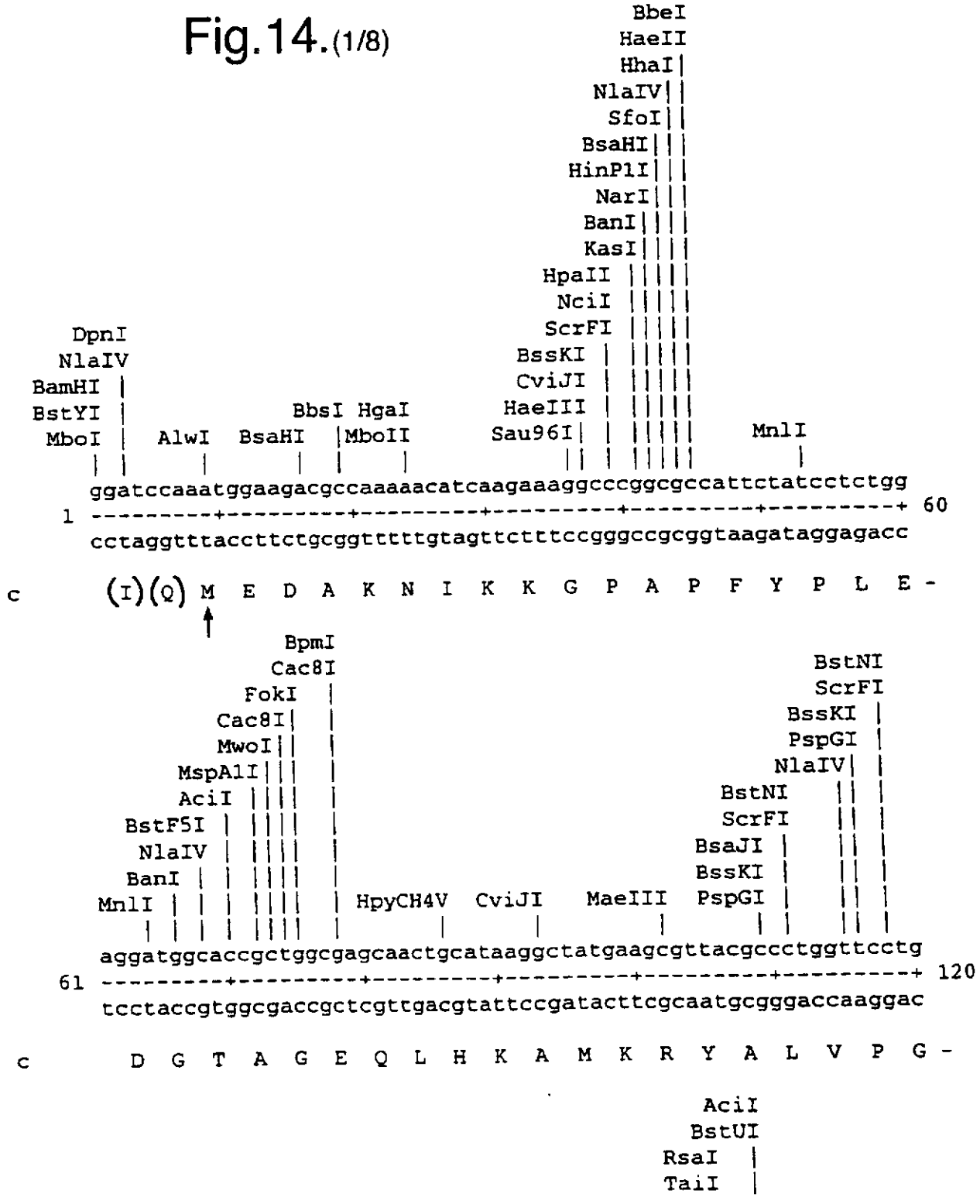

BbeI
HaeII
HhaI
NlaIV
SfoI
BsaHI
HinP1I
NarI
BanI
KasI
HpaII
NciI
ScrFI
BssKI
CviJI
HaeIII
Sau96I
DpnI
NlaIV
BamHI
BstYI
MboI
AlwI
BsaHI
BbsI
HgaI
MboII
MnlI
ggatccaaatggaagacgccaaaaacatcaagaaaggcccggcgccattctatcctctgg
1 --------+--------+--------+--------+--------+--------+--------+ 60
cctaggtttaccttctgcggttttgtagttctttccgggccgcggtaagataggagacc
c (I)(Q) M E D A K N I K K G P A P F Y P L E -
BpmI
Cac8I
FokI
Cac8I
MwoI
MspA1I
AciI
BstF5I
NlaIV
BanI
MnlI
HpyCH4V
CviJI
MaeIII
BstNI
ScrFI
BssKI
PspGI
NlaIV
BstNI
ScrFI
BsaJI
BssKI
PspGI
aggatggcaccgctggcgagcaactgcataaggctatgaagcgttacgccctggttcctg
61 --------+--------+--------+--------+--------+--------+--------+ 120
tcctaccgtggcgaccgctcgttgacgtattccgatacttcgcaatgcgggaccaaggac
c D G T A G E Q L H K A M K R Y A L V P G -
AciI
BstUI
RsaI
TaiI

Fig.14 (Cont). (2/8)

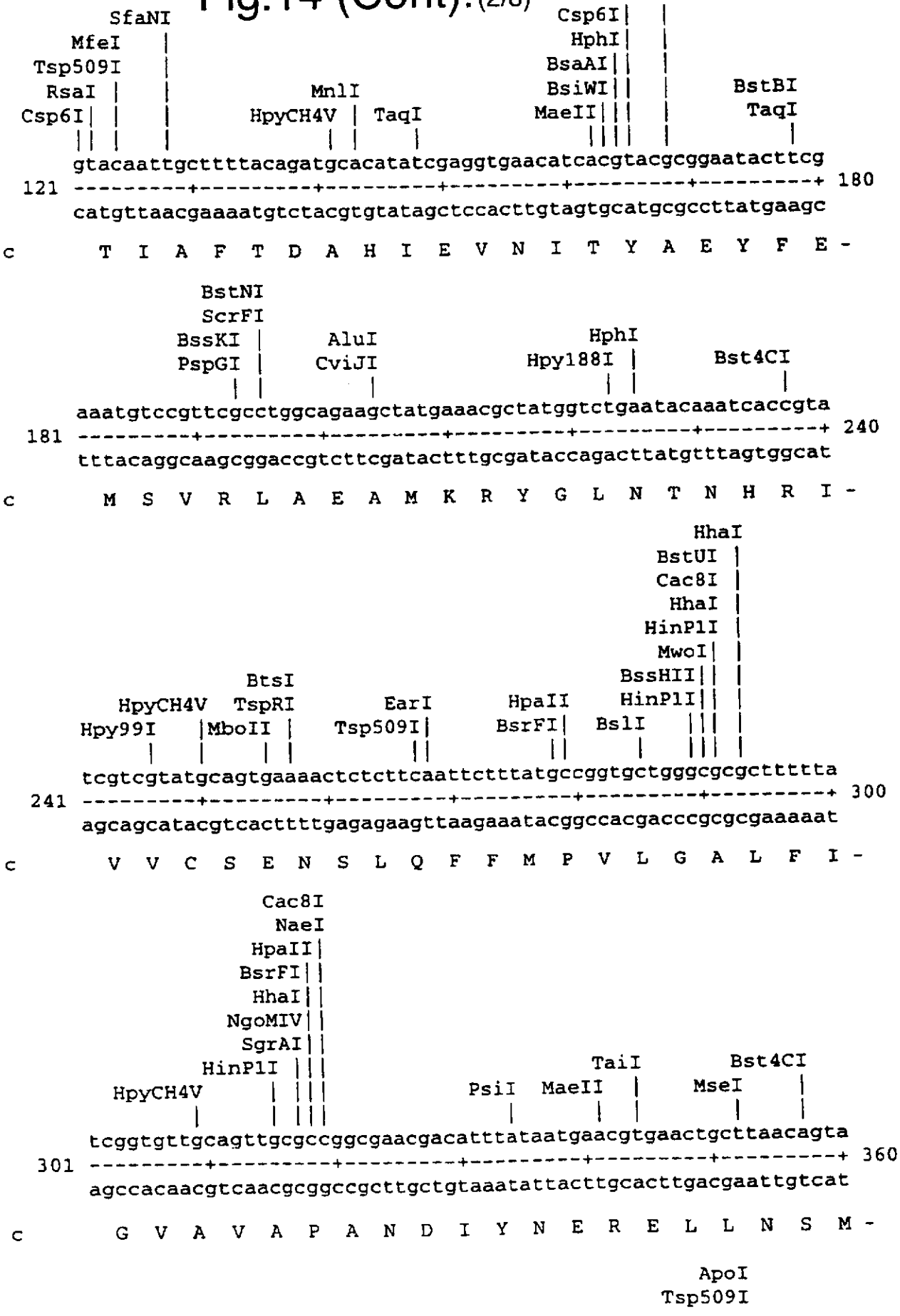


Fig.14 (Cont).(3/8)

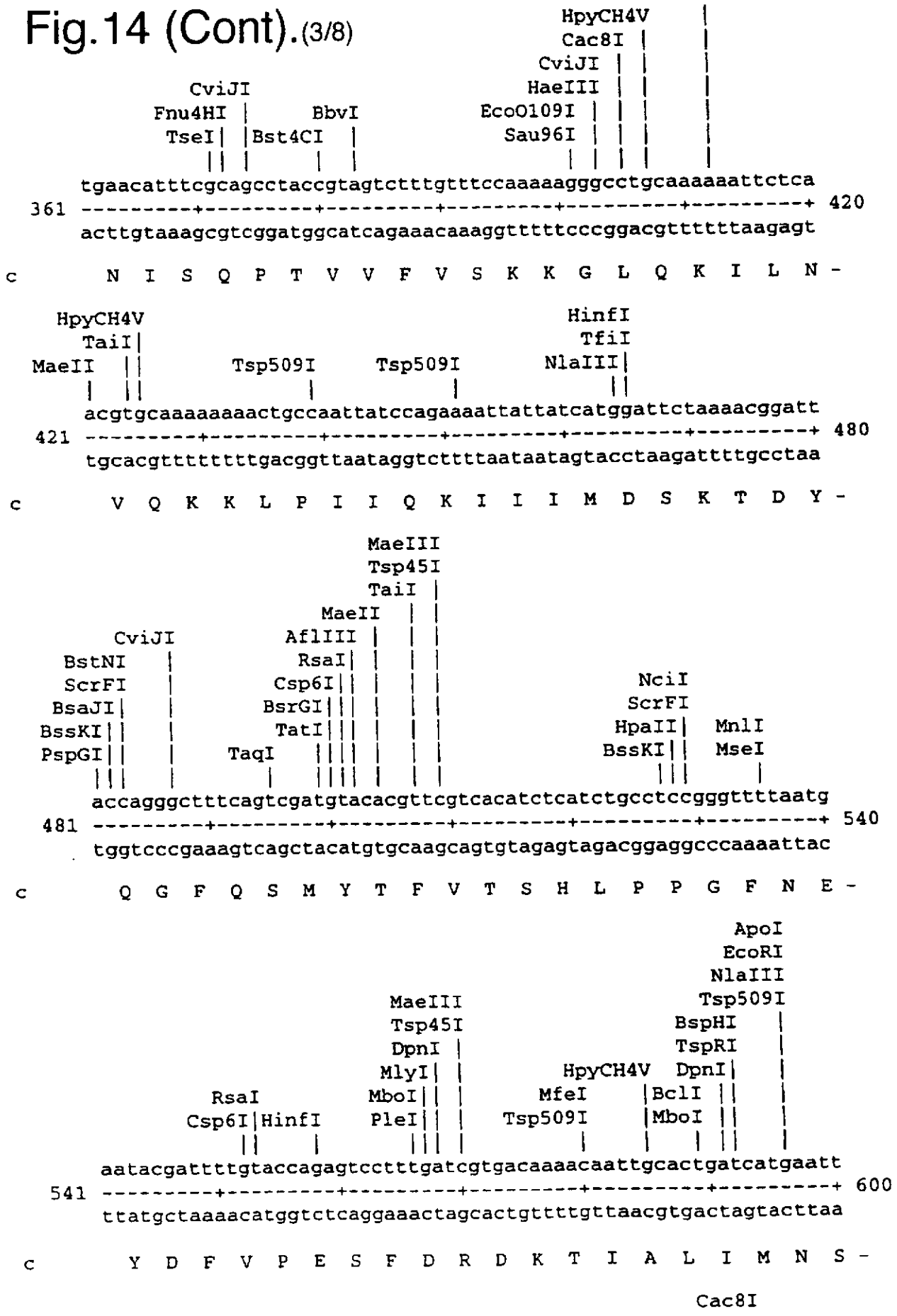


Fig.14 (Cont). (4/8)

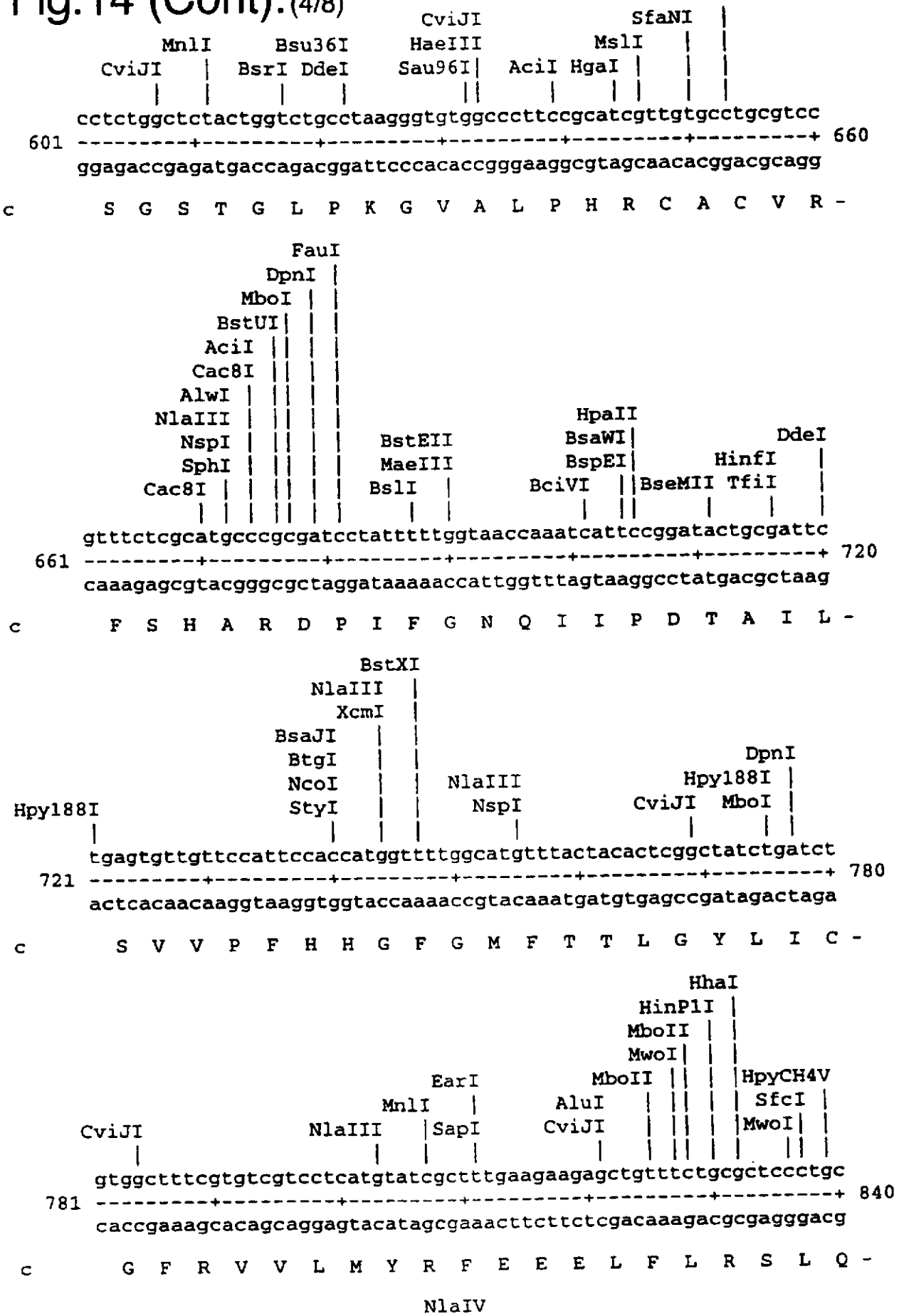


Fig.14 (Cont).(5/8)

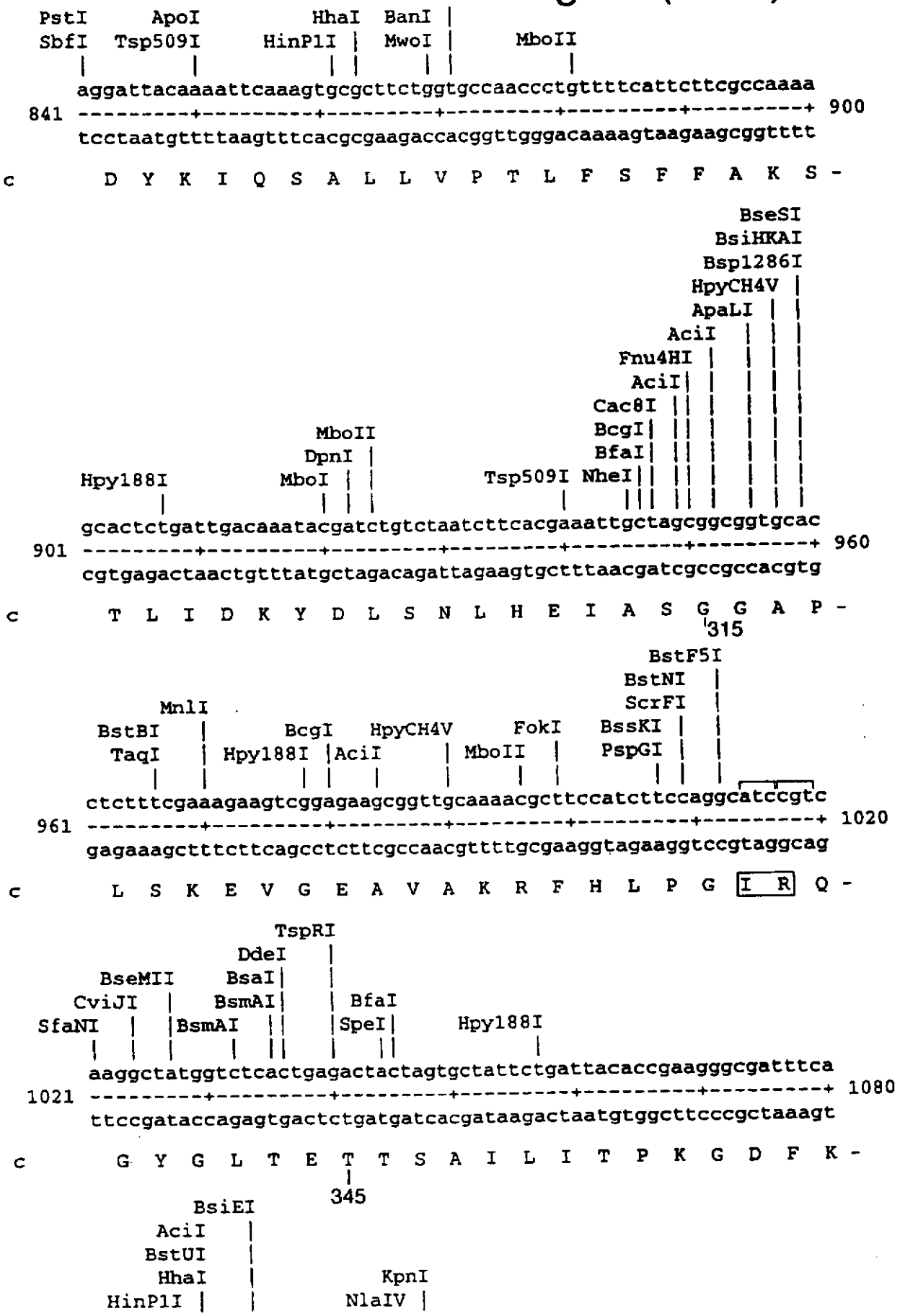


Fig.14 (Cont).(6/8)

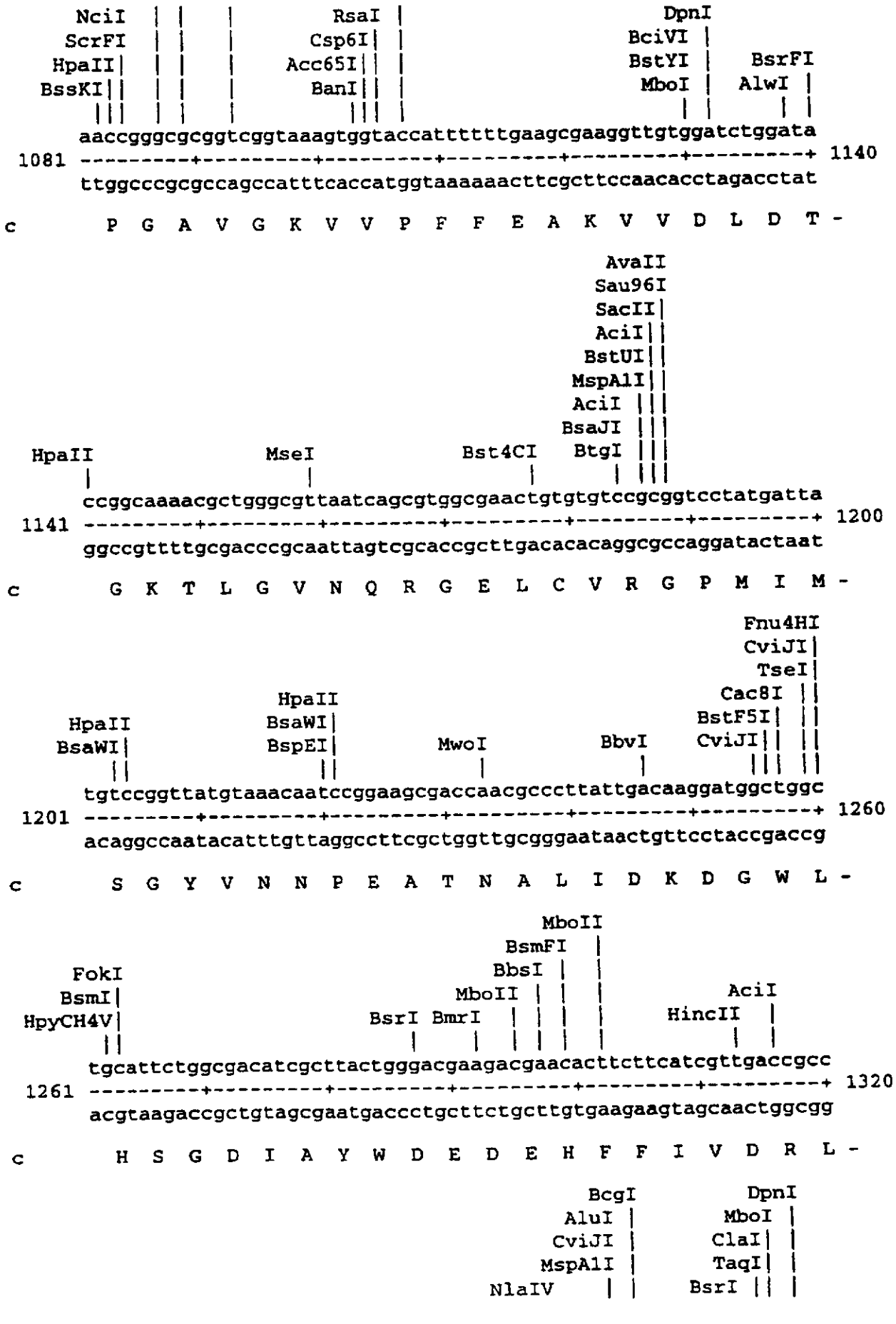


Fig.14 (Cont). (7/8)

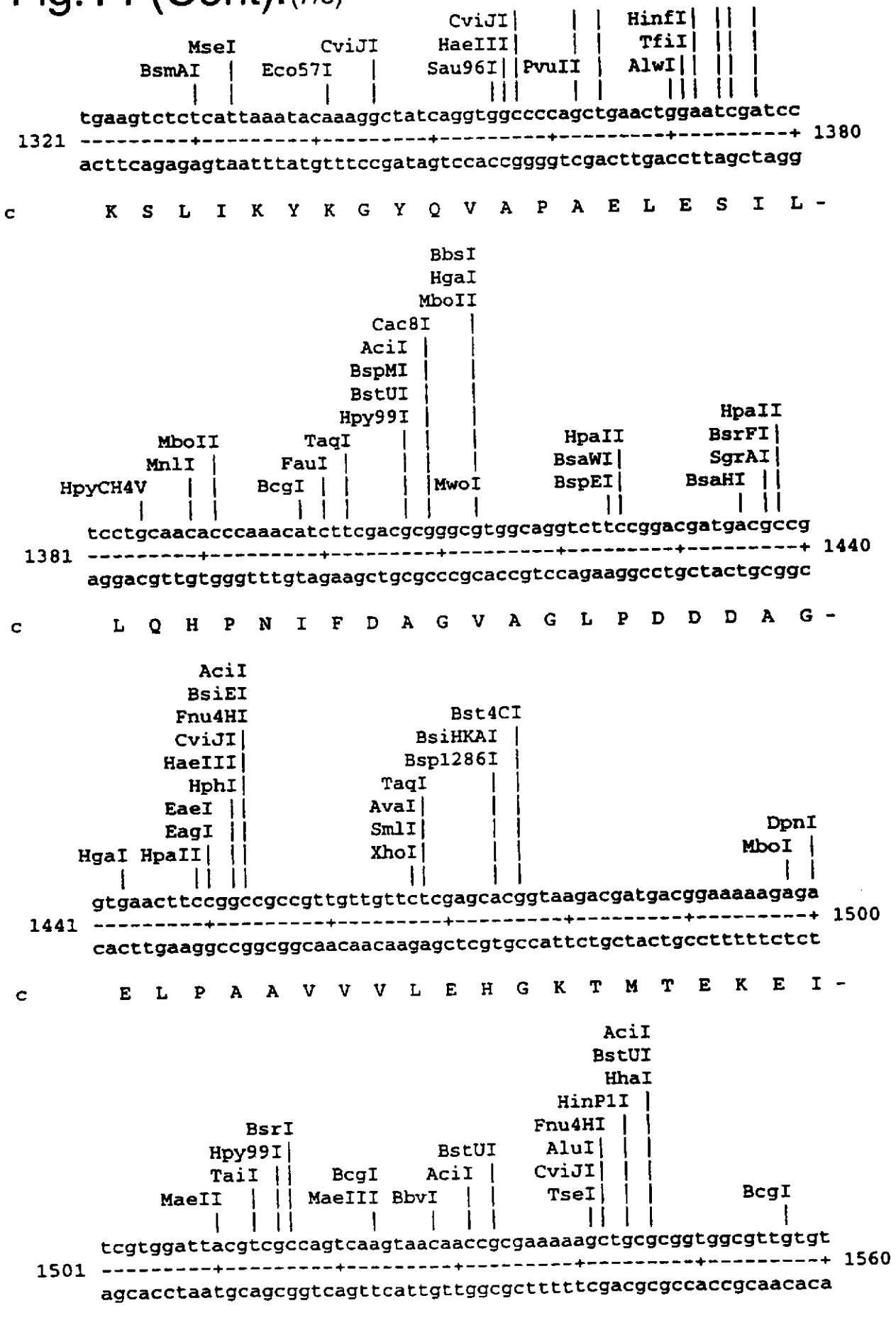


Fig.14 (Cont).(8/8)

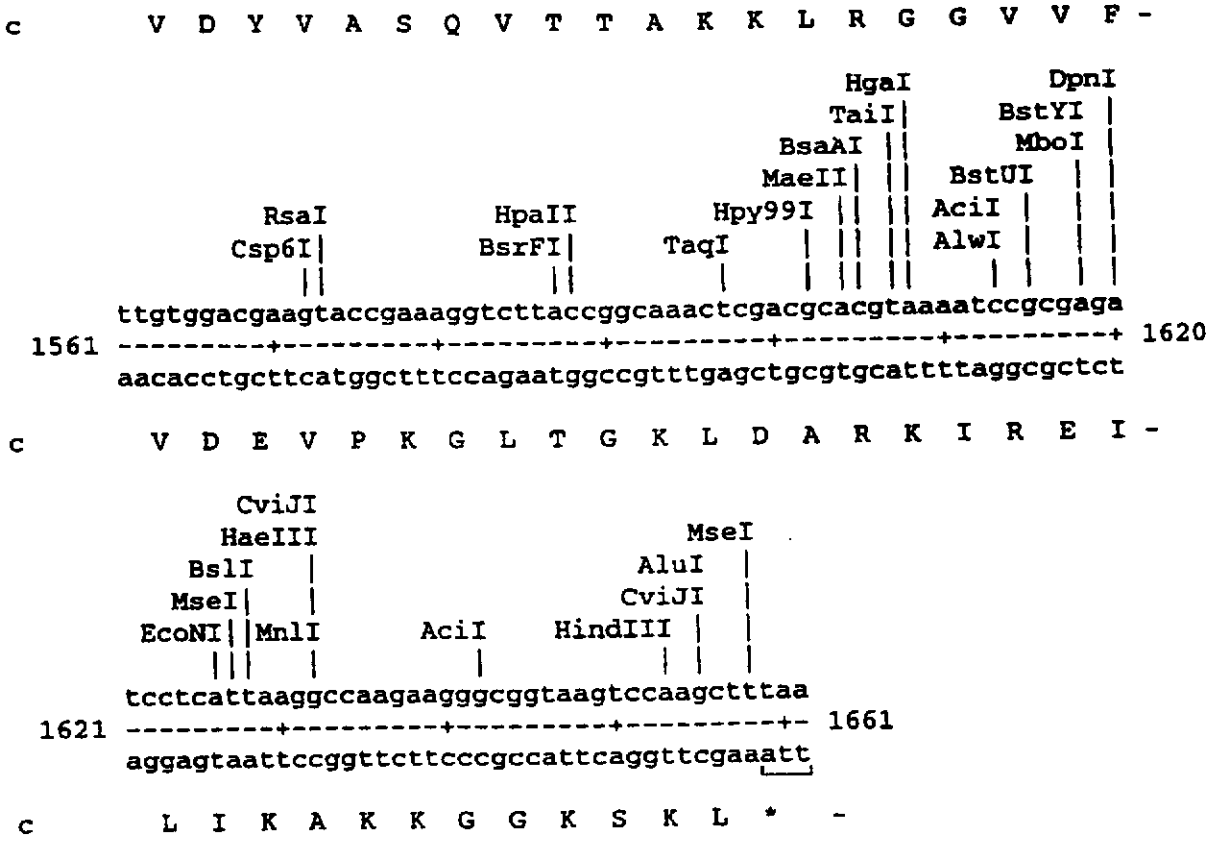


Fig.15.

Inactivation of mutants E354I+D357Y and IDRIS (FA) at 50C

