Figure 1

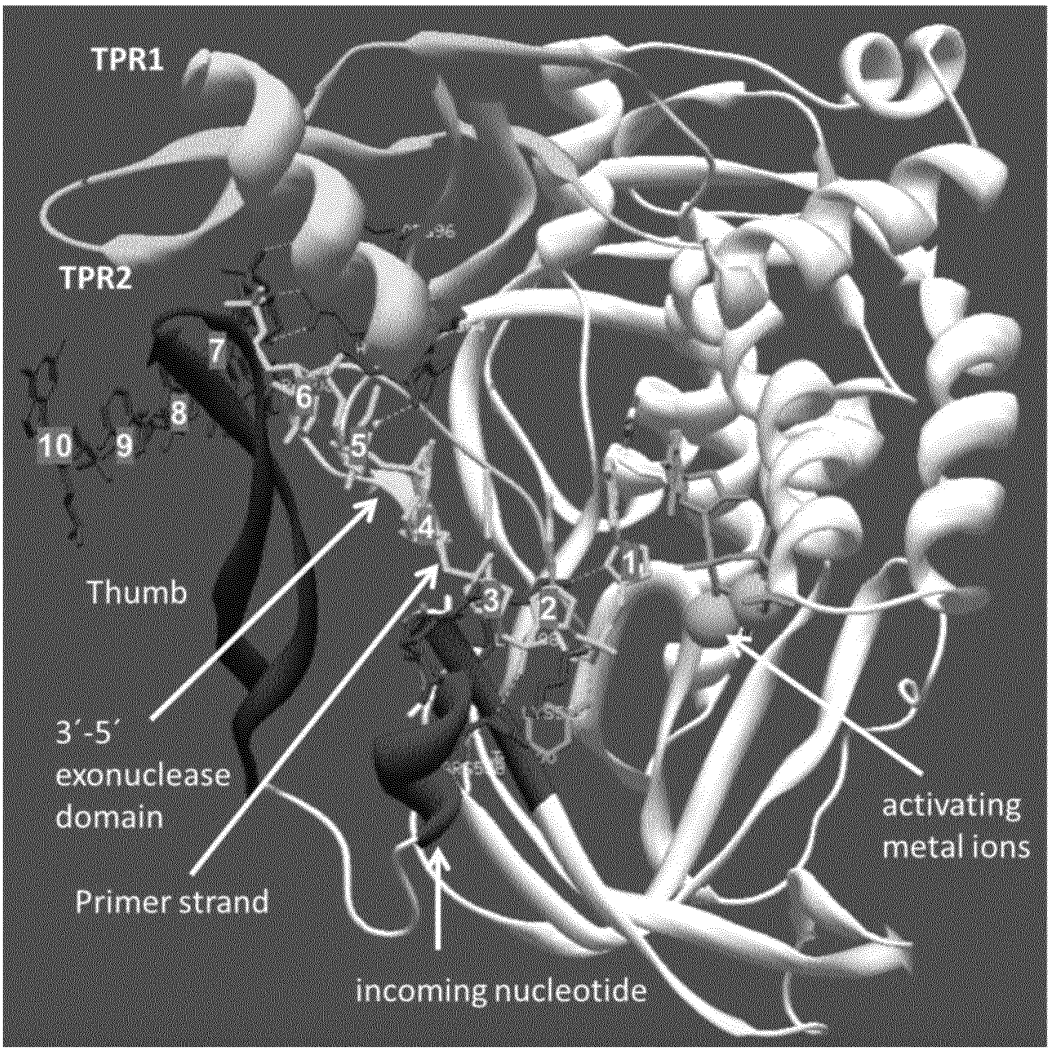

TPR1
TPR2
7
6
8
10
9
5
4
1
3
2
Thumb
3´-5´
exonuclease
domain
Primer strand
activating
metal ions
incoming nucleotide

Figure 2

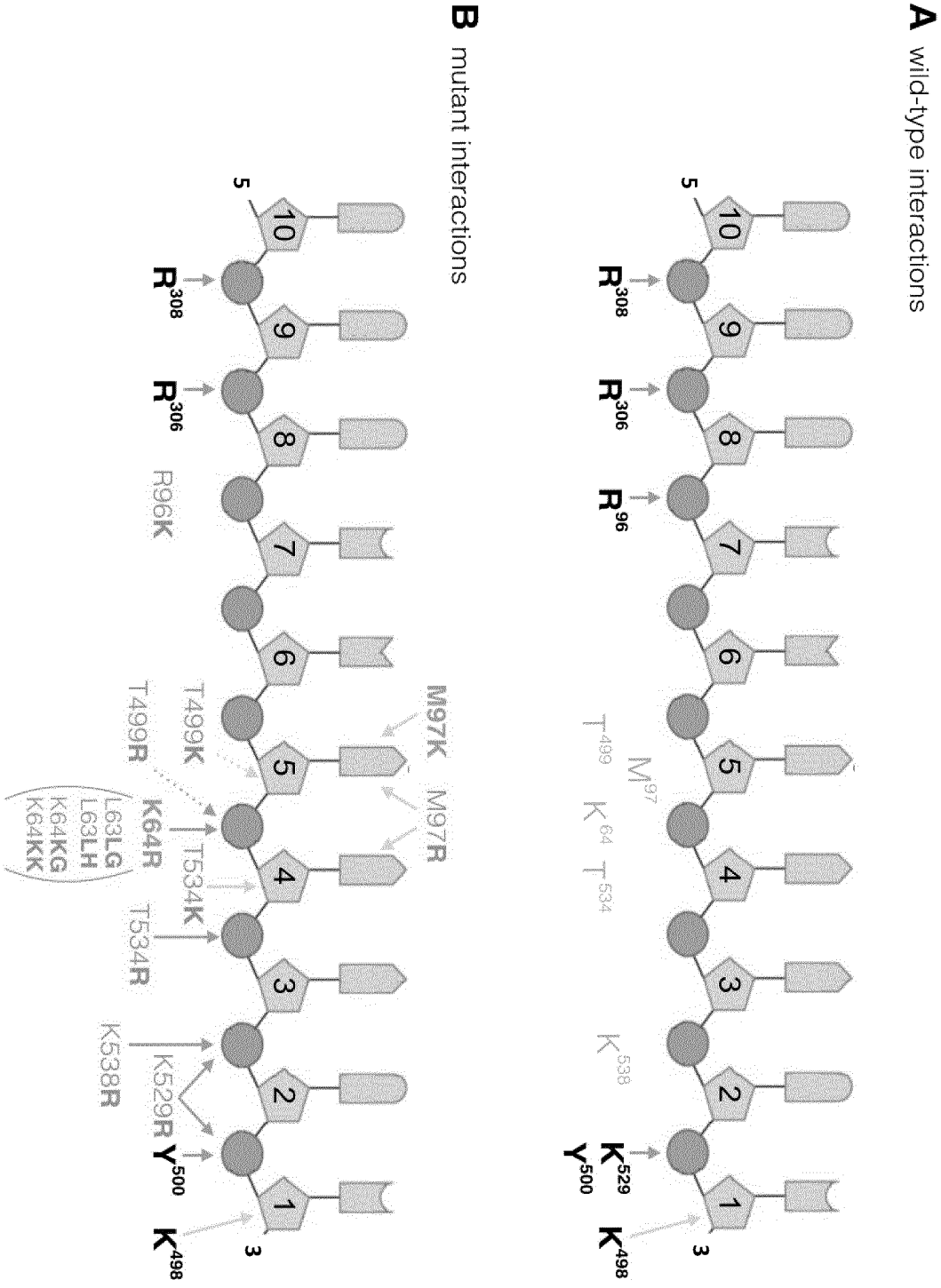

A wild-type interactions
B mutant interactions
5
10
9
8
7
6
5
4
3
2
1
3
R308
R306
R96
K529
Y500
K498
M97
T499
K64
T534
K538
R96K
M97K
M97R
T499K
T499R
K64R
L63LG
L63LH
K64KG
K64KK
T534K
T534R
K538R
K529R
Y500

Figure 3

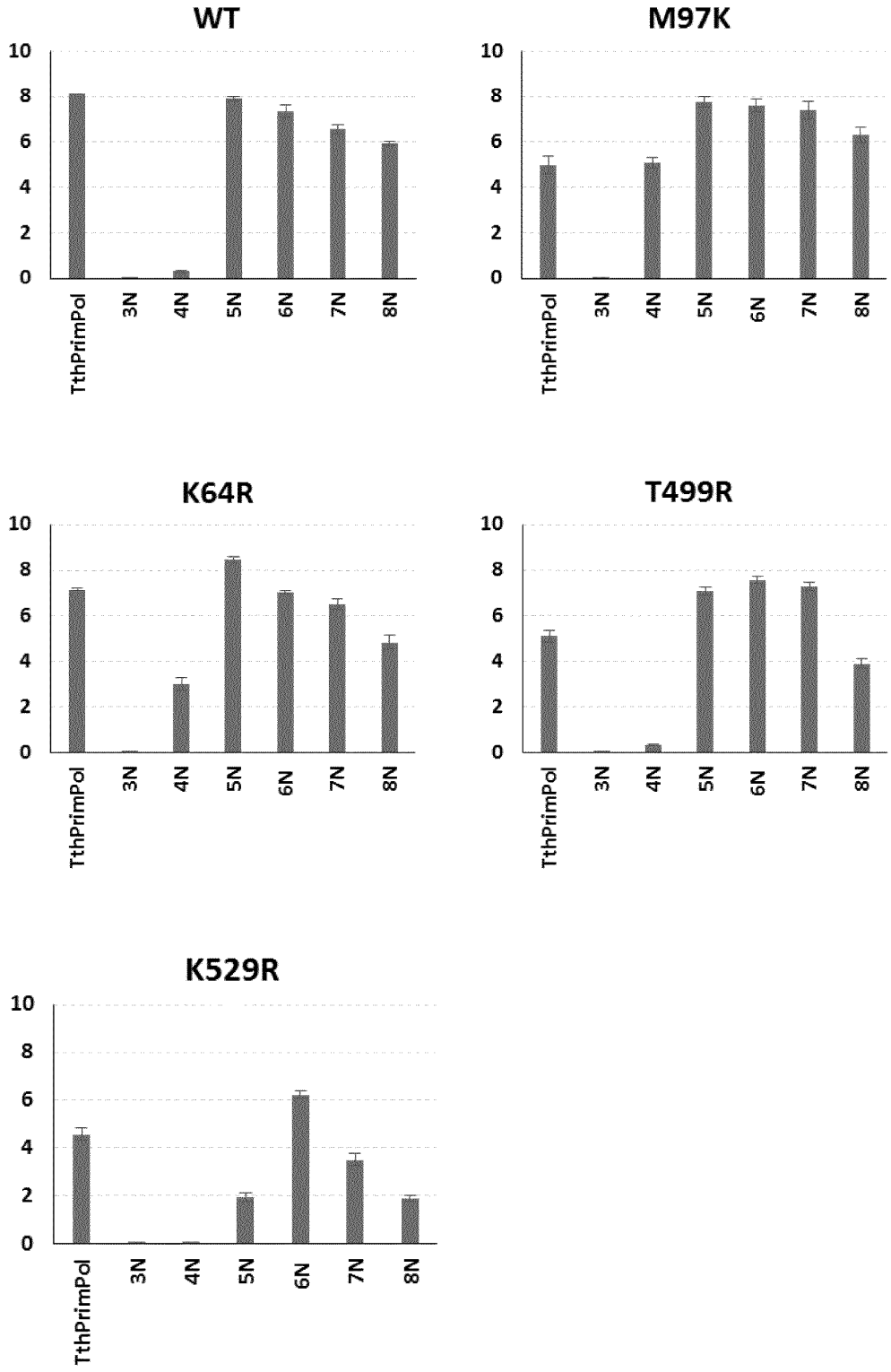


Figure 3 continued

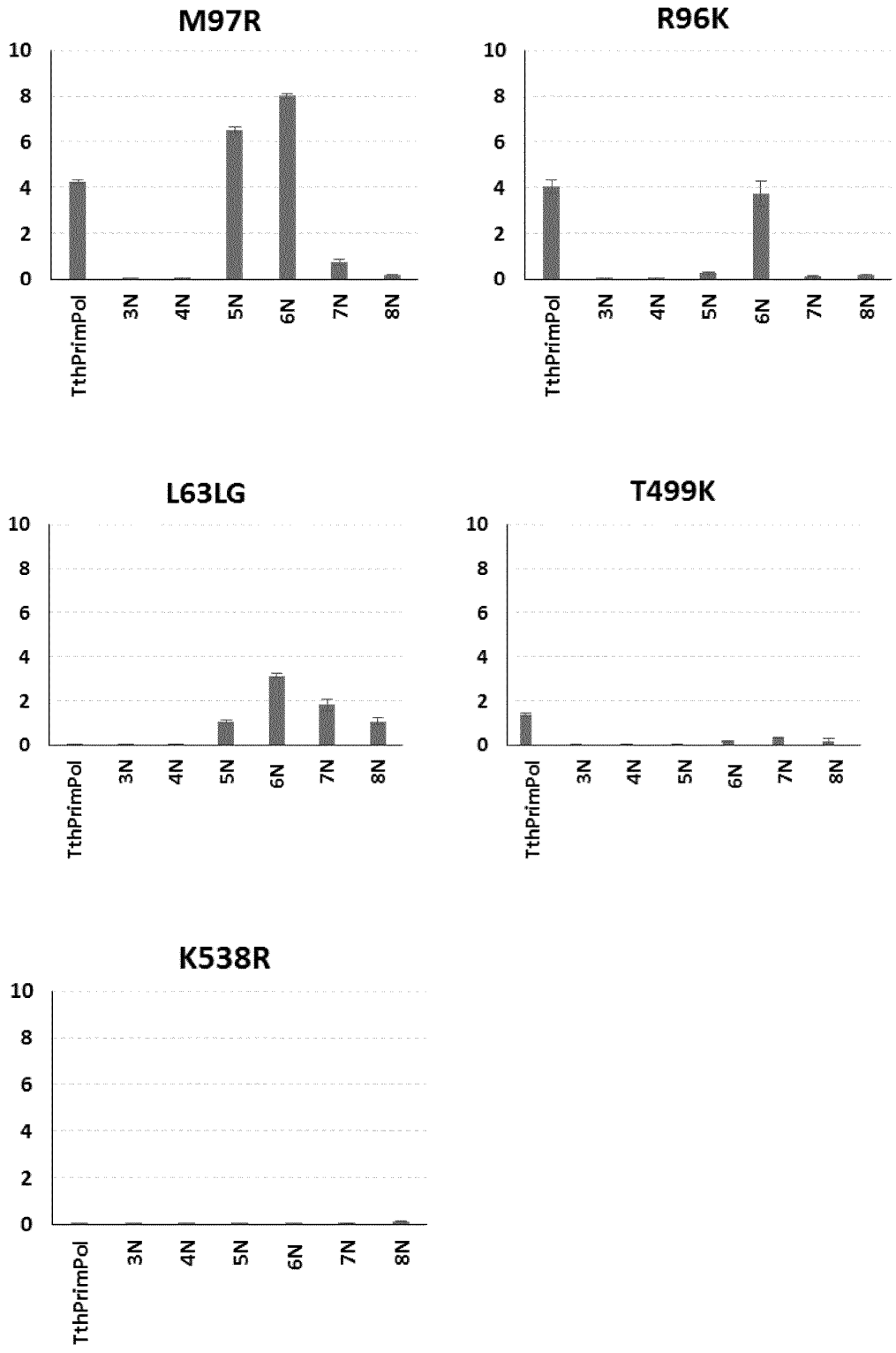


Figure 3 continued

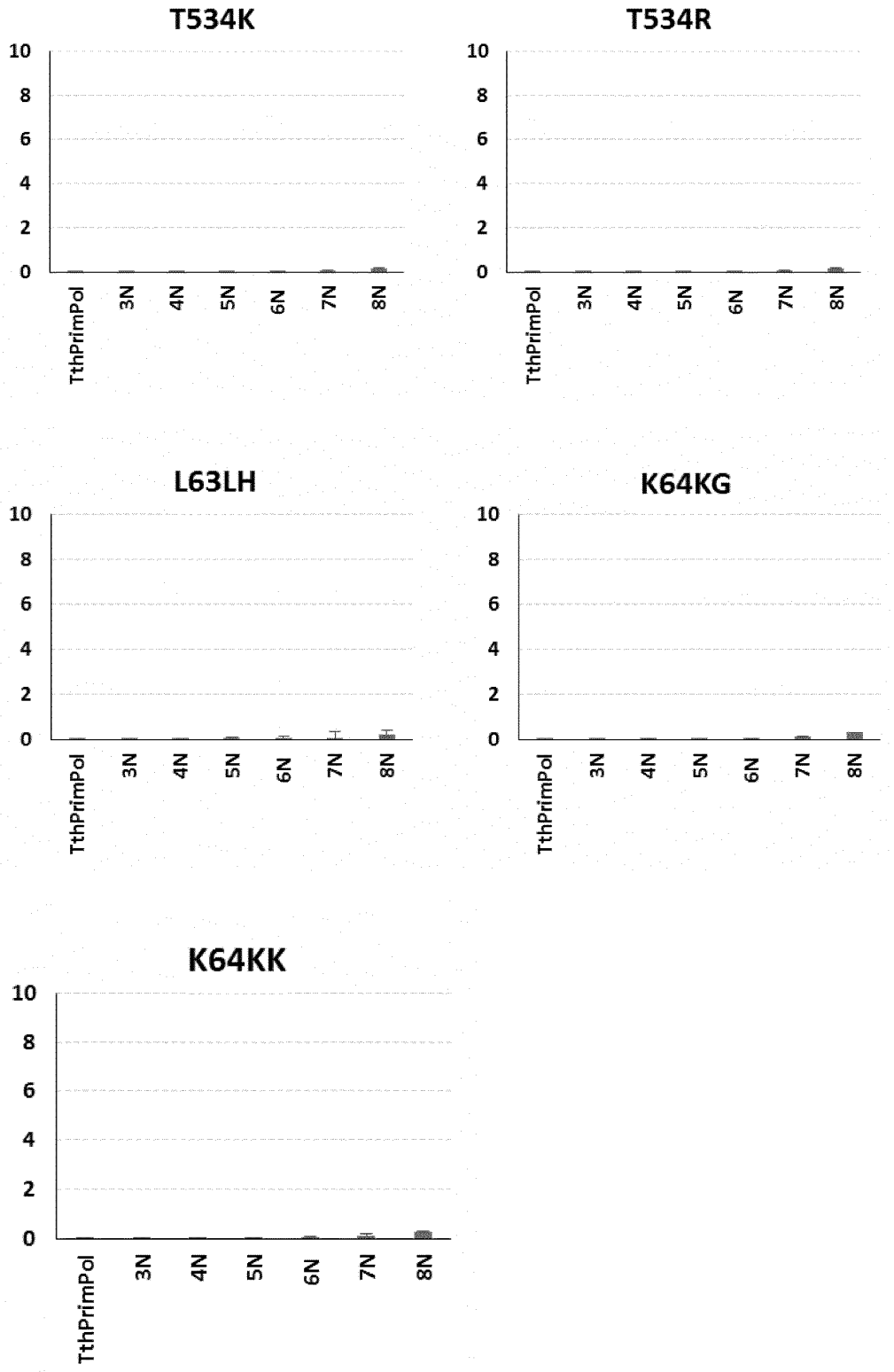


Figure 4

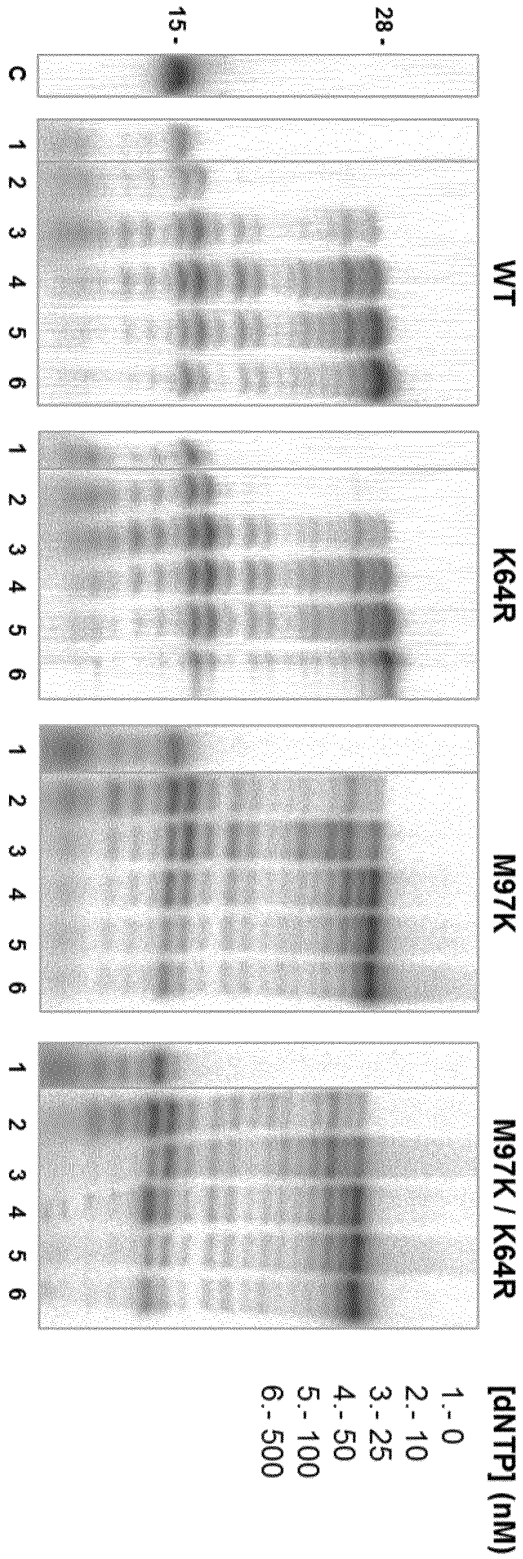

15 -
28 -
C
1 2 3 4 5 6
WT
K64R
M97K
M97K / K64R
[dNTP] (nM)
1.- 0
2.- 10
3.- 25
4.- 50
5.- 100
6.- 500

Figure 5

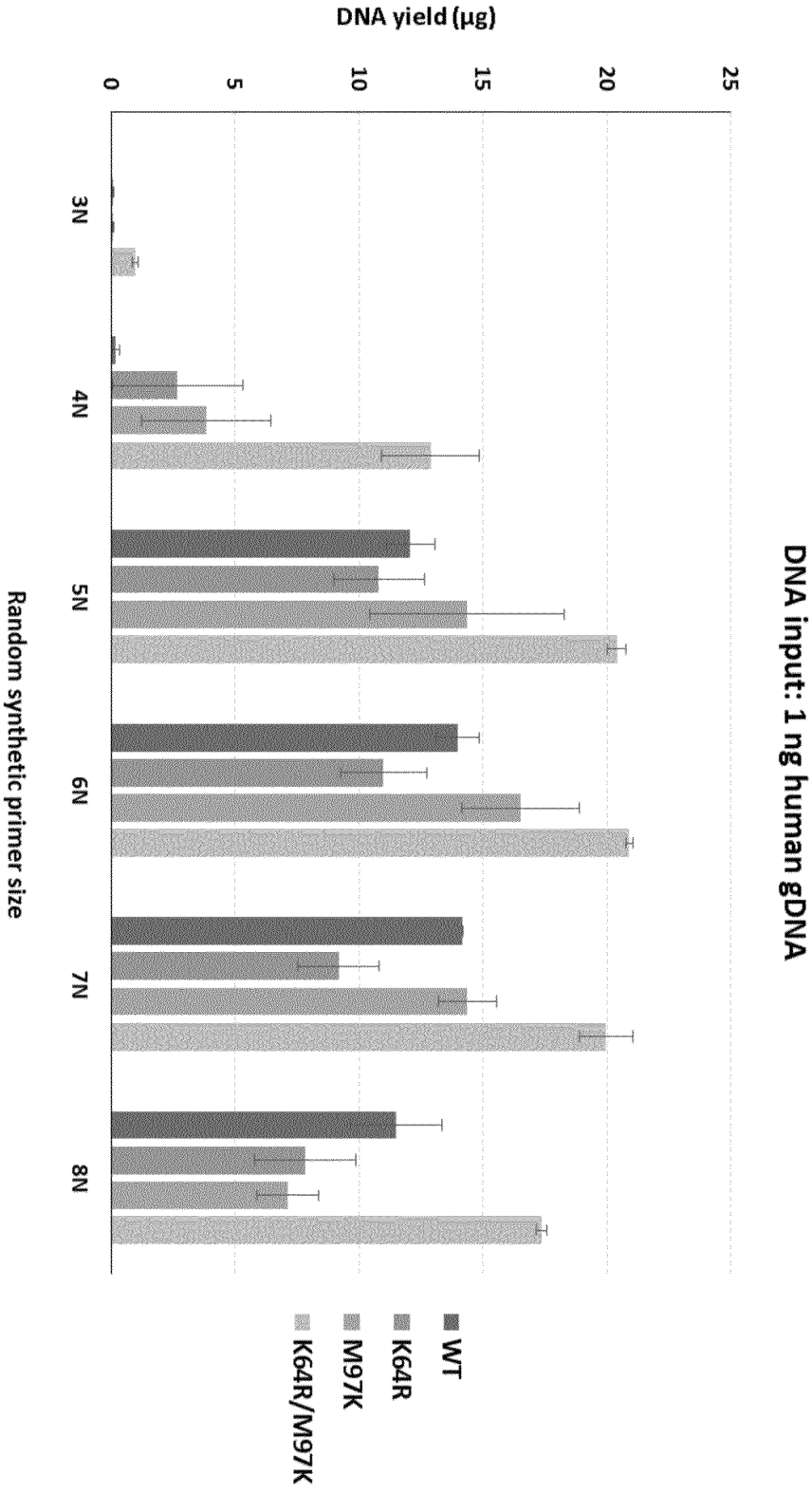

DNA yield (µg)
0
5
10
15
20
25
3N
4N
5N
6N
7N
8N
Random synthetic primer size
DNA input: 1 ng human gDNA
WT
K64R
M97K
K64R/M97K

Figure 6

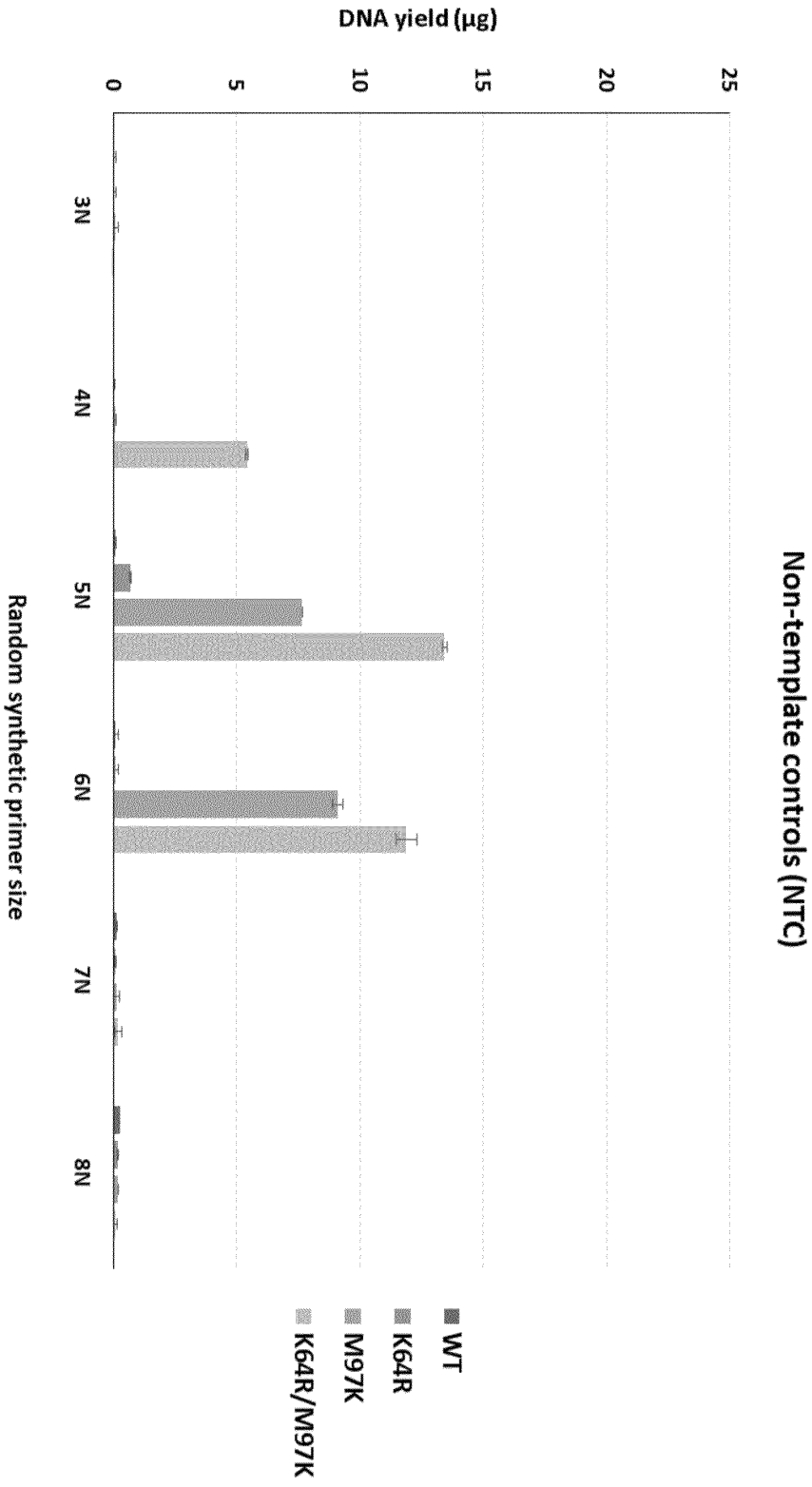

DNA yield (µg)
0
5
10
15
20
25
3N
4N
5N
6N
7N
8N
Random synthetic primer size
Non-template controls (NTC)
WT
K64R
M97K
K64R/M97K

Figure 7

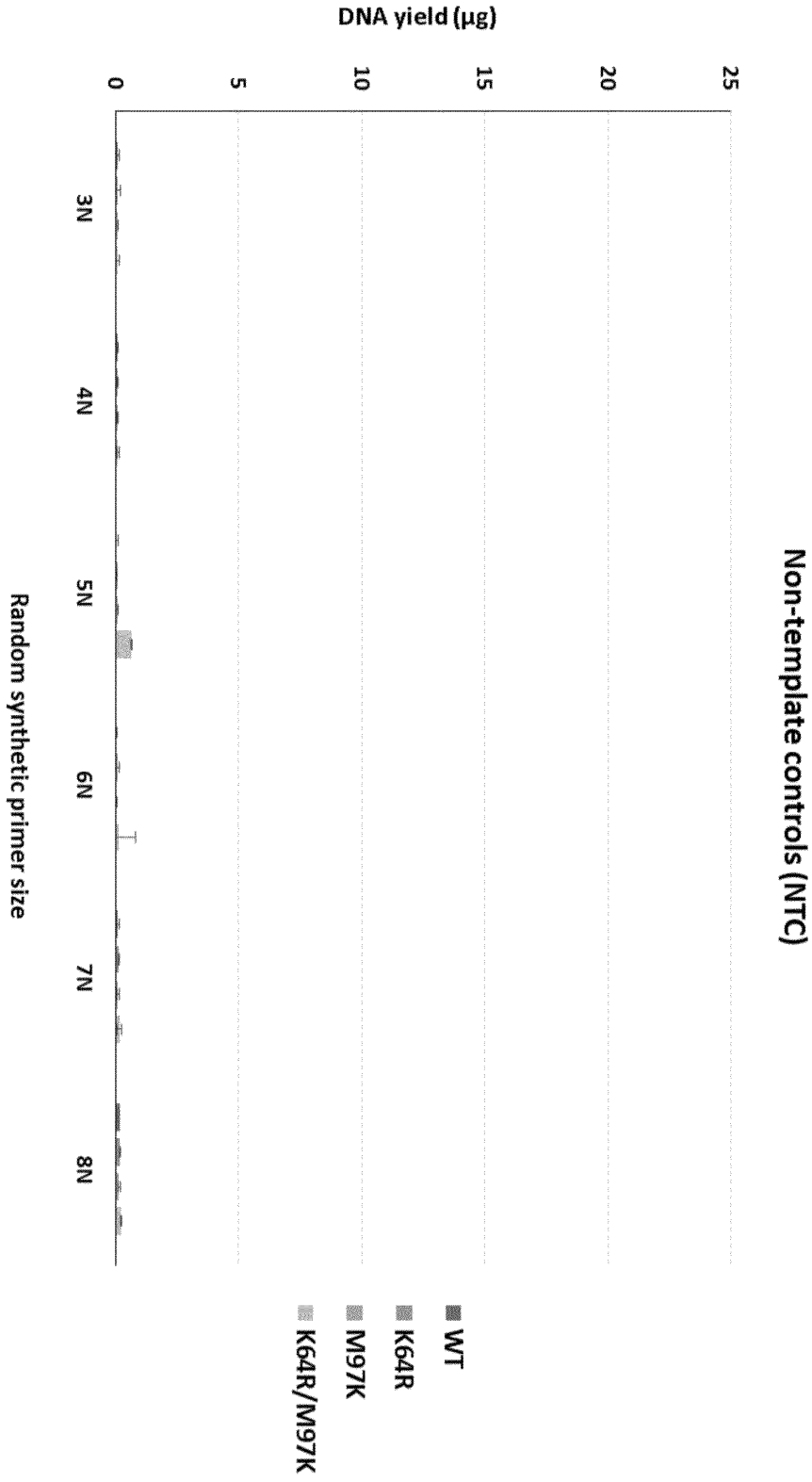

DNA yield (µg)
0
5
10
15
20
25
3N
4N
5N
6N
7N
8N
Random synthetic primer size
Non-template controls (NTC)
WT
K64R
M97K
K64R/M97K

Figure 8

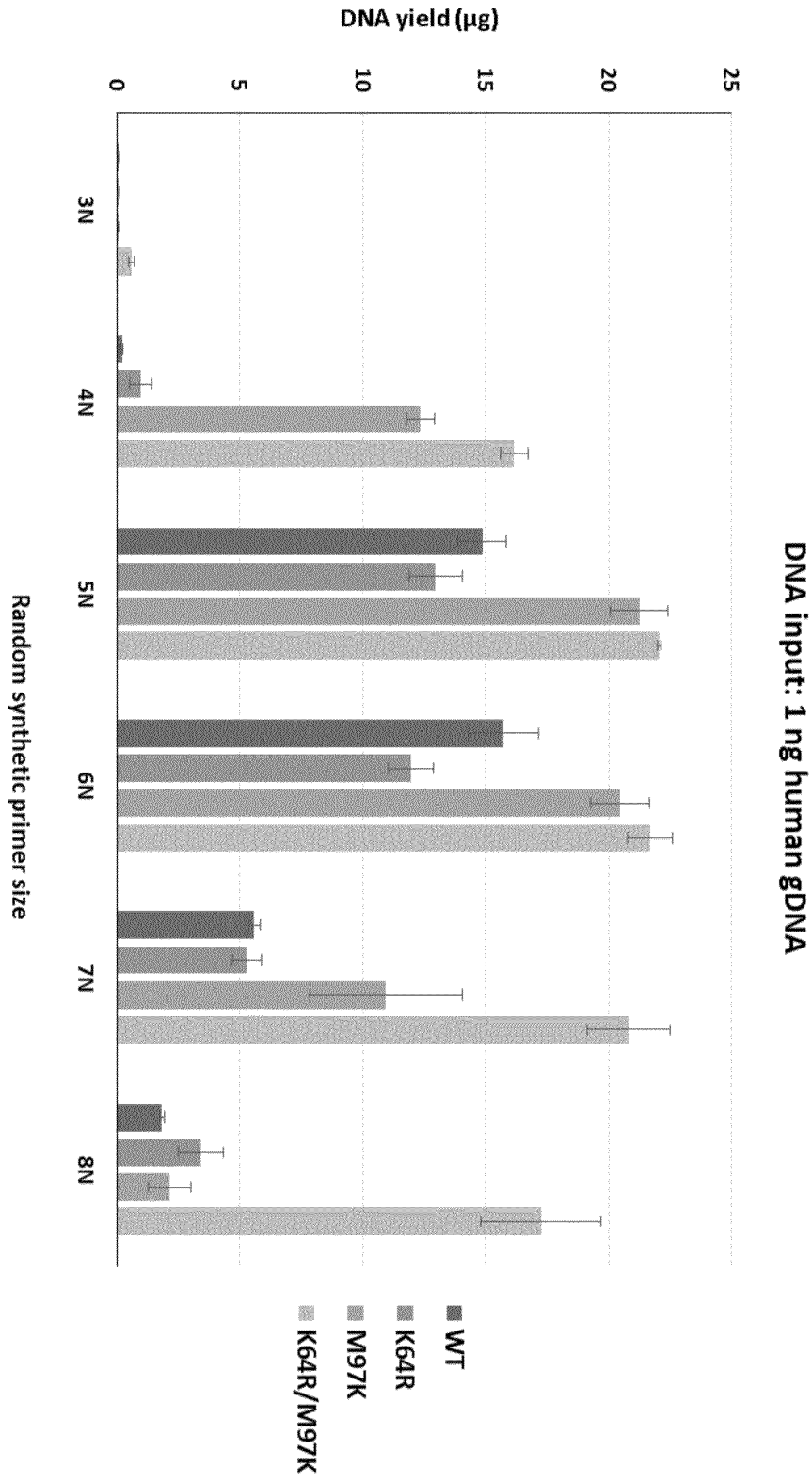

DNA yield (µg)
0
5
10
15
20
25
3N
4N
5N
6N
7N
8N
Random synthetic primer size
DNA input: 1 ng human gDNA
WT
K64R
M97K
K64R/M97K

Figure 9

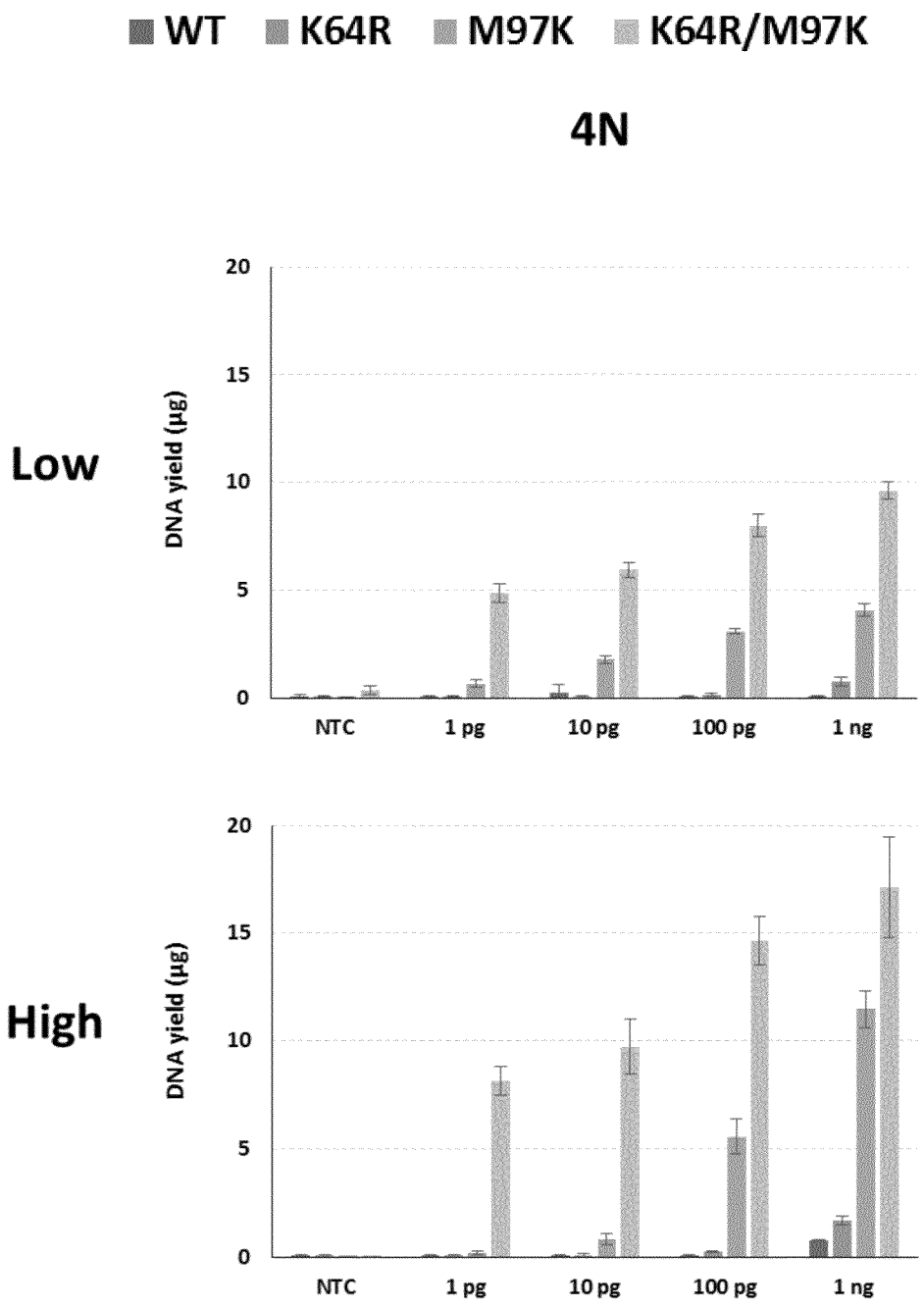

WT
K64R
M97K
K64R/M97K
4N
Low
High
DNA yield (µg)
20
15
10
5
0
NTC
1 pg
10 pg
100 pg
1 ng

Figure 9 continued

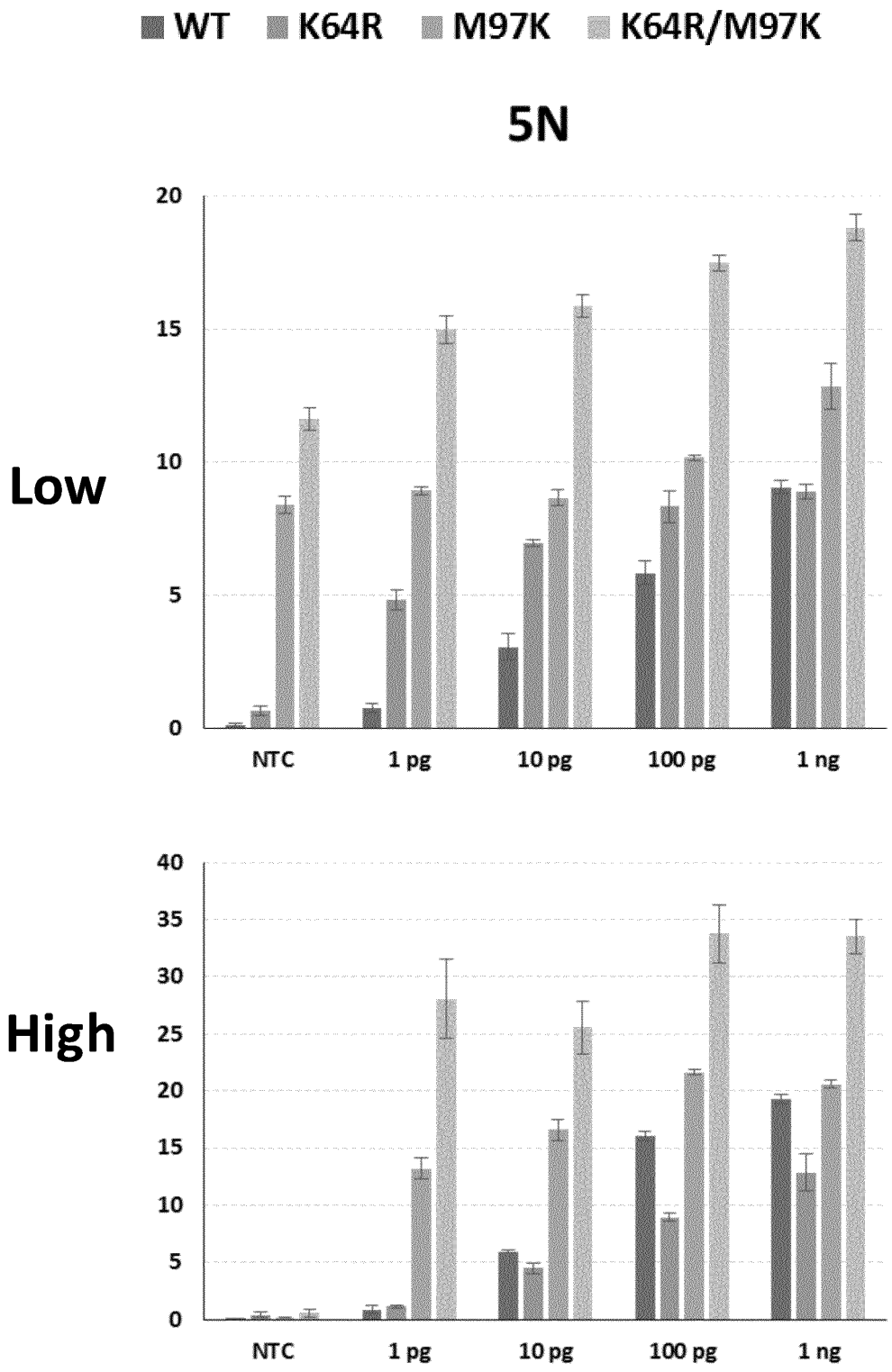


Figure 9 continued

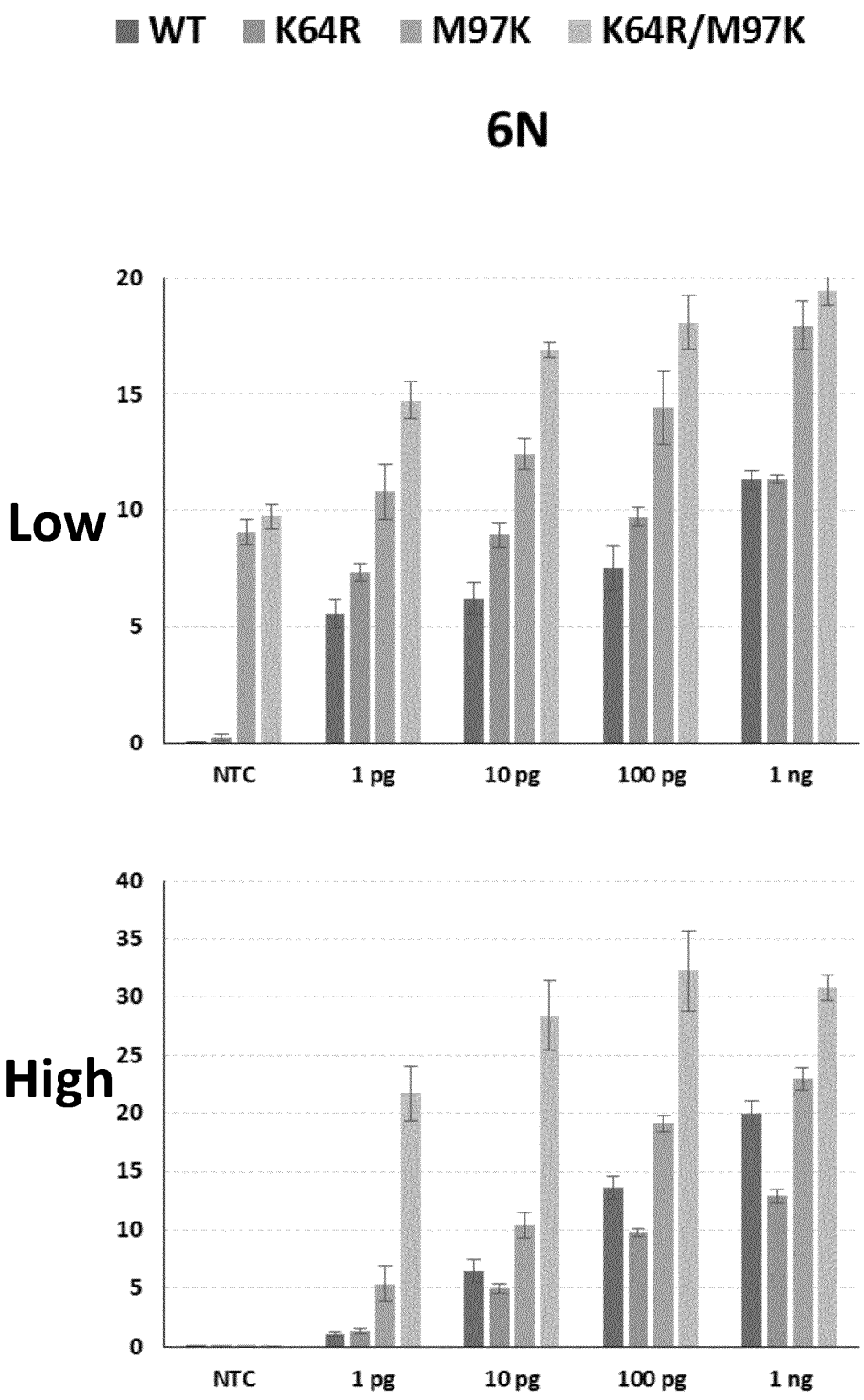


Figure 10

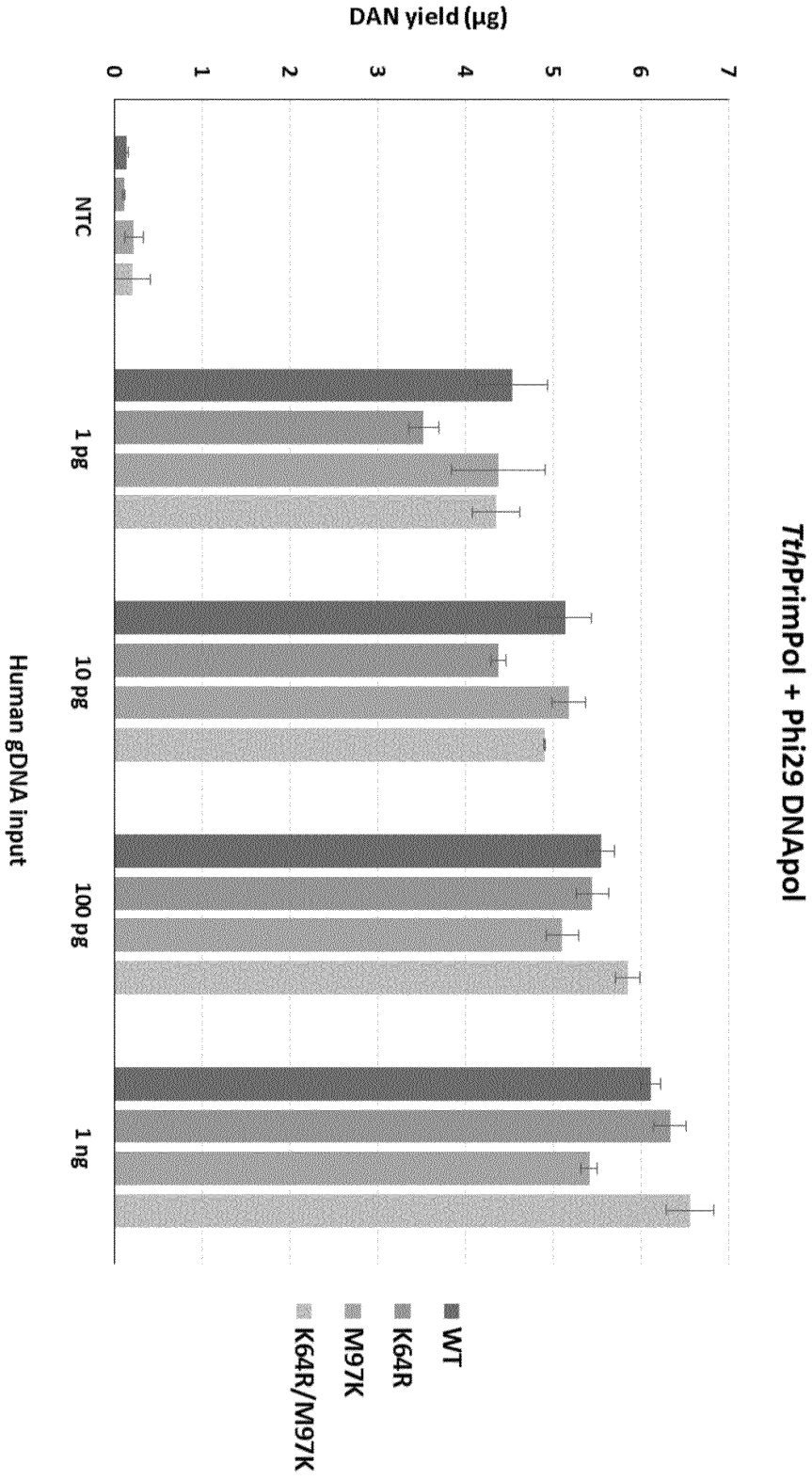

DAN yield (µg)
0
1
2
3
4
5
6
7
NTC
1 pg
10 pg
100 pg
1 ng
Human gDNA input
TthPrimPol + Phi29 DNApol
WT
K64R
M97K
K64R/M97K

Figure 11

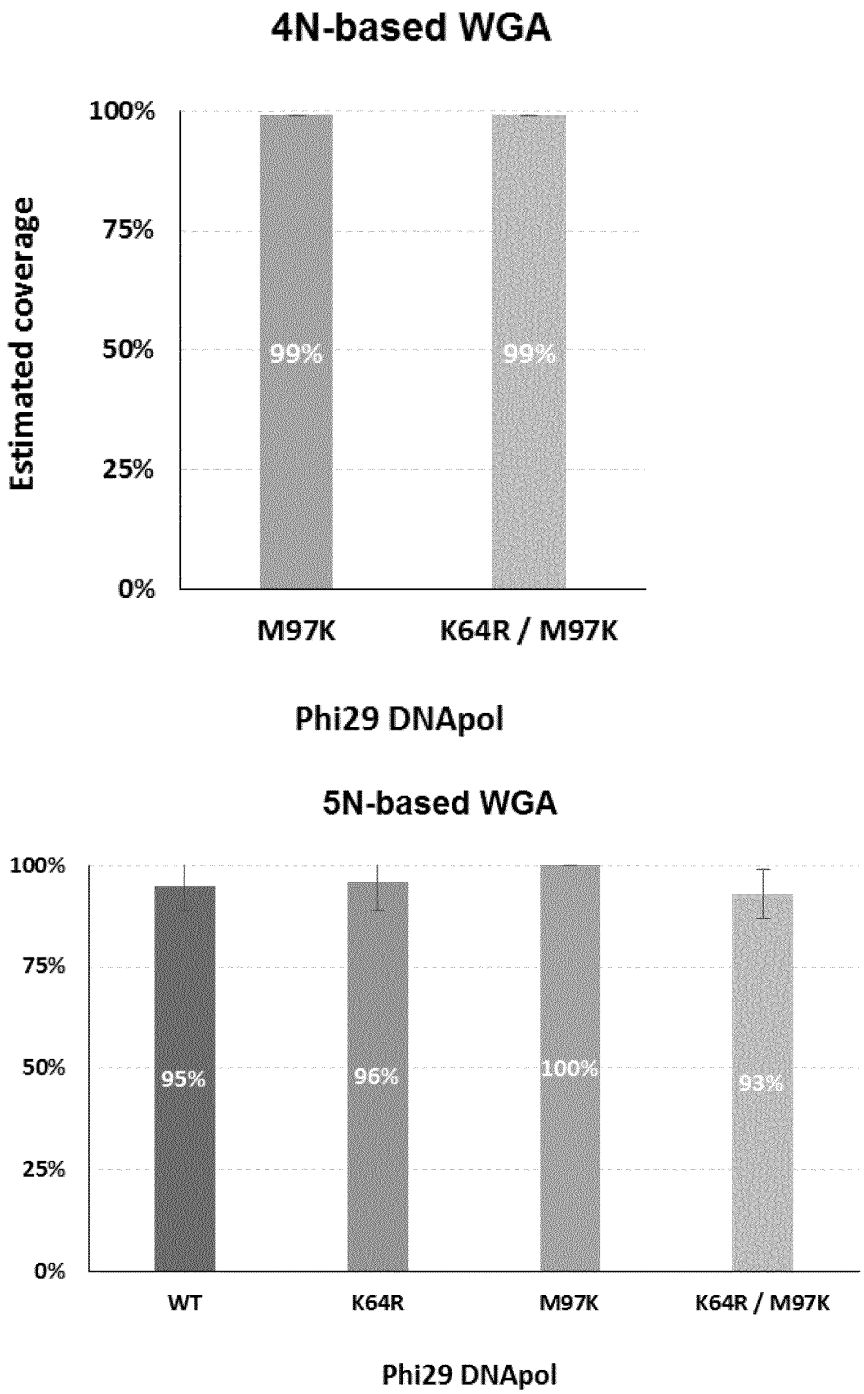

4N-based WGA
Estimated coverage
100%
75%
50%
25%
0%
99%
99%
M97K
K64R / M97K
Phi29 DNApol
5N-based WGA
100%
75%
50%
25%
0%
95%
96%
100%
93%
WT
K64R
M97K
K64R / M97K
Phi29 DNApol

Figure 11 continued

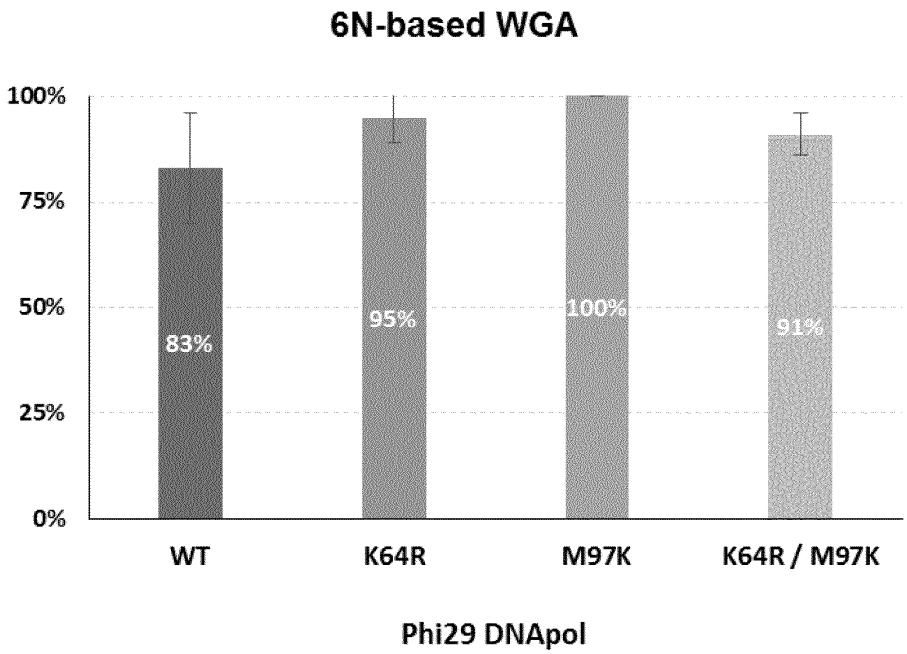
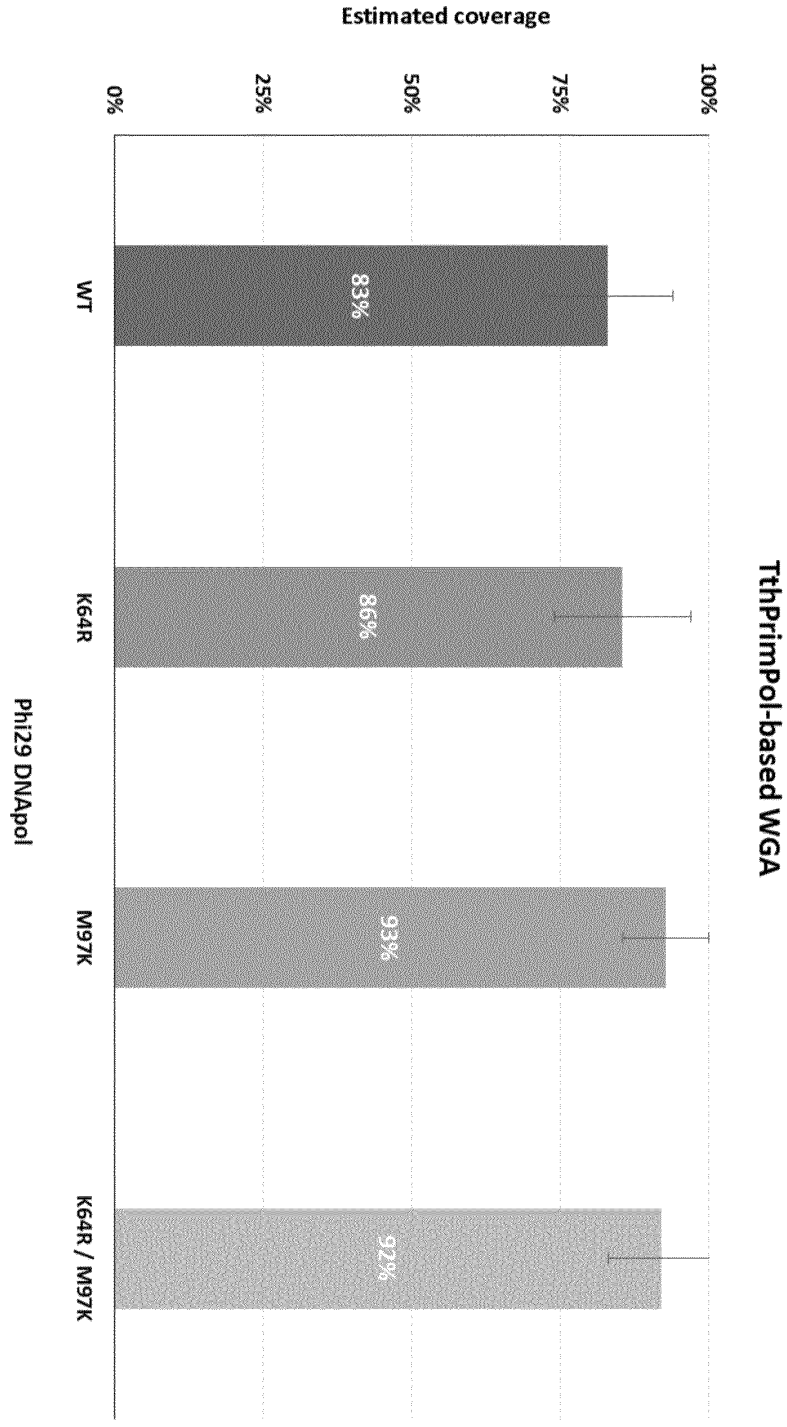


Figure 12


Estimated coverage
0%
25%
50%
75%
100%
WT
K64R
M97K
K64R / M97K
83%
86%
93%
92%
Phi29 DNApol
TthPrimPol-based WGA