FIG. 1

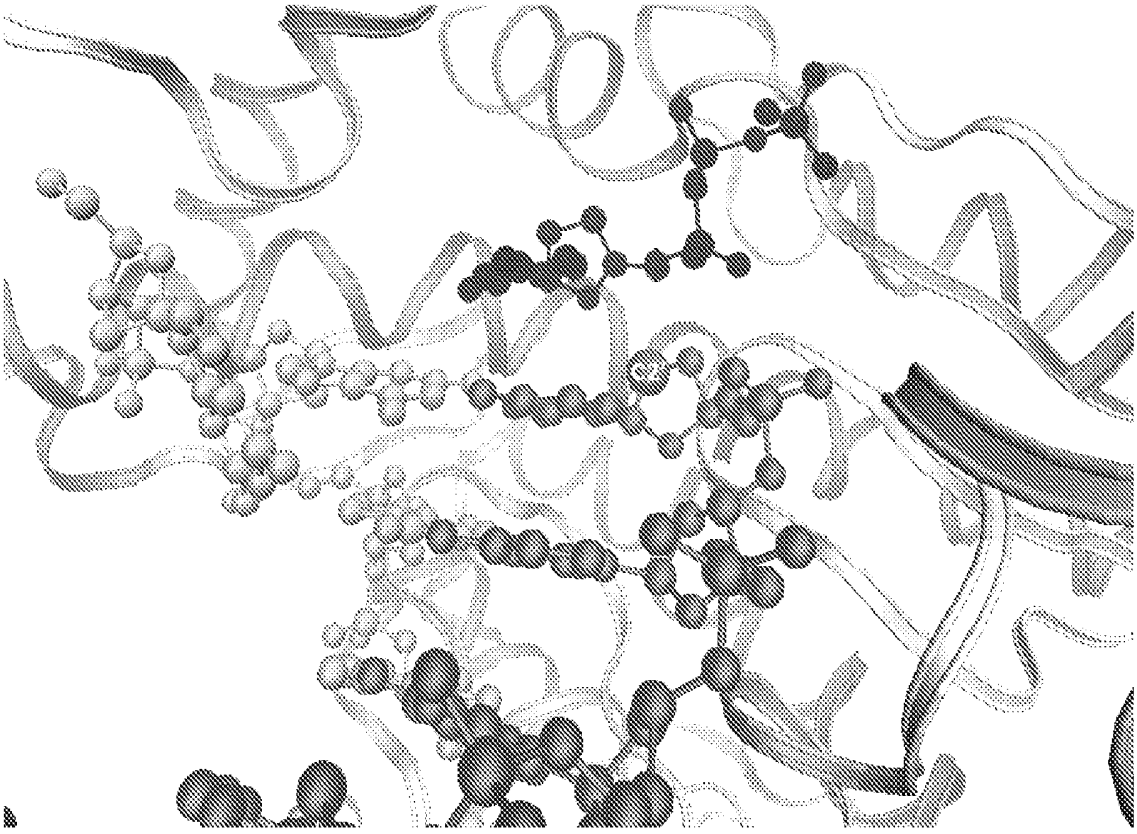
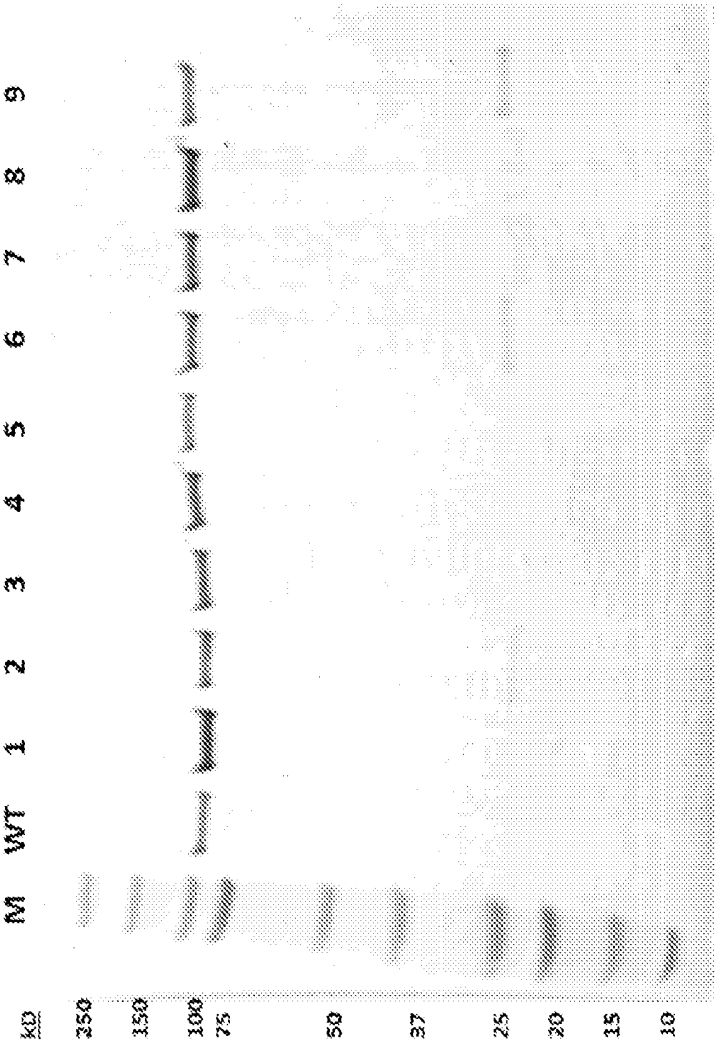
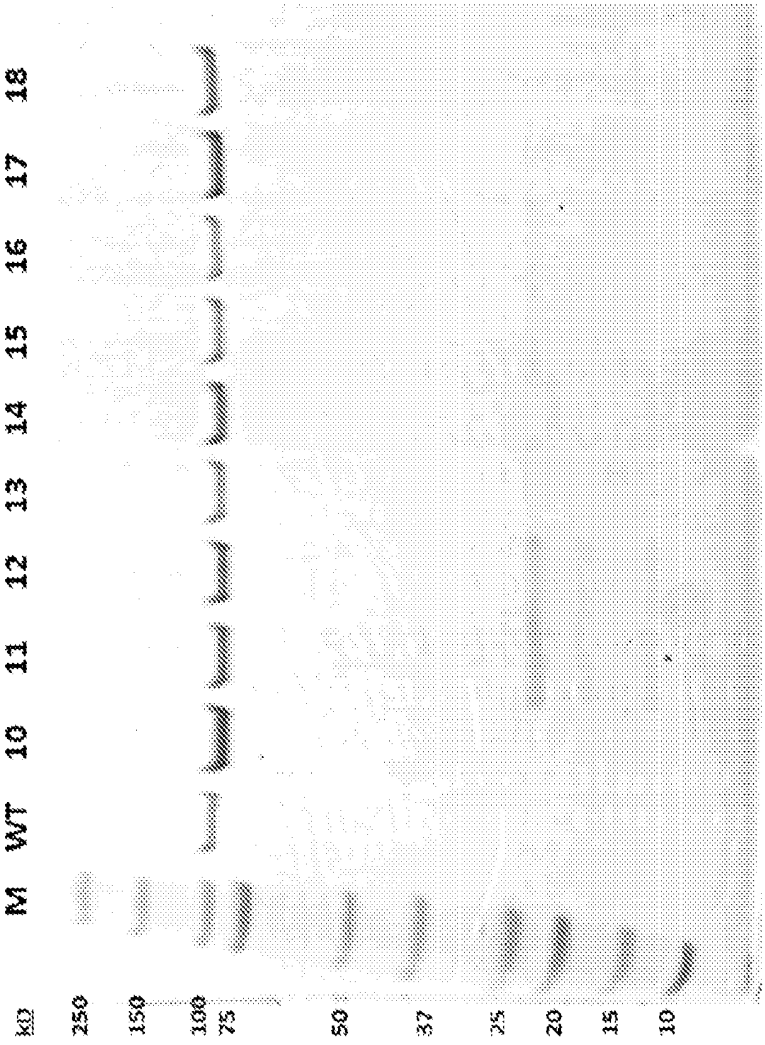


FIG. 2A



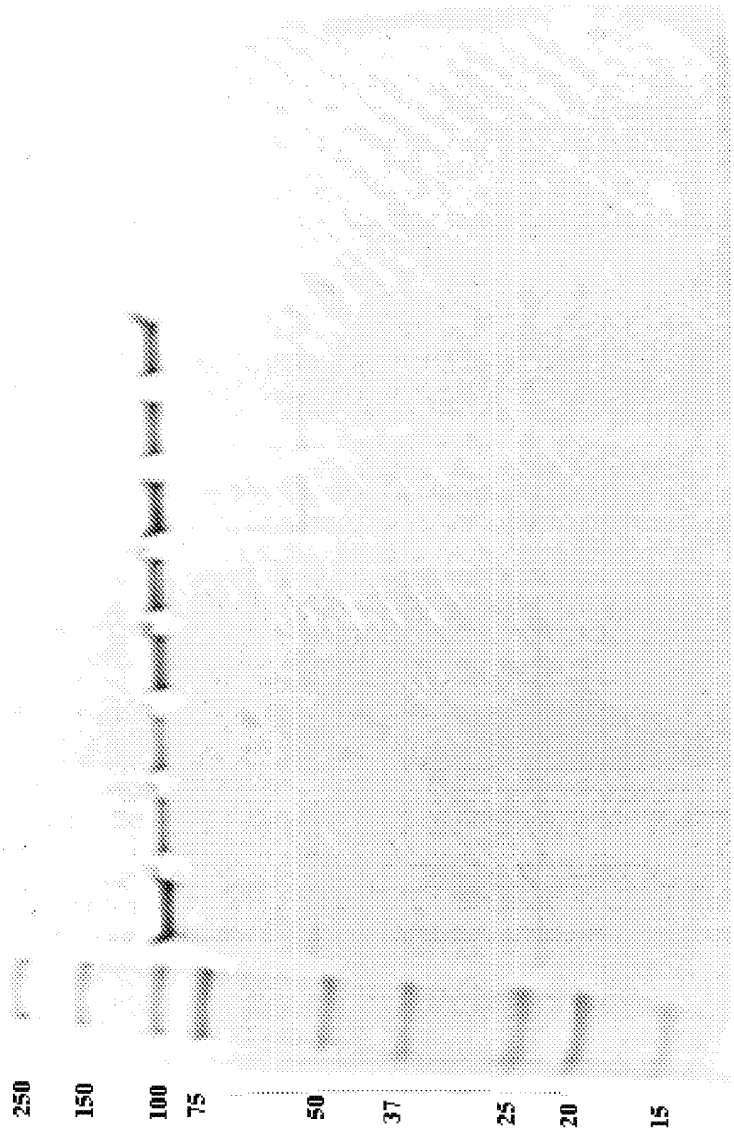
Lane #	Mut ID#	Sample / Mutation
M		Marker
WT		WT OptiTaq
1	10	A661E, I665W, F667L
2	1	V783I
3	2	V783F
4	3	H784Q
5	4	R873H
6	5	Q882K
7	6	F667W
8	7	H639W
9	9	E615L, L616E

FIG. 2B



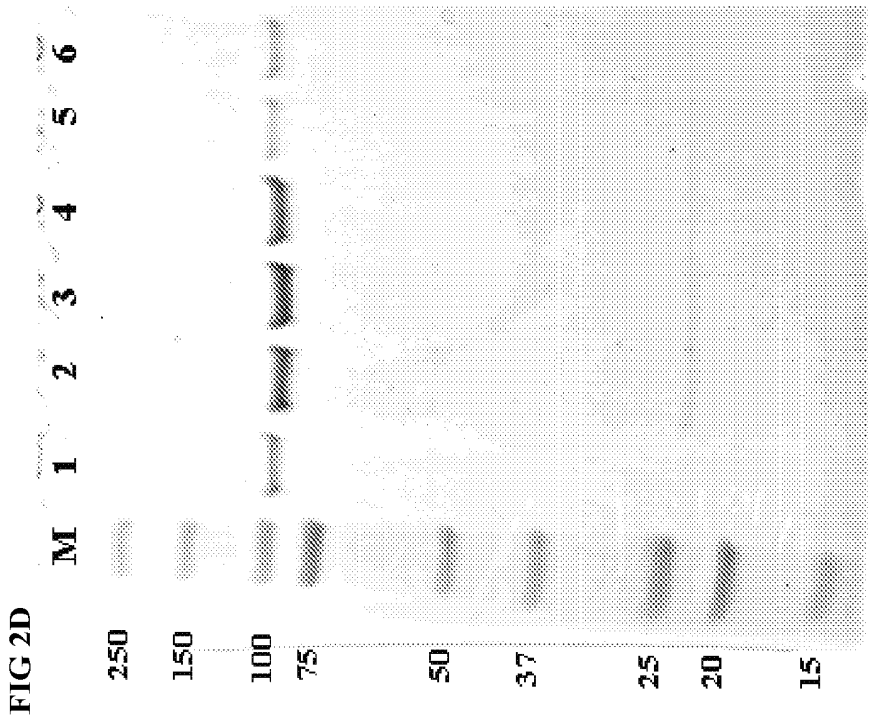
Lane #	Mut ID#	Sample / Mutation
M		Marker
WT		WT OptiTaq
10	14	Q782P, V783L, H784Q
11	12	Q782I, V783L, H784L
12	11	Q782I, H784F
13	13	Q782S, V783F, H784N
14	16	R659H
15	15	Q754A
16	8	L616M
17	17	V783E, H784Q
18	18	V783L, H784Q

FIG. 2C



Lane #	Mut ID#	Sample / Mutation
M		
1	19	H784G
2	26	H784I
3	25	H784L
4	27	H784M
5	34	H784N
6	28	H784P
7	36	H784R
8	21	H784S

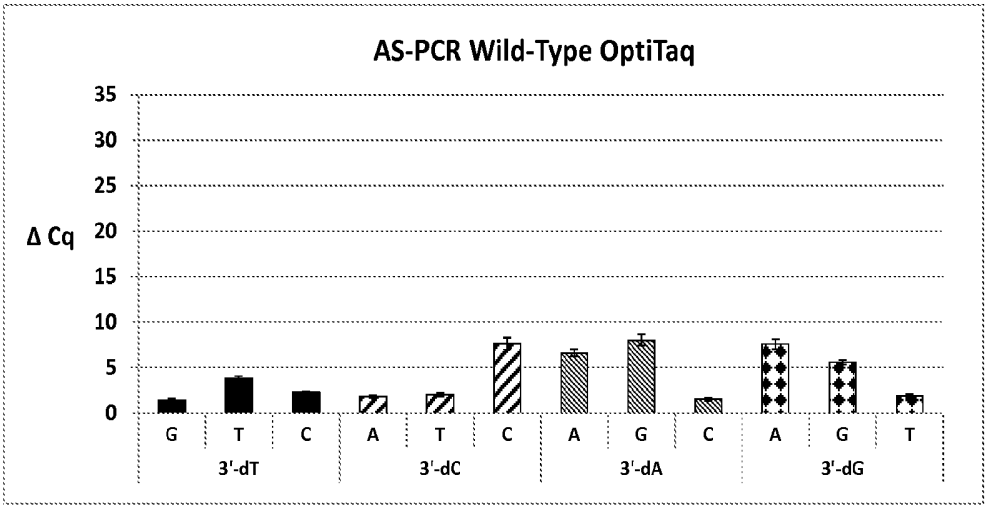
FIG 2D



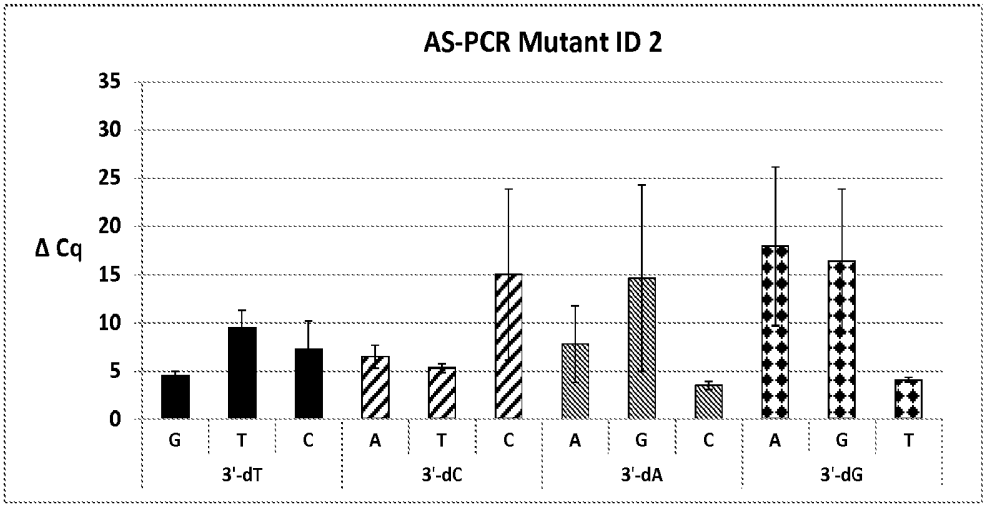
Lane #	Mut ID#	Sample / Mutation
M		
1	20	H784A
2	23	H784C
3	32	H784D
4	33	H784E
5	29	H784F
6	3	H784Q

FIG. 3A

(i)



(ii)



(iii)

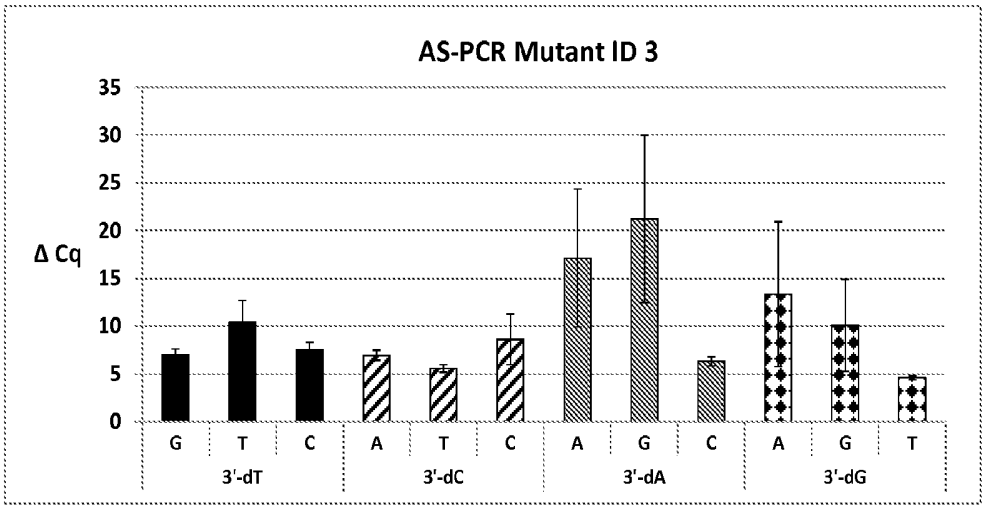
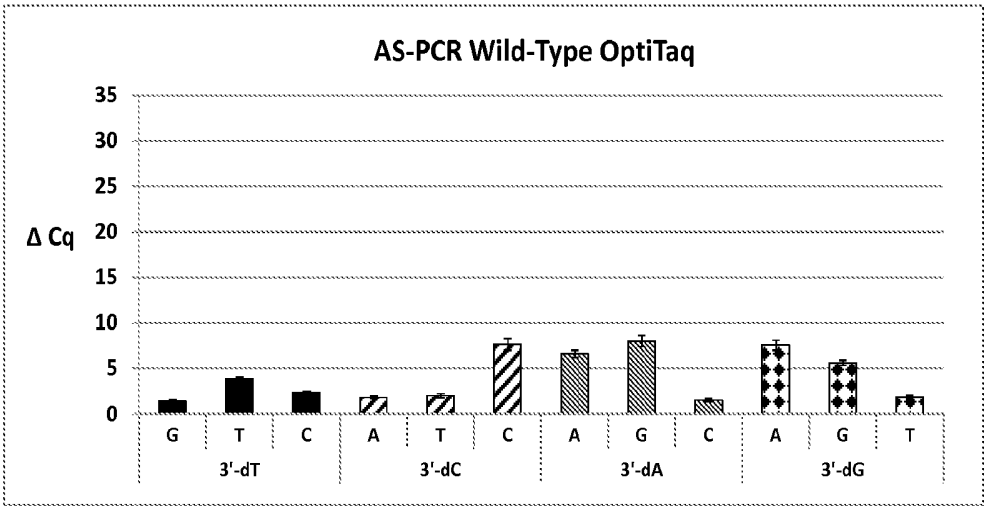
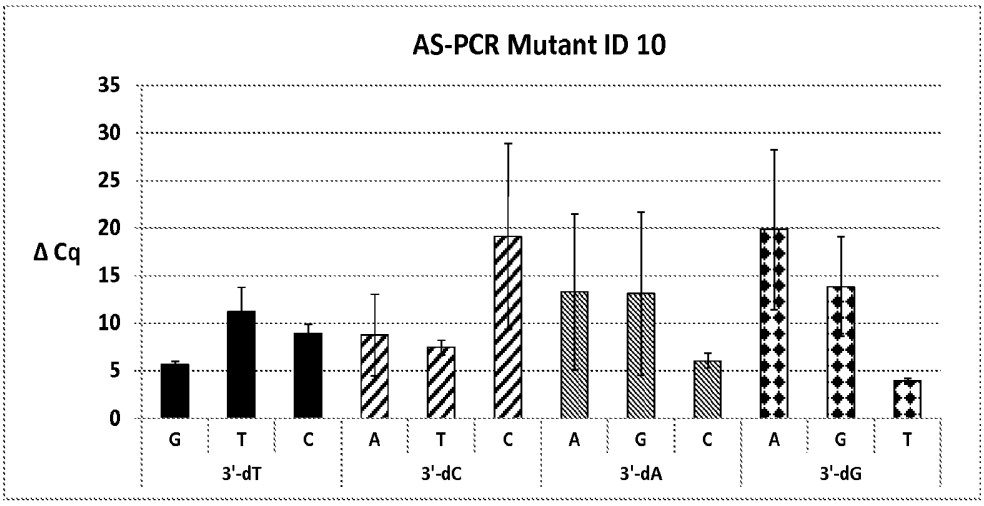


FIG. 3B

(i)



(ii)



(iii)

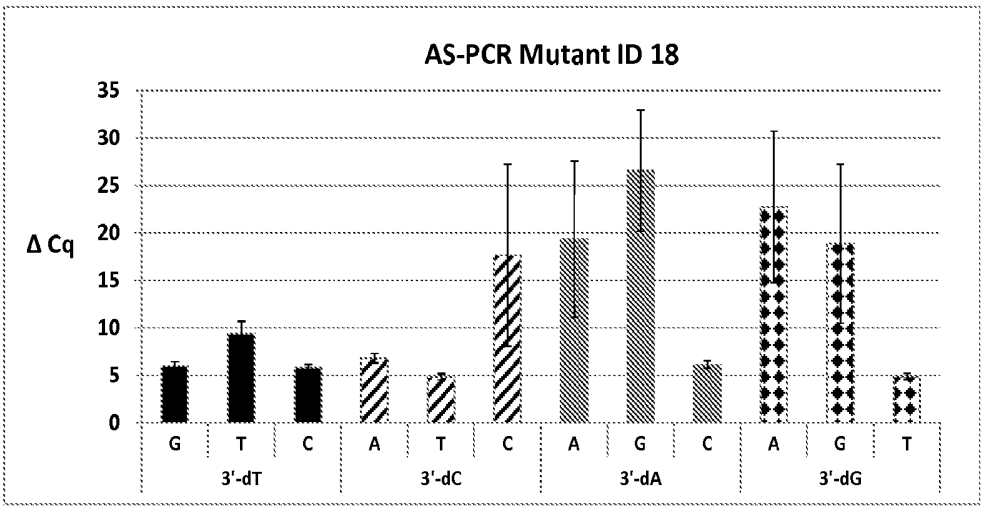
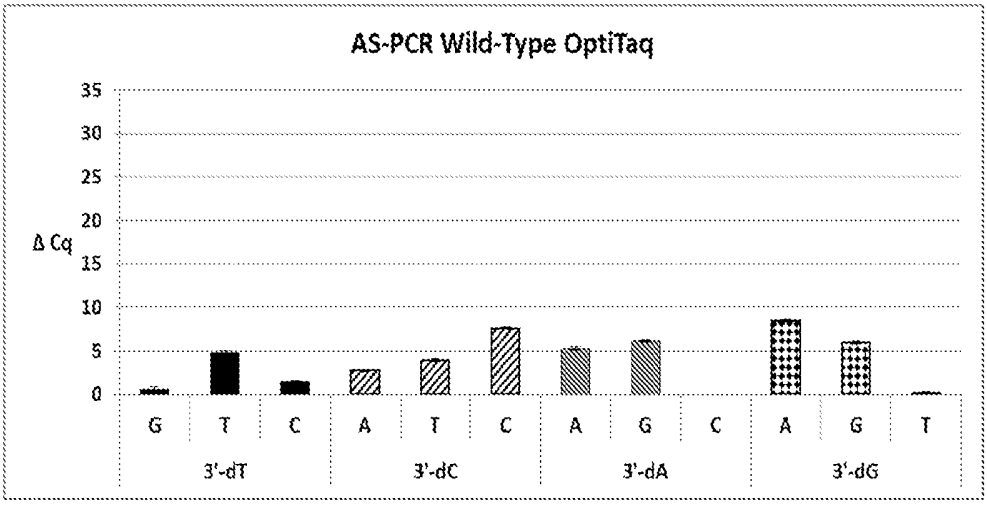
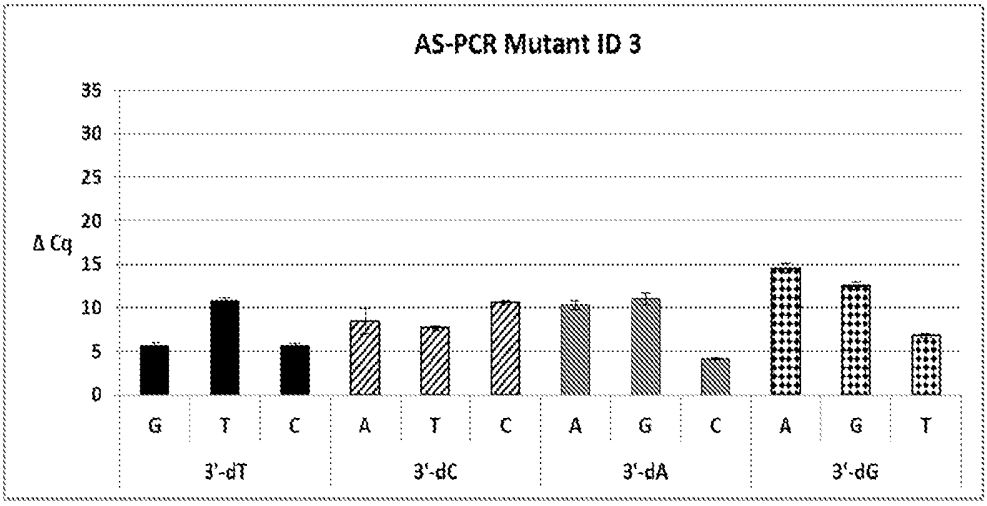


FIG. 3C.

(i)



(ii)



(iii)

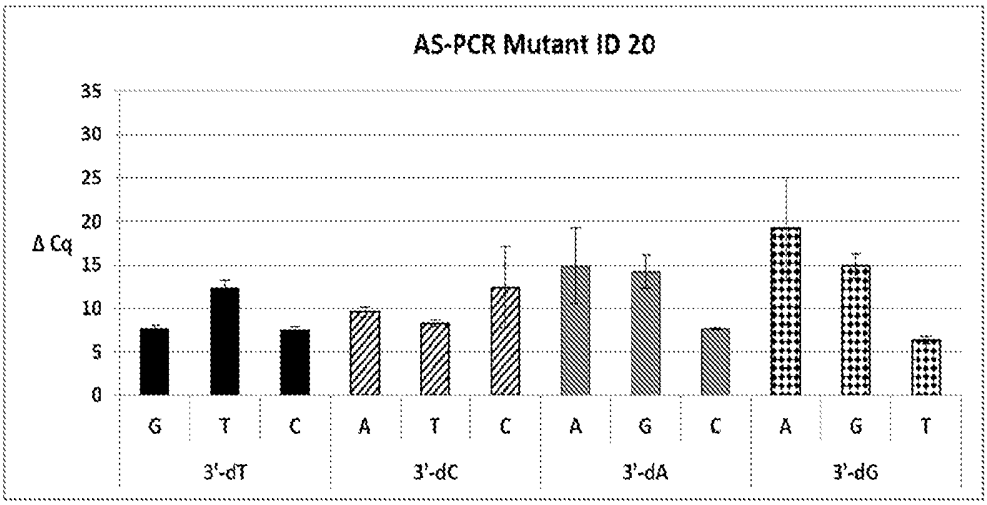
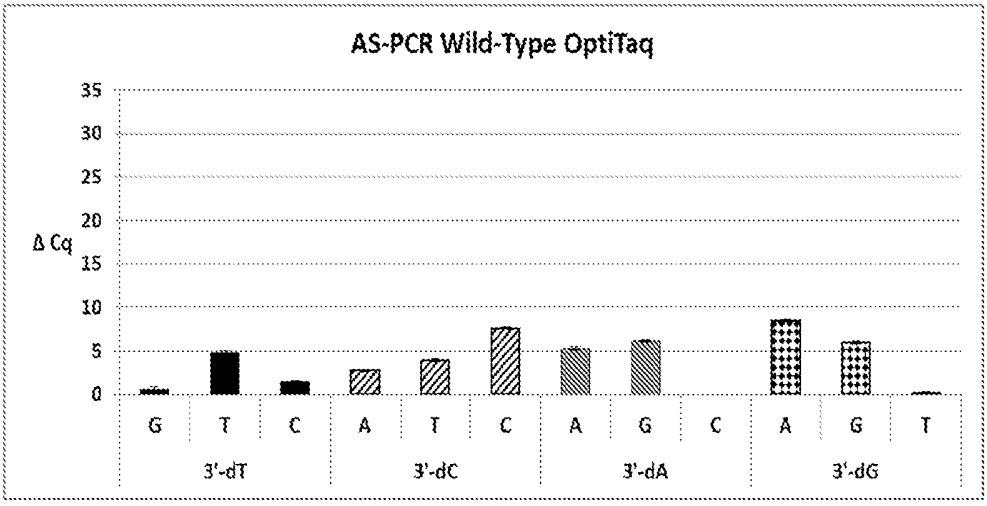
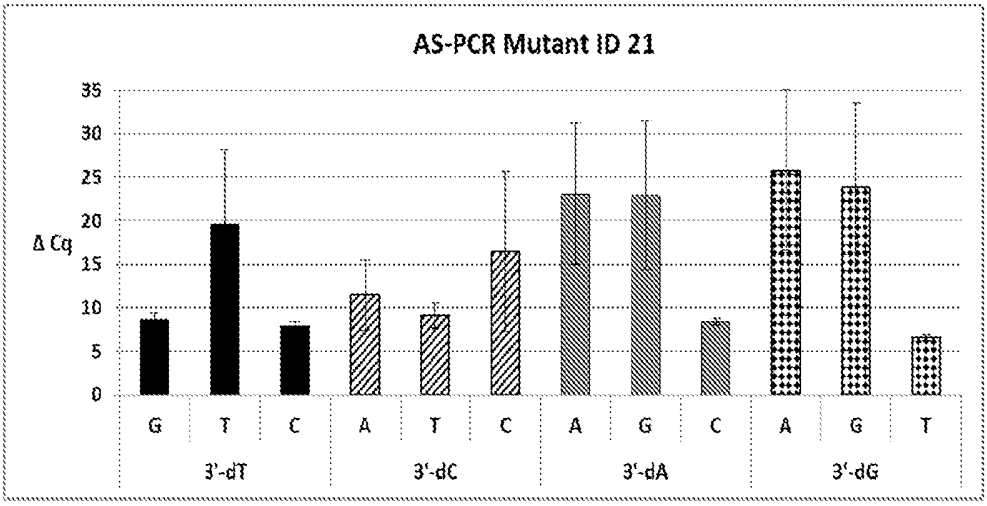


FIG. 3D.

(i)



(ii)



(iii)

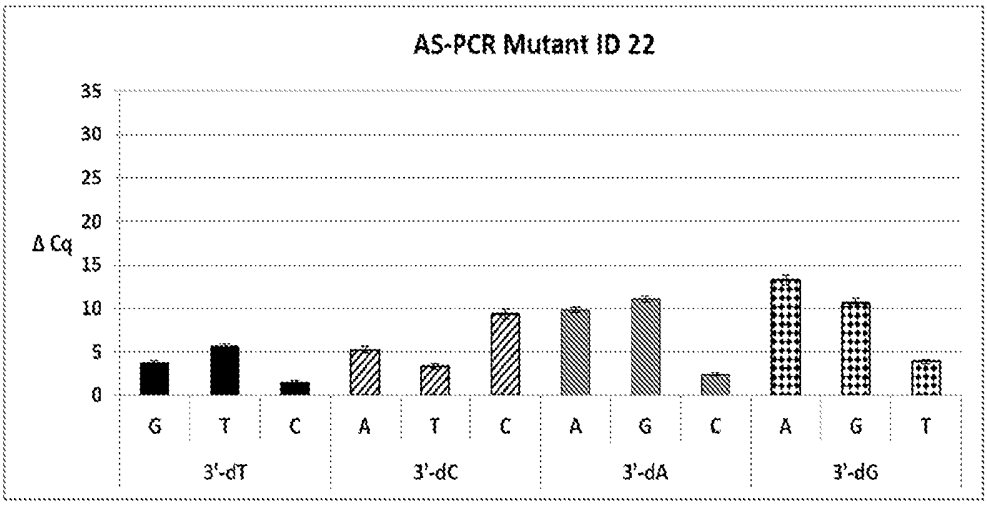
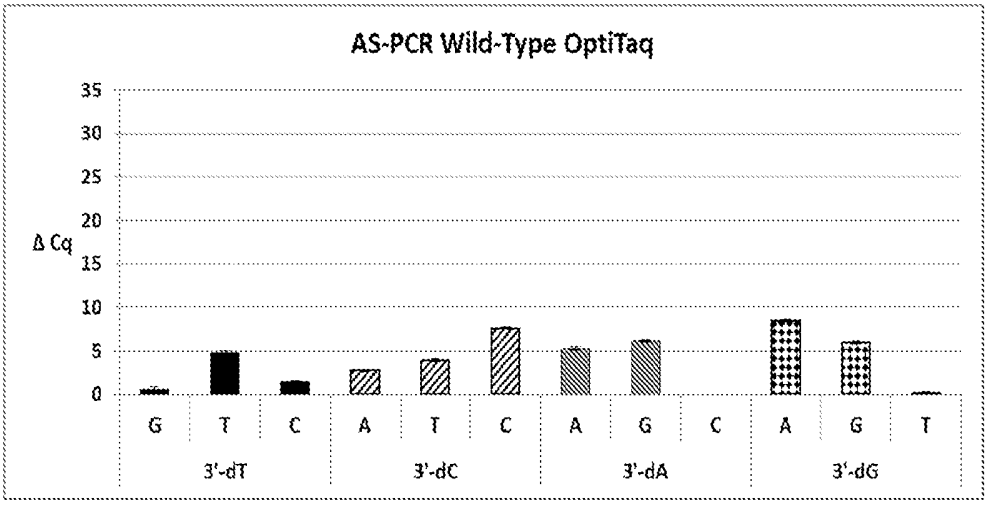
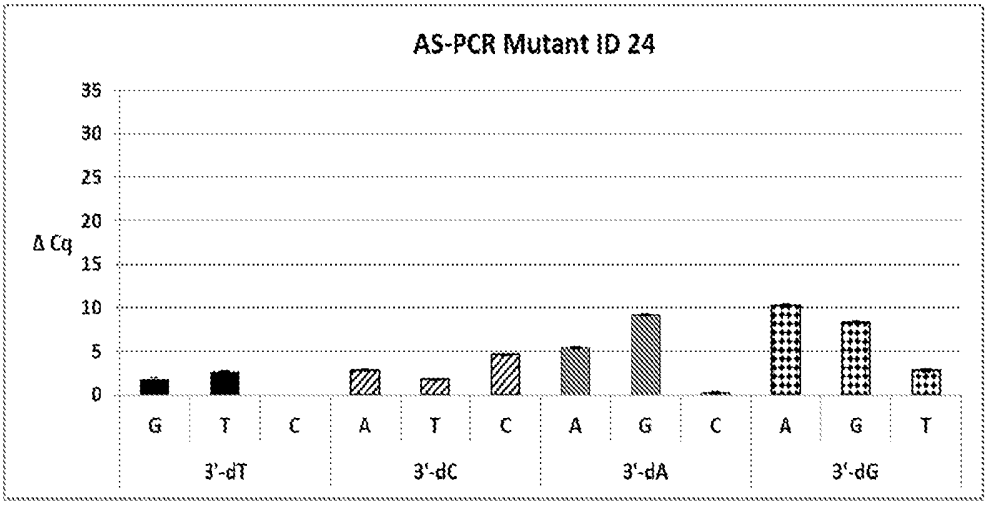


FIG. 3E.

(i)



(ii)



(iii)

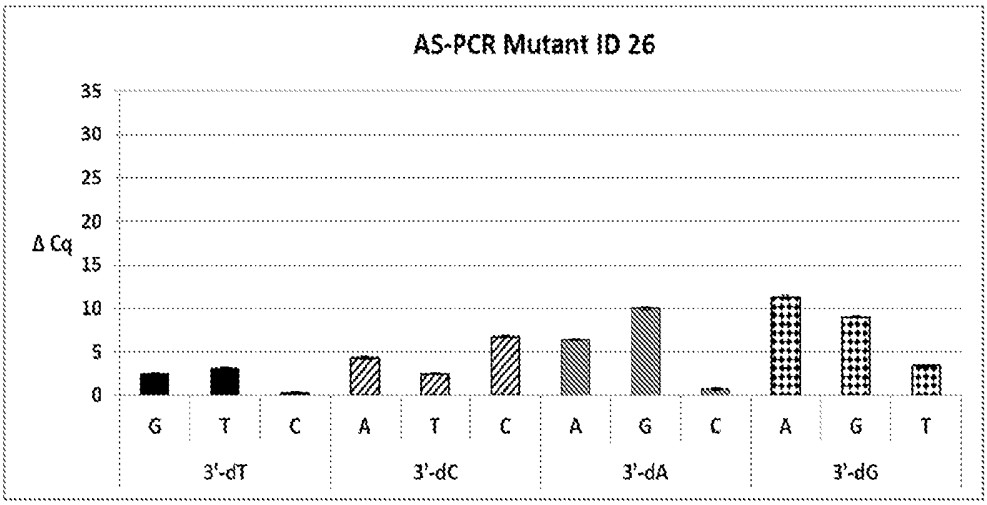
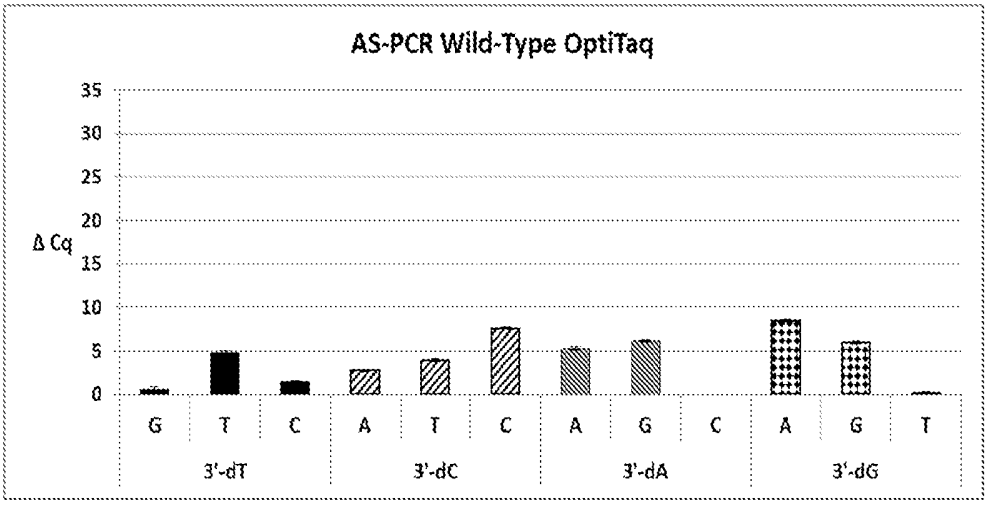
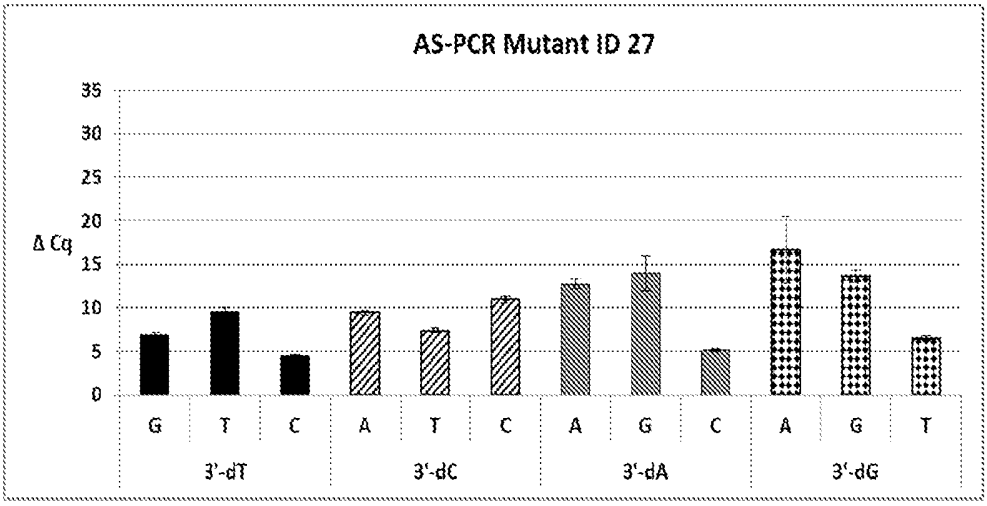


FIG. 3F.

(i)



(ii)



(iii)

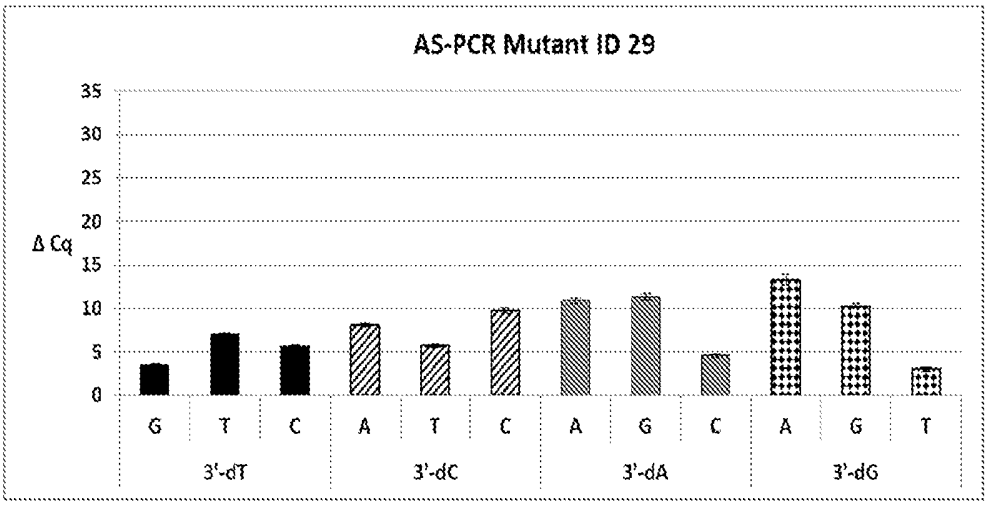
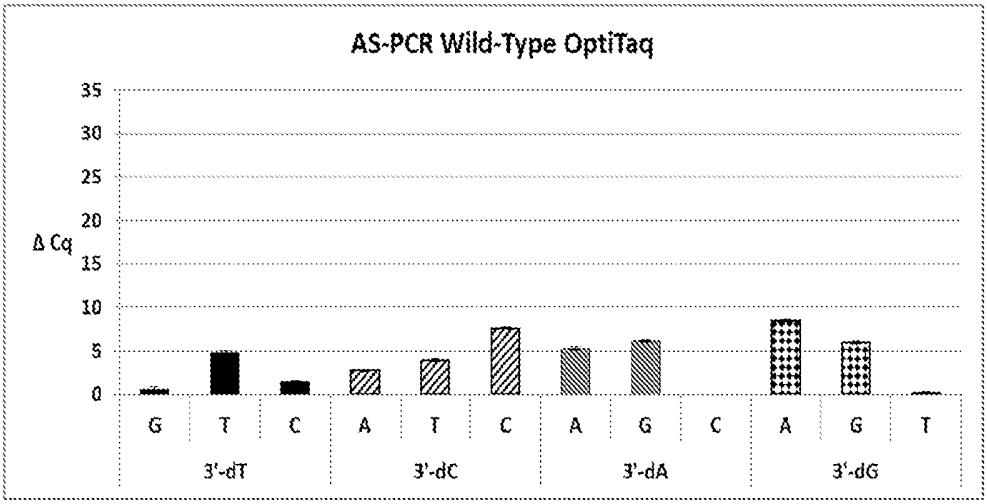


FIG. 3G.

(i)


AS-PCR Wild-Type OptiTaq
Δ Cq
35
30
25
20
15
10
5
0
G T C A T C A G C A G T
3'-dT
3'-dC
3'-dA
3'-dG

(ii)

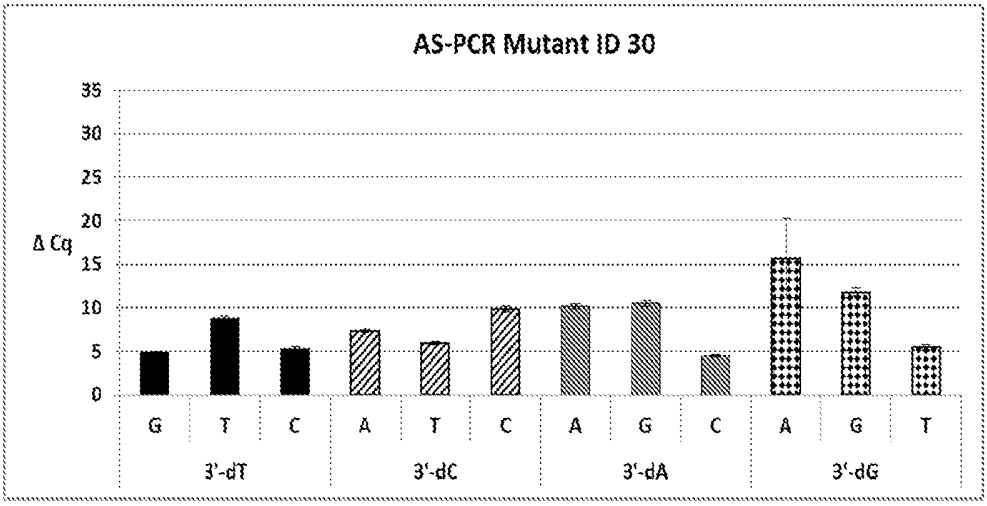

AS-PCR Mutant ID 30
Δ Cq
35
30
25
20
15
10
5
0
G T C A T C A G C A G T
3'-dT
3'-dC
3'-dA
3'-dG

FIG. 4

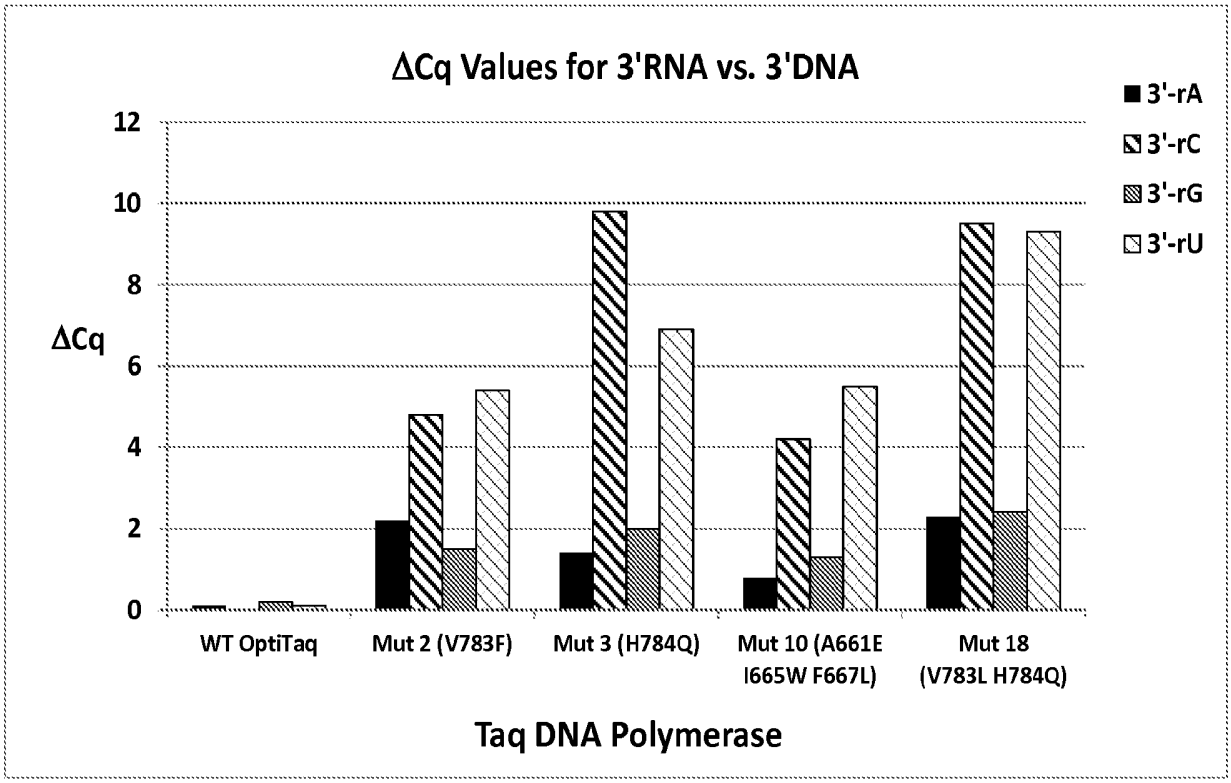

ΔCq Values for 3'RNA vs. 3'DNA
3'-rA
3'-rC
3'-rG
3'-rU
ΔCq
12
10
8
6
4
2
0
WT OptiTaq
Mut 2 (V783F)
Mut 3 (H784Q)
Mut 10 (A661E I665W F667L)
Mut 18 (V783L H784Q)
Taq DNA Polymerase

FIG. 5A

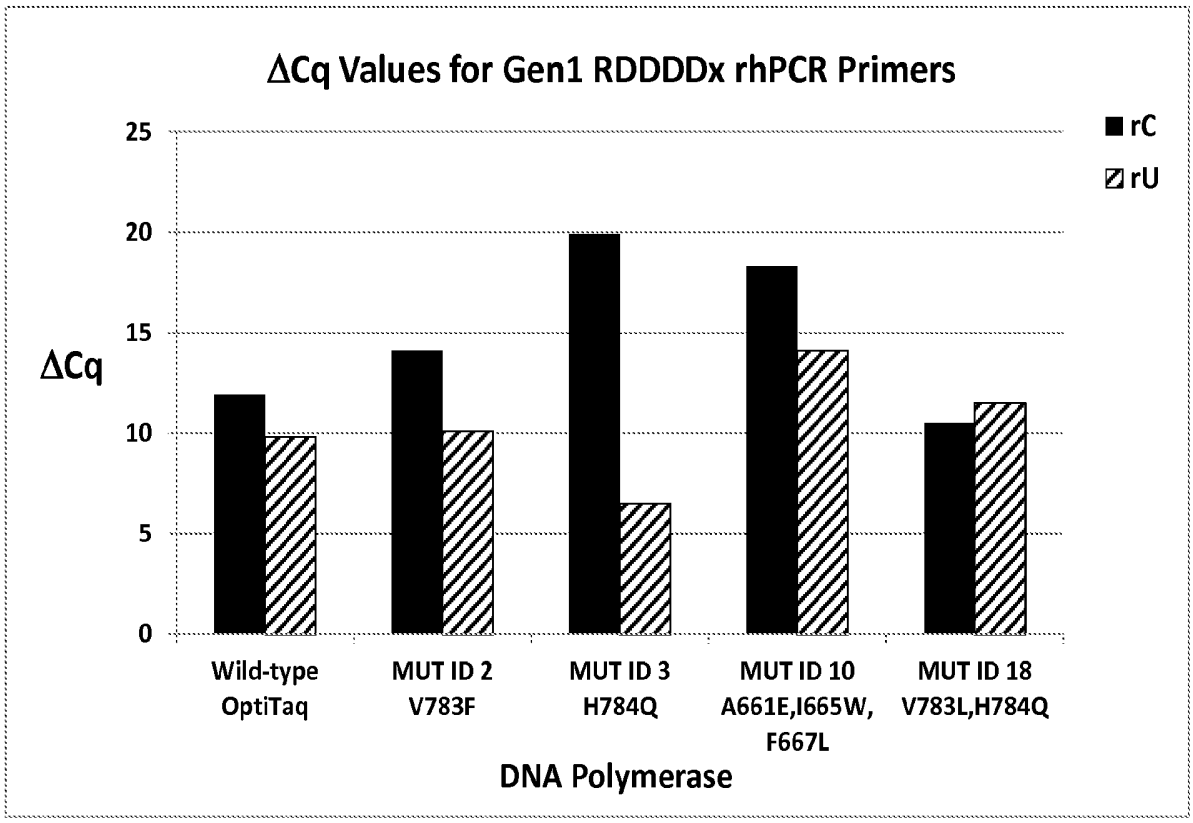

ΔCq Values for Gen1 RDDDDx rhPCR Primers
25
20
15
10
5
0
ΔCq
rC
rU
Wild-type OptiTaq
MUT ID 2 V783F
MUT ID 3 H784Q
MUT ID 10 A661E,I665W, F667L
MUT ID 18 V783L,H784Q
DNA Polymerase

FIG. 5B

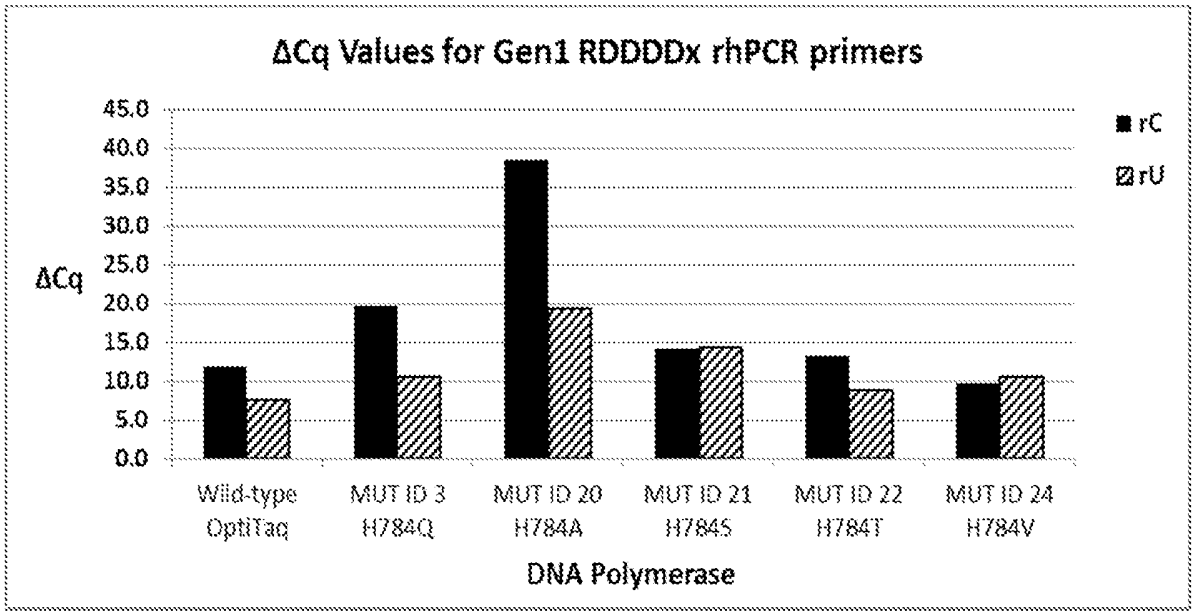

ΔCq Values for Gen1 RDDDDx rhPCR primers
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
ΔCq
rC
rU
Wild-type OptiTaq
MUT ID 3 H784Q
MUT ID 20 H784A
MUT ID 21 H784S
MUT ID 22 H784T
MUT ID 24 H784V
DNA Polymerase

FIG. 5C

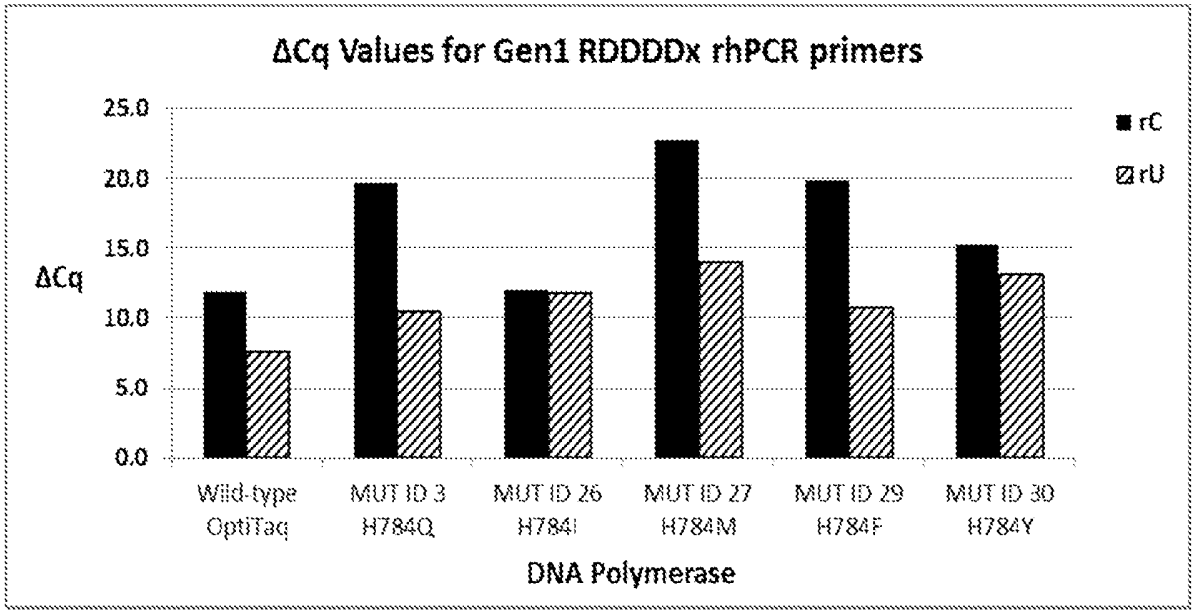

ΔCq Values for Gen1 RDDDDx rhPCR primers
25.0
20.0
15.0
10.0
5.0
0.0
ΔCq
rC
rU
Wild-type OptiTaq
MUT ID 3 H784Q
MUT ID 26 H784I
MUT ID 27 H784M
MUT ID 29 H784F
MUT ID 30 H784Y
DNA Polymerase

FIG. 6A

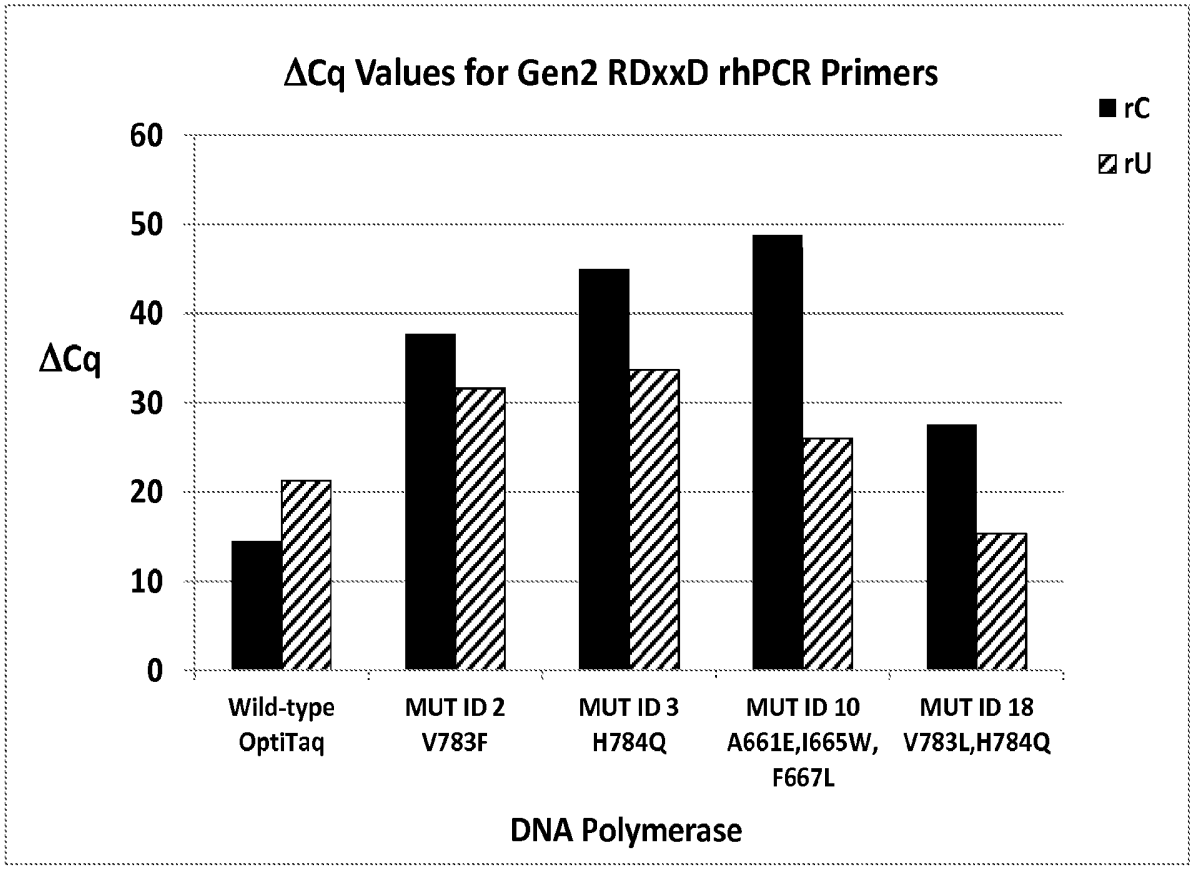

ΔCq Values for Gen2 RDxxD rhPCR Primers
rC
rU
60
50
40
30
20
10
0
ΔCq
Wild-type OptiTaq
MUT ID 2 V783F
MUT ID 3 H784Q
MUT ID 10 A661E,I665W, F667L
MUT ID 18 V783L,H784Q
DNA Polymerase

FIG. 6B

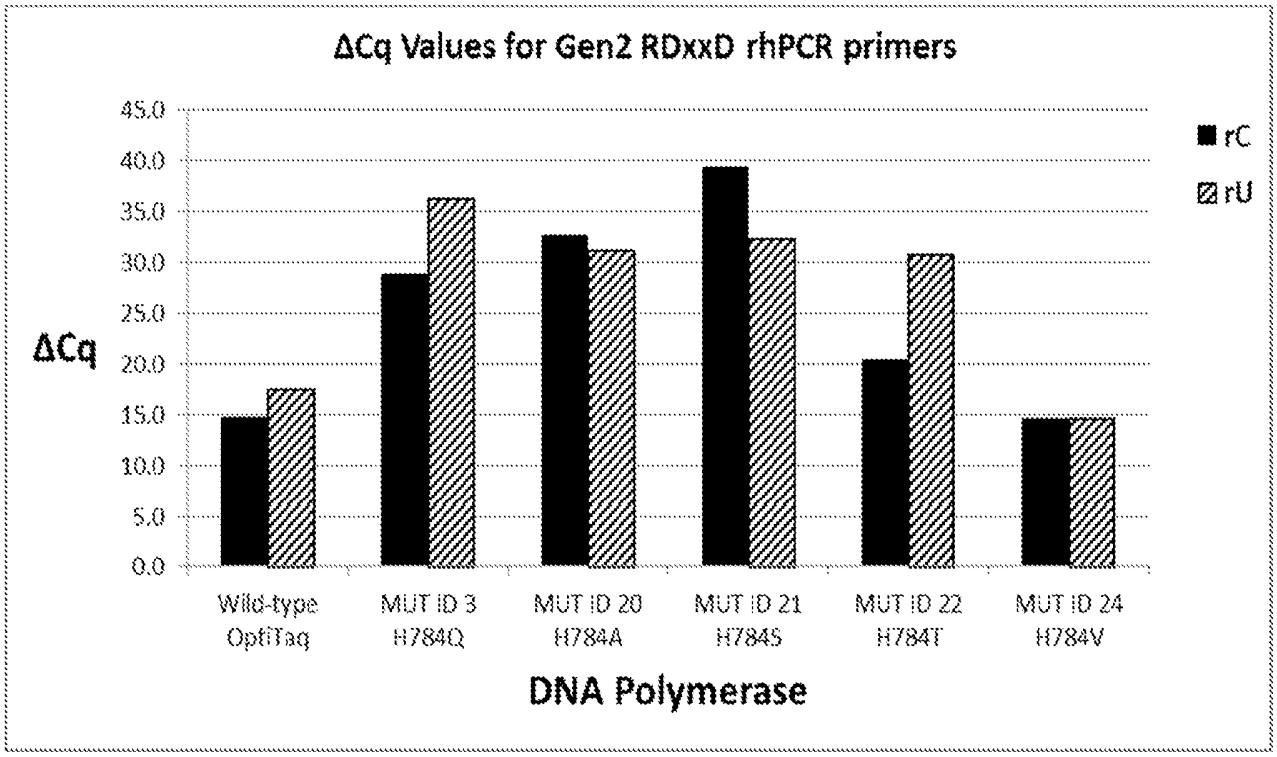

ΔCq Values for Gen2 RDxxD rhPCR primers
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
ΔCq
rC
rU
Wild-type OptiTaq
MUT ID 3 H784Q
MUT ID 20 H784A
MUT ID 21 H784S
MUT ID 22 H784T
MUT ID 24 H784V
DNA Polymerase

FIG. 6C

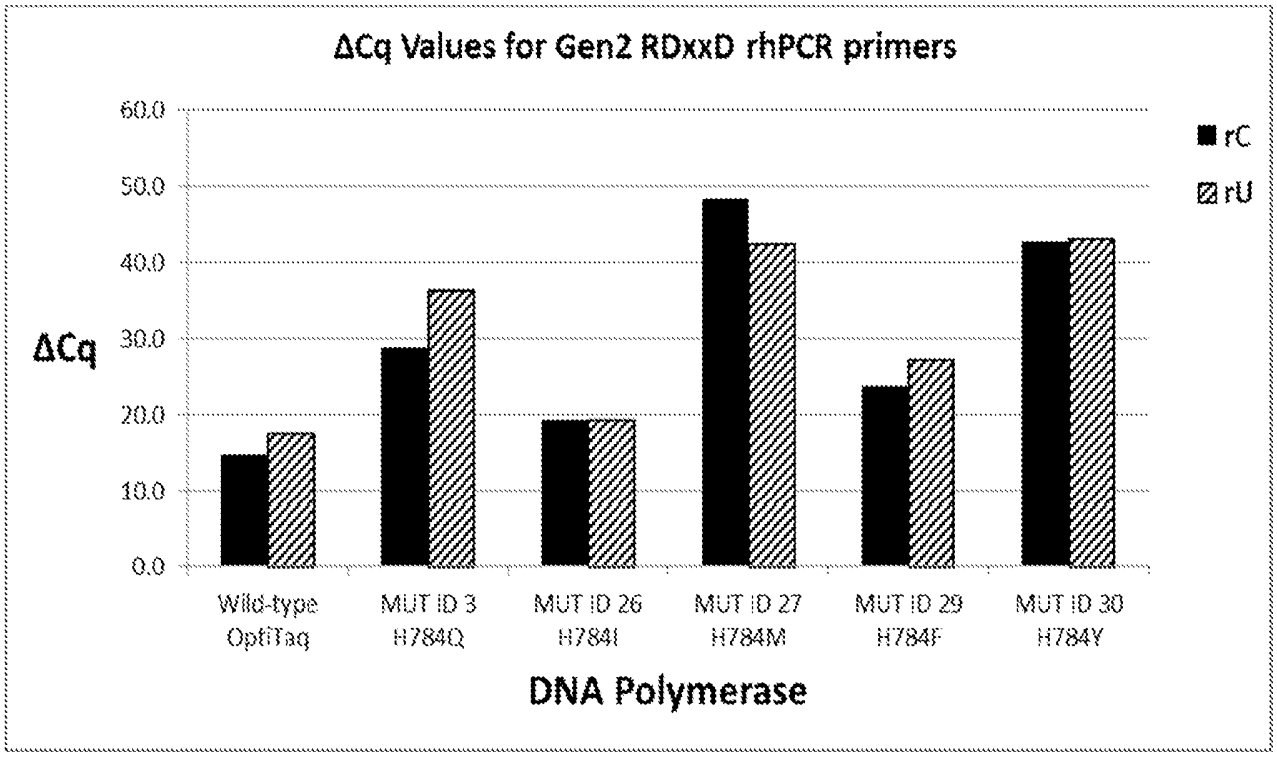
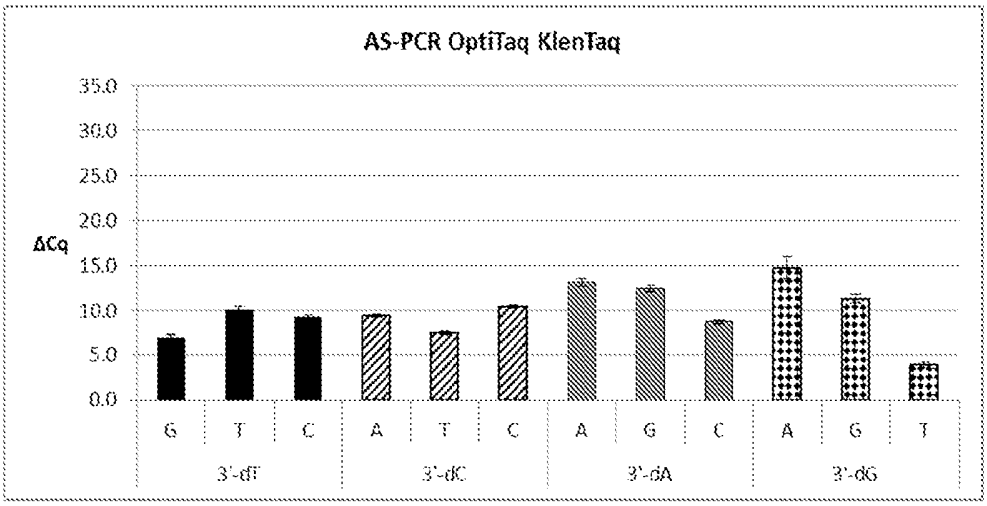
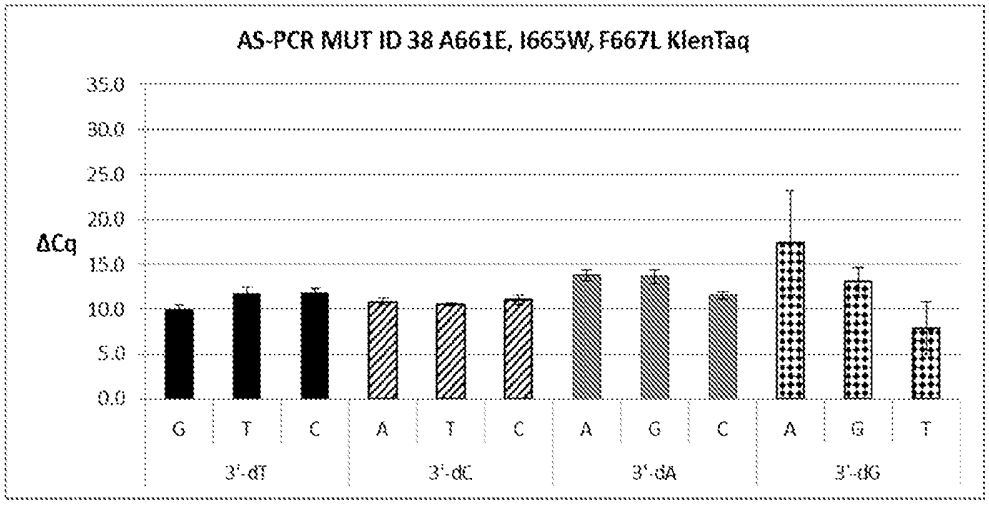

ΔCq Values for Gen2 RDxxD rhPCR primers
60.0
50.0
40.0
30.0
20.0
10.0
0.0
ΔCq
rC
rU
Wild-type OptiTaq
MUT ID 3 H784Q
MUT ID 26 H784I
MUT ID 27 H784M
MUT ID 29 H784F
MUT ID 30 H784Y
DNA Polymerase

FIG 7A.

(i)



(ii)



(iii)

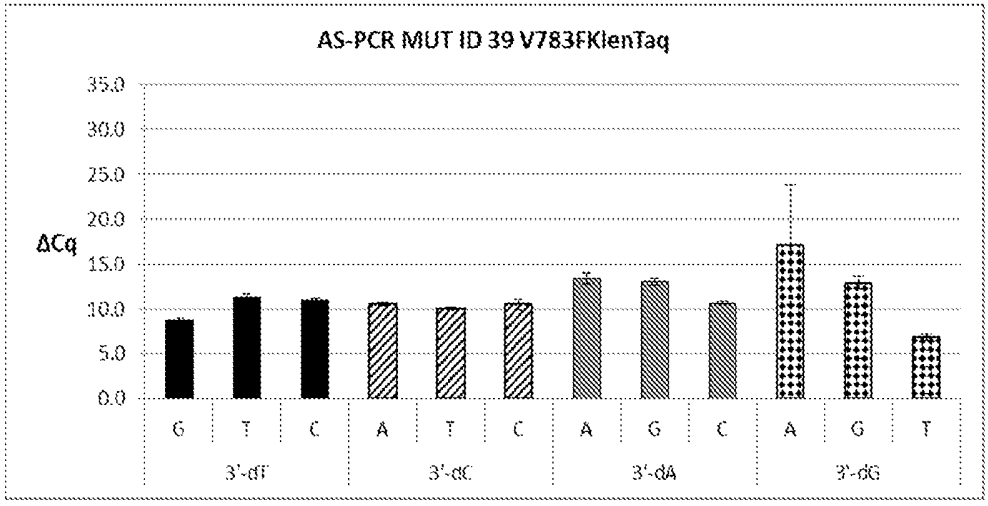
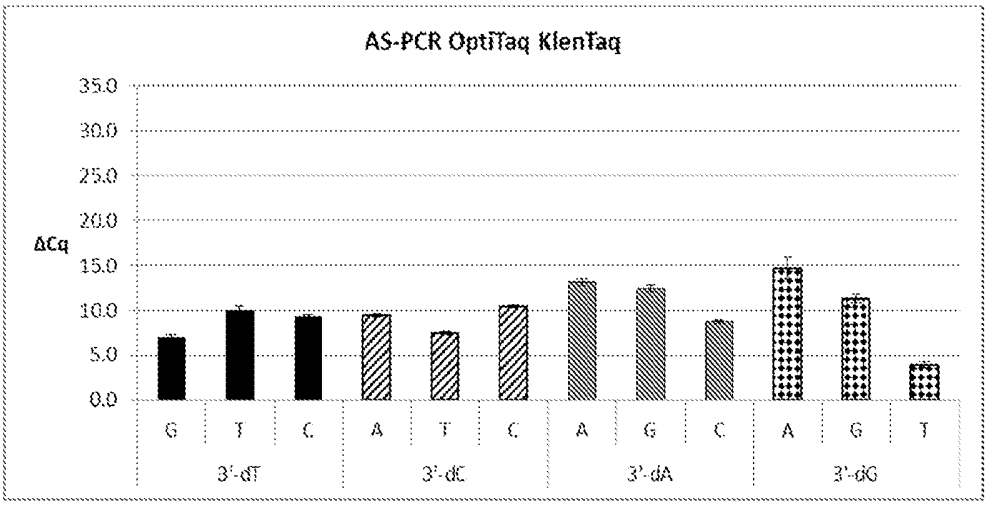
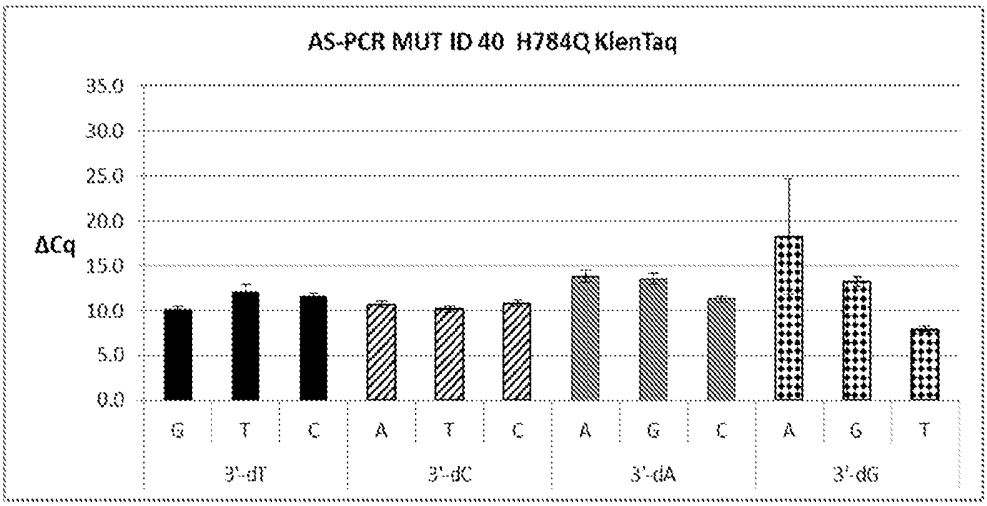


FIG 7B.

(i)



(ii)



(iii)

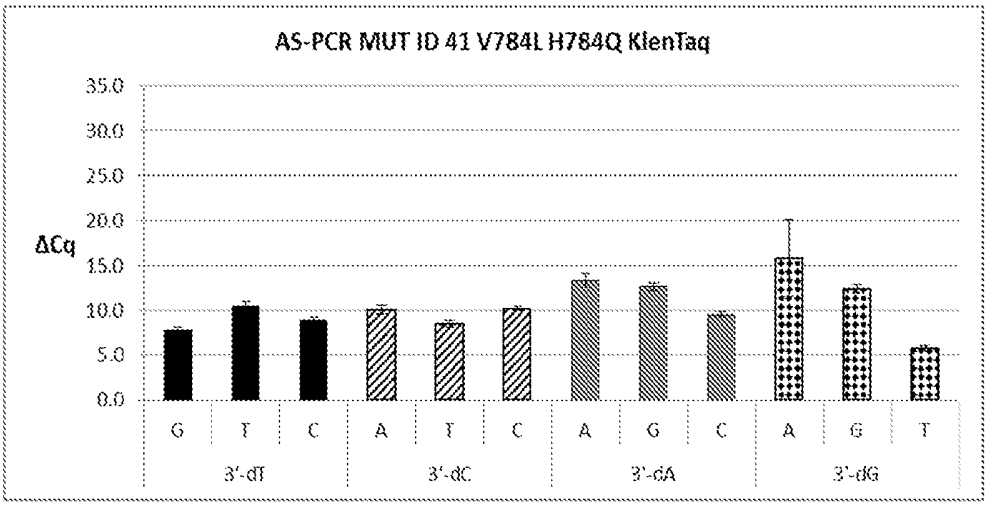
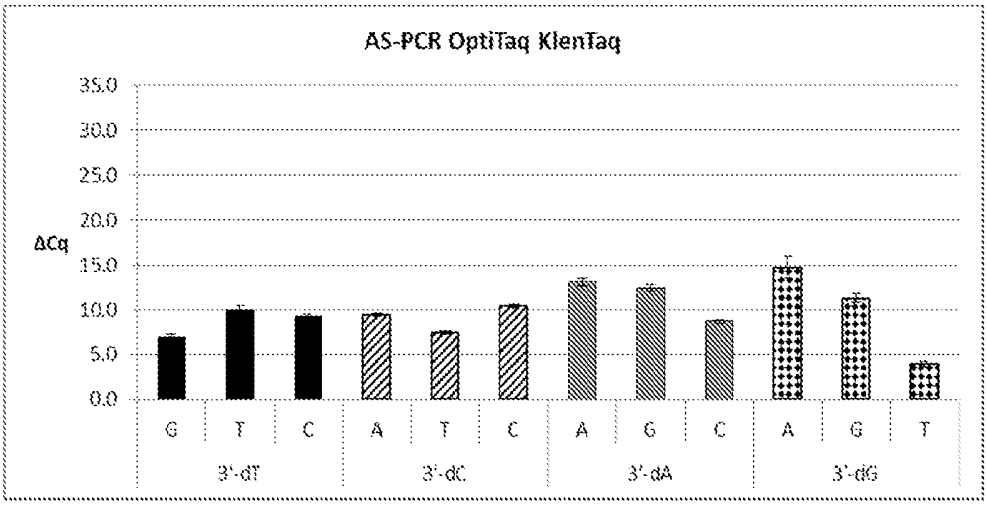
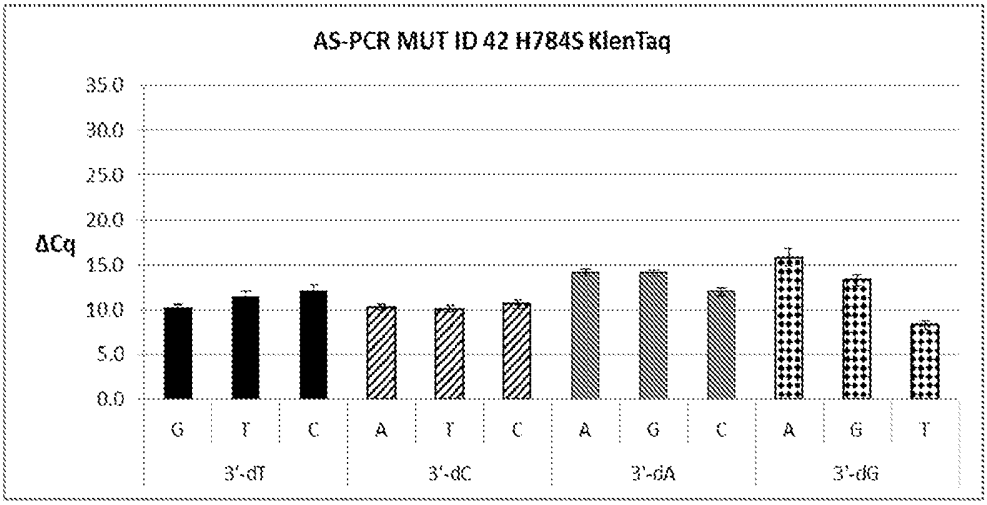


FIG 7C.

(i)



(ii)



(iii)

