Fig. S1

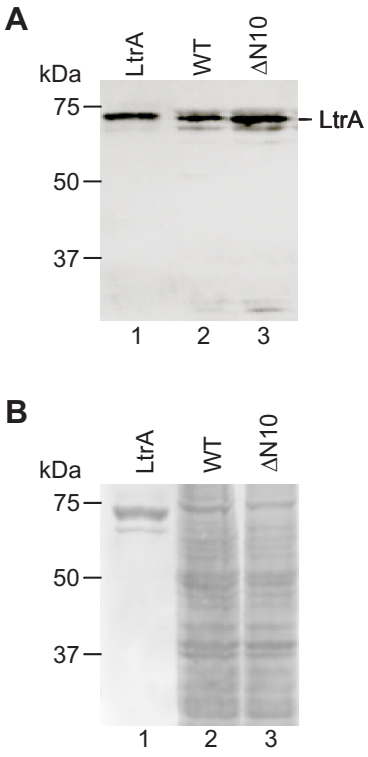

A
LtrA
WT
ΔN10
kDa
75
50
37
LtrA
1
2
3
B
LtrA
WT
ΔN10
kDa
75
50
37
1
2
3

Fig. S2

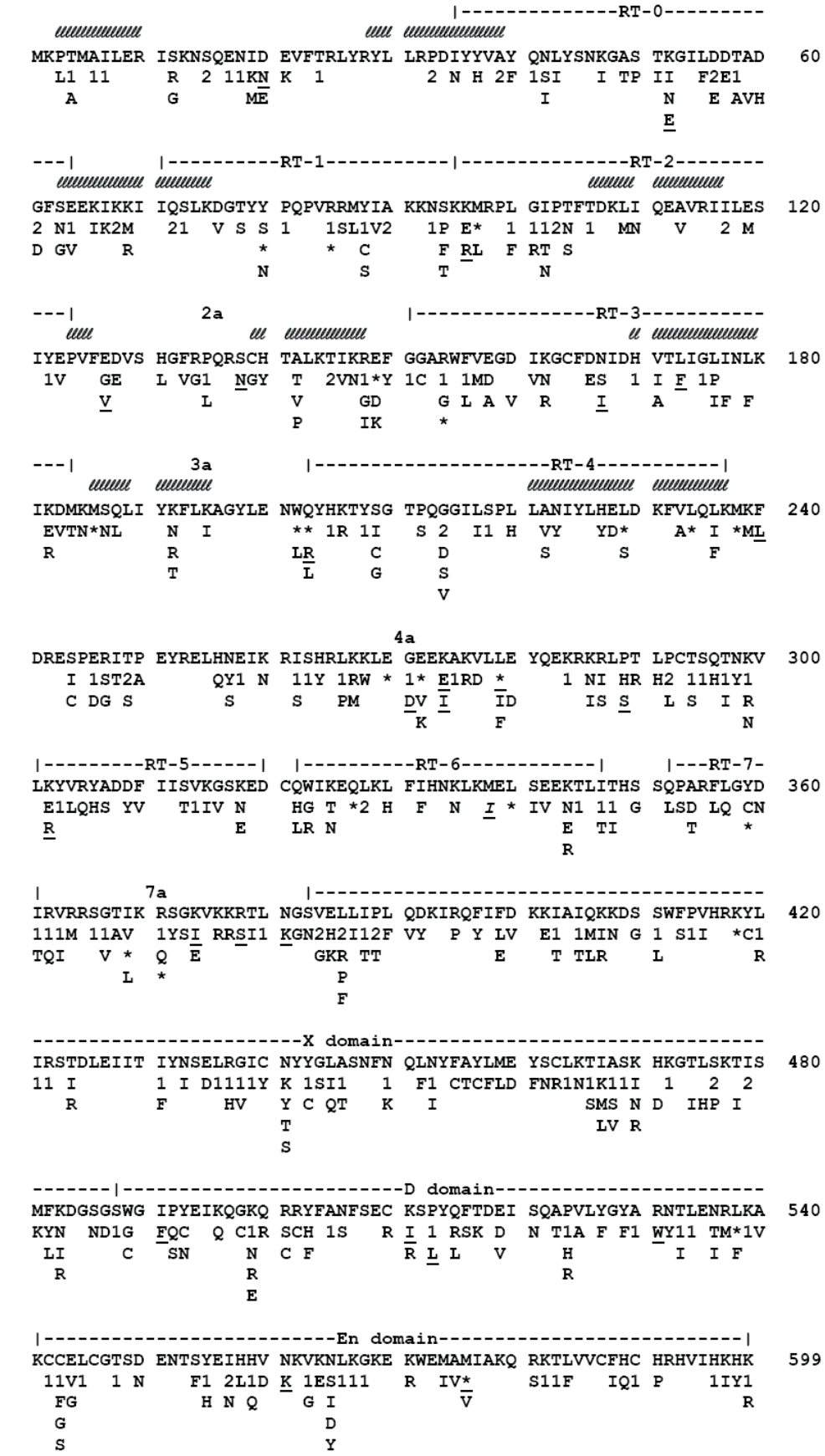

RT-0
RT-1
RT-2
2a
RT-3
3a
RT-4
4a
RT-5
RT-6
RT-7
7a
X domain
D domain
En domain

Fig. S3

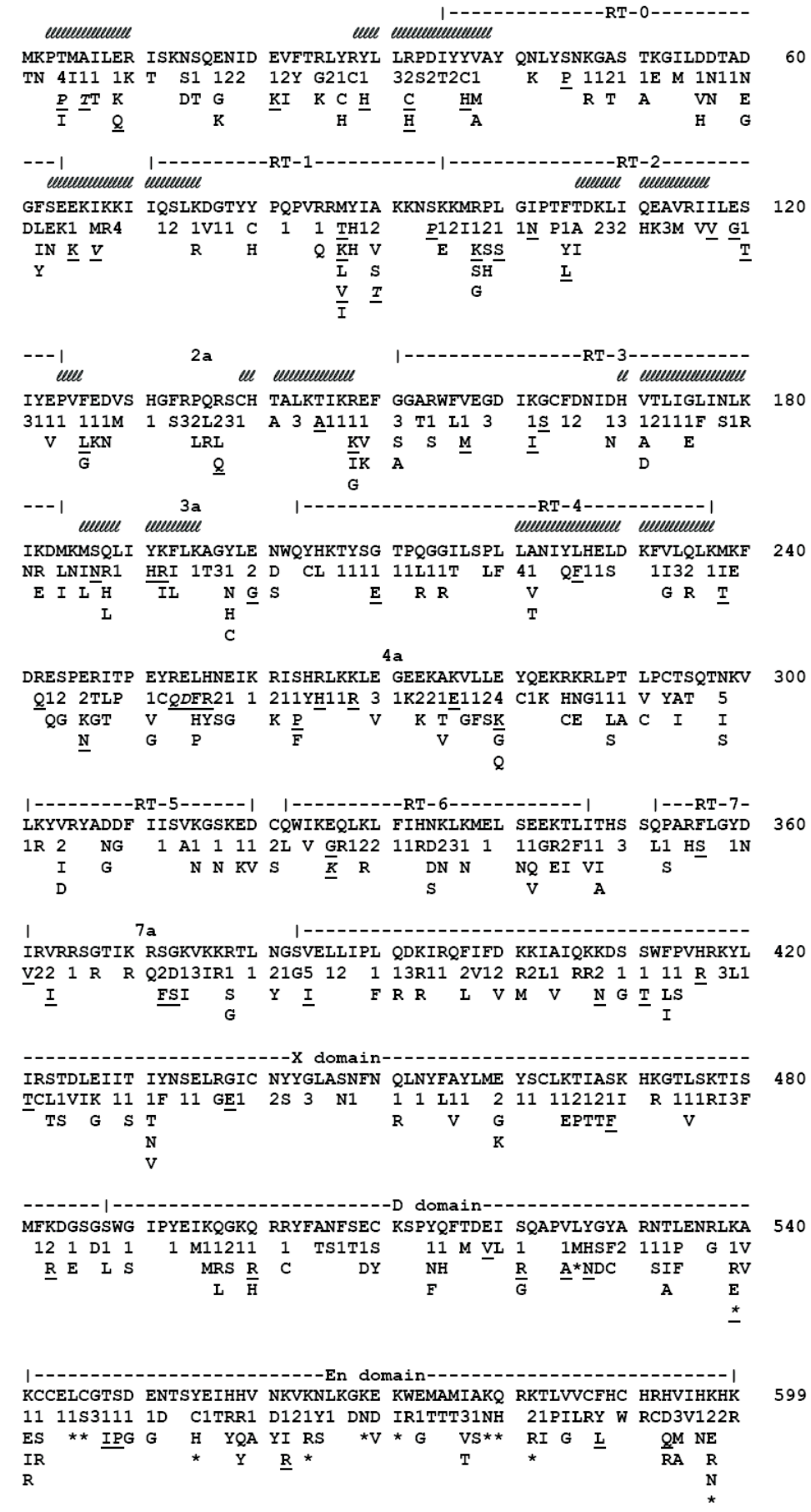

RT-0
RT-1
RT-2
2a
RT-3
3a
RT-4
4a
RT-5
RT-6
RT-7-
7a
X domain
D domain
En domain

Fig. S4

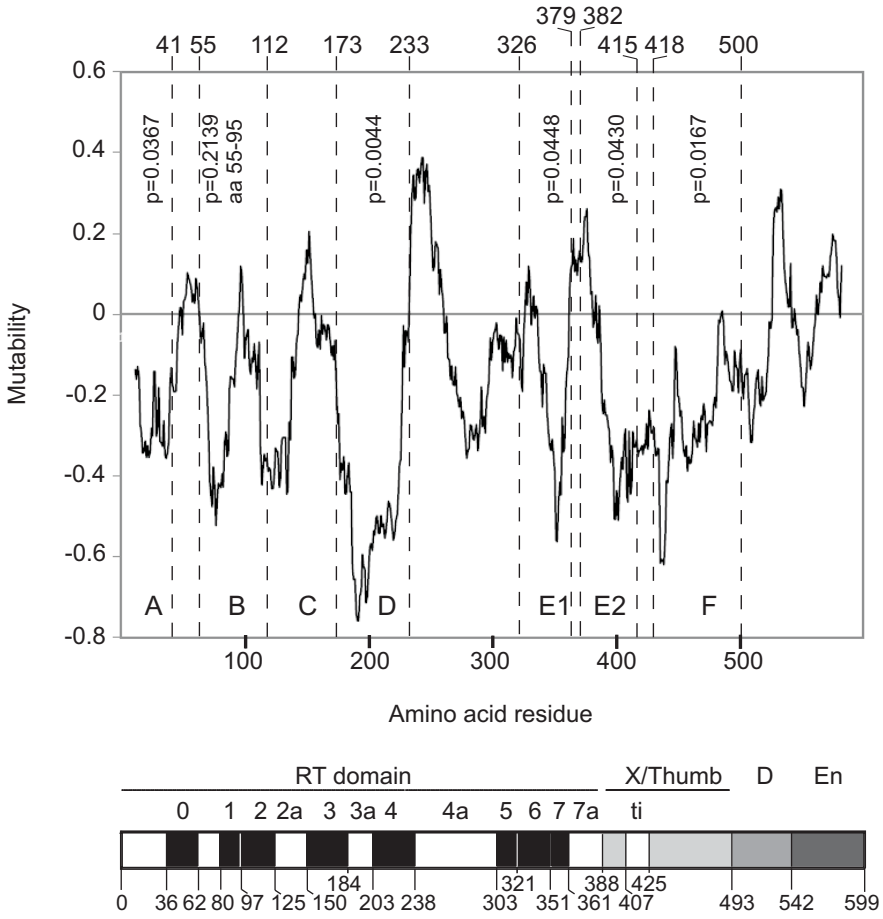

379 382
41 55 112 173 233 326 415 418 500
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
Mutability
p=0.0367
p=0.2139
aa 55-95
p=0.0044
p=0.0448
p=0.0430
p=0.0167
A B C D E1 E2 F
100 200 300 400 500
Amino acid residue
RT domain
X/Thumb
D
En
0 1 2 2a 3 3a 4 4a 5 6 7 7a ti
0 36 62 80 97 125 150 184 203 238 303 321 351 361 388 407 425 493 542 599

Fig. S5

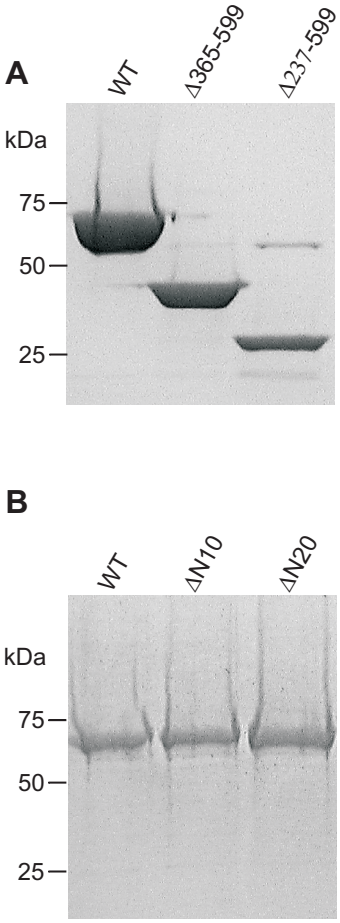


Fig. S6

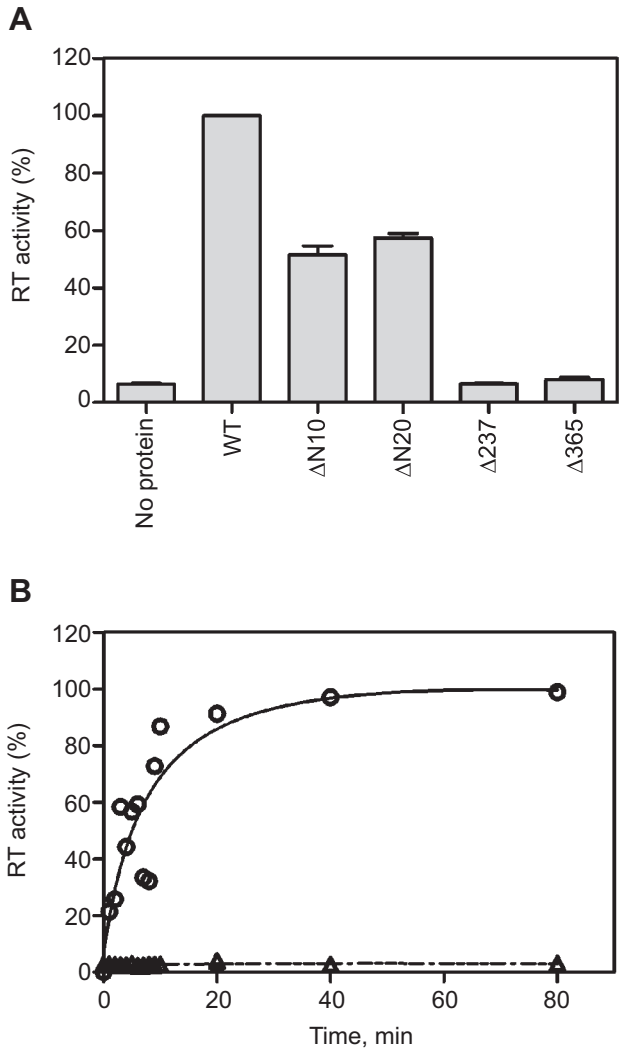
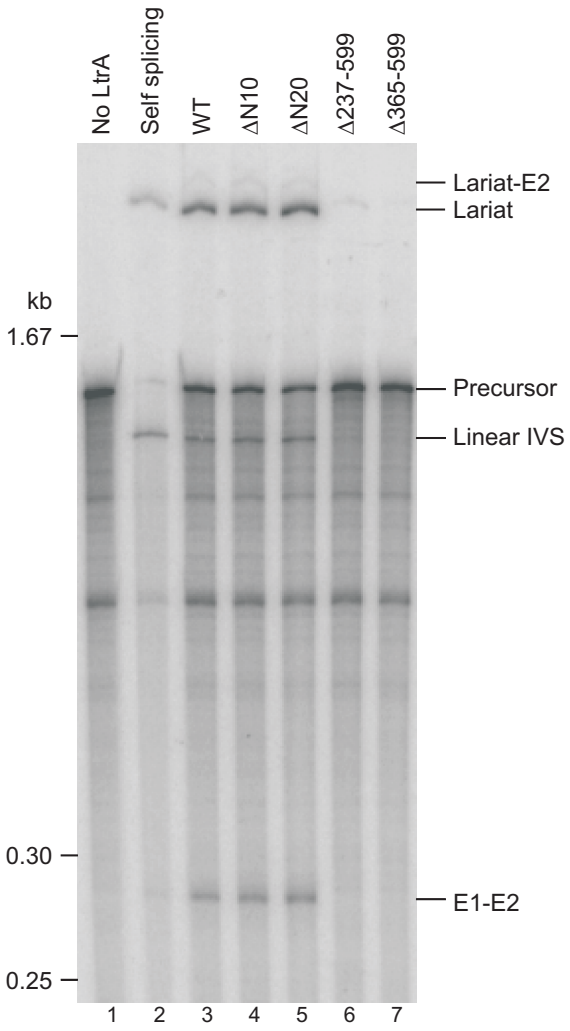

A
120
100
80
60
40
20
0
RT activity (%)
No protein
WT
ΔN10
ΔN20
Δ237
Δ365
B
120
100
80
60
40
20
0
RT activity (%)
0
20
40
60
80
Time, min

Fig. S7


No LtrA
Self splicing
WT
ΔN10
ΔN20
Δ237-599
Δ365-599
Lariat-E2
Lariat
kb
1.67
Precursor
Linear IVS
0.30
E1-E2
0.25
1
2
3
4
5
6
7