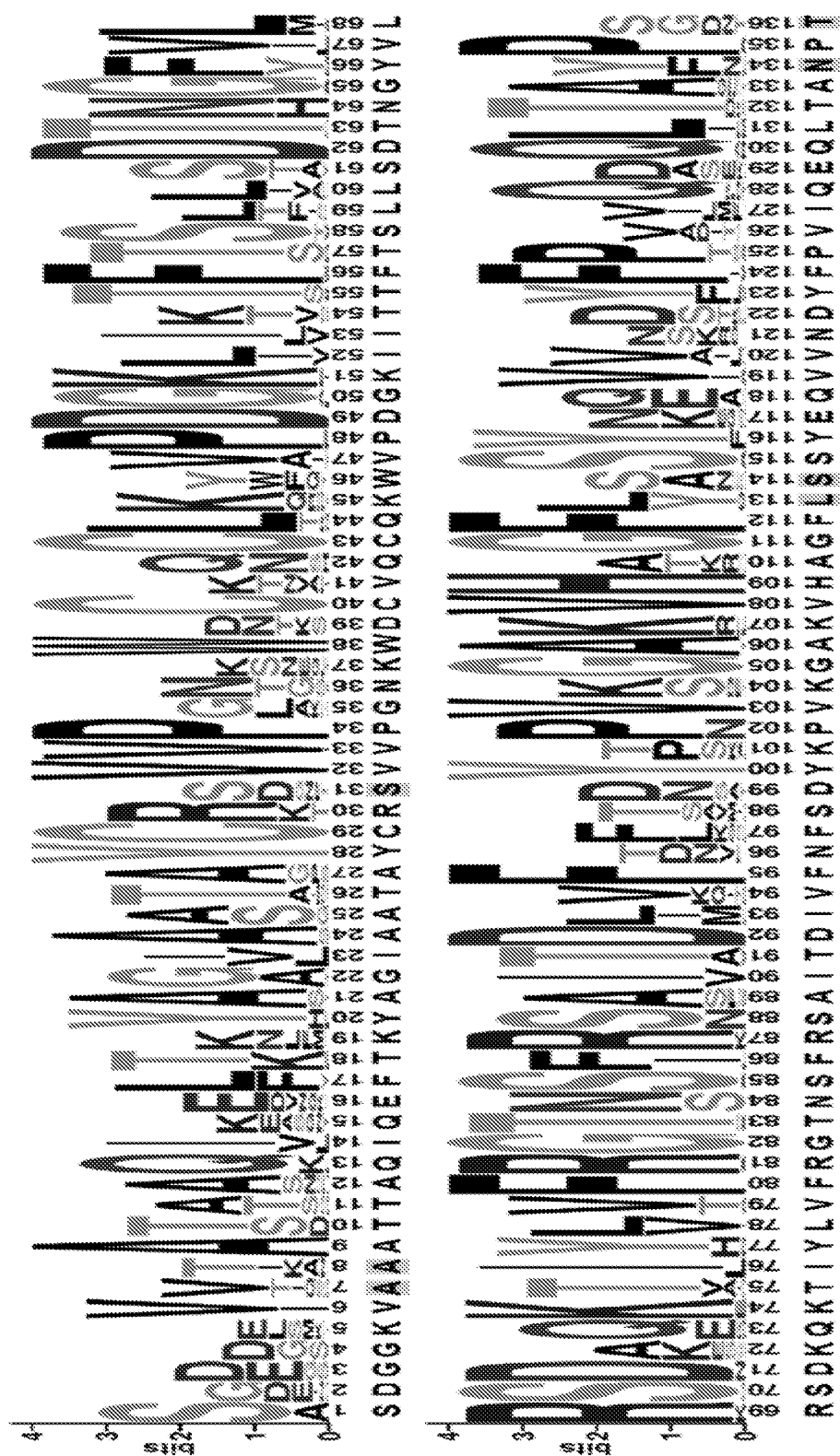




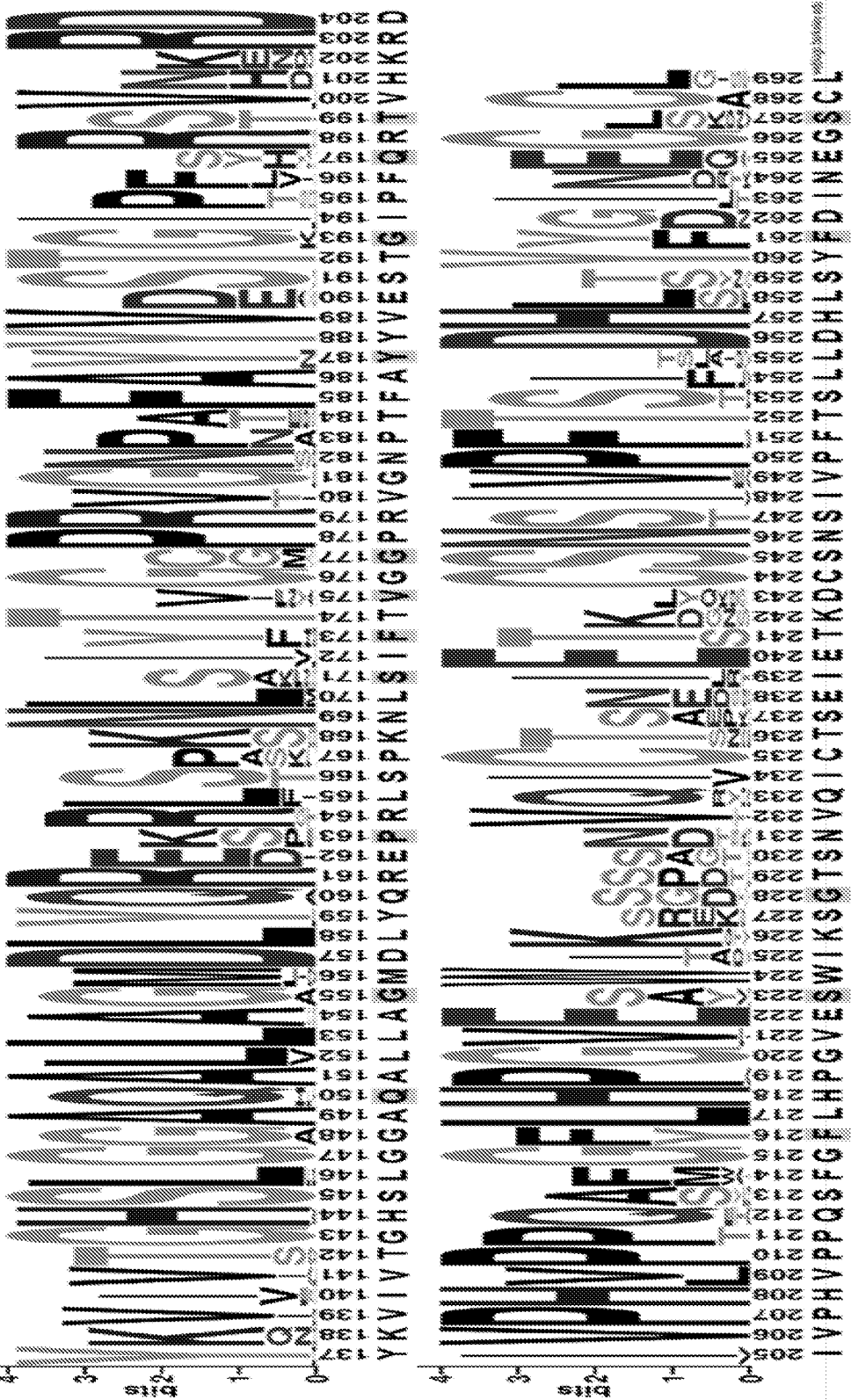


FIG. 1B

First round of screening		Second round of screening	
A8E	Y187N	A7R	V175F
S31D	G193K	L113Y	G177C
S114N	Q197H	Q150F	T199V
N134Y	Q197Y	Q150H	F216Y
T136D	G228D	G155A	S223Y
P163K	G228S	S171F	F261Y
F173Y	S267L		

FIG. 2

Mutant	Relative activity (60°C/45°C)	Fold Improvement
4x	24%	1.0
A8E	38%	1.6
S31D	22%	0.9
S114N	33%	1.4
N134Y	52%	2.2
T136D	43%	1.8
P163K	34%	1.4
F173Y	43%	1.8
Y187N	30%	1.2
G193K	30%	1.2
Q197H	55%	2.3
Q197Y	47%	1.9
G228D	34%	1.4
G228S	22%	0.9
S267L	57%	2.4

FIG. 3

Mutant	Relative activity (65°C/45°C)	Fold Improvement
4x	6%	1.0
N134Y	16%	2.8
T136D	3%	0.6
F173Y	5%	0.9
Q197H	9%	1.6
Q197Y	3%	0.5
S267L	13%	2.3
7x	45%	8.0

FIG. 4

Mutant	Relative activity (67°C/45°C)	Fold Improvement
7x	19%	1.0
A7R	32%	1.7
L113Y	26%	1.3
Q150F	3%	0.2
Q150H	4%	0.2
G155A	15%	0.8
S171F	16%	0.8
V175F	81%	4.2
G177C	125%	6.4
T199V	24%	1.2
F216Y	52%	2.7
S223Y	4%	0.2
F261Y	3%	0.2

FIG. 5

Mutant	Relative activity (70°C/45°C)	Fold Improvement
7x	2%	1.0
V175F	10%	4.5
G177C	14%	6.1
F216Y	3%	1.2
10x	121%	54.4

FIG. 6

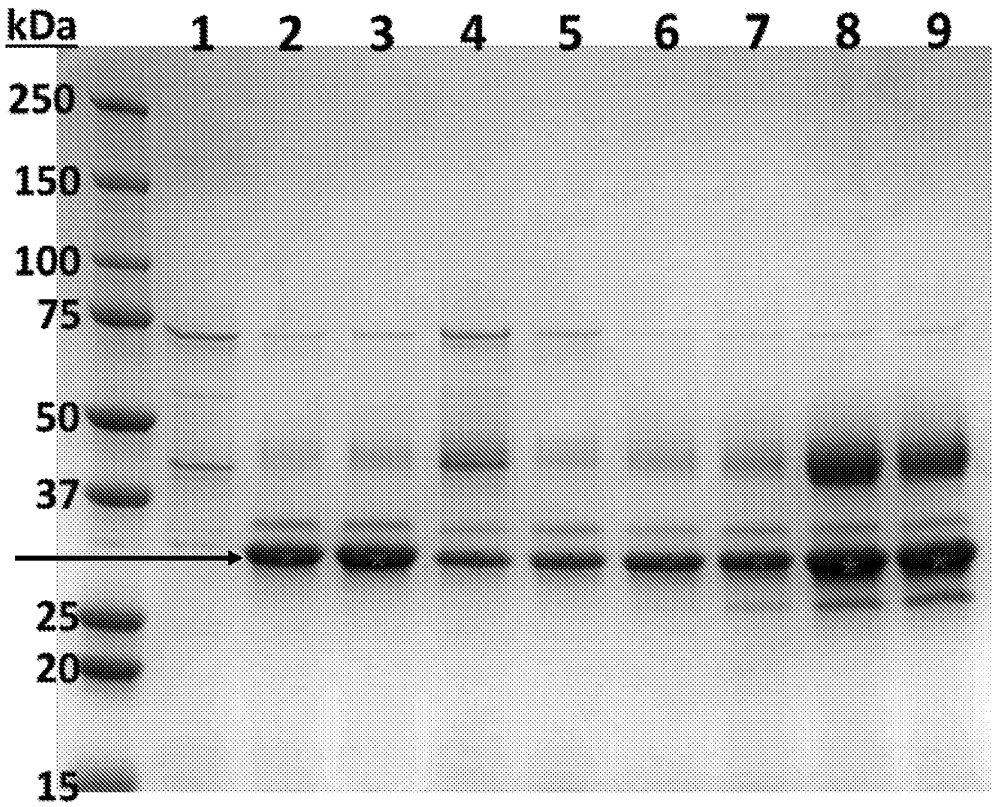


FIG. 7

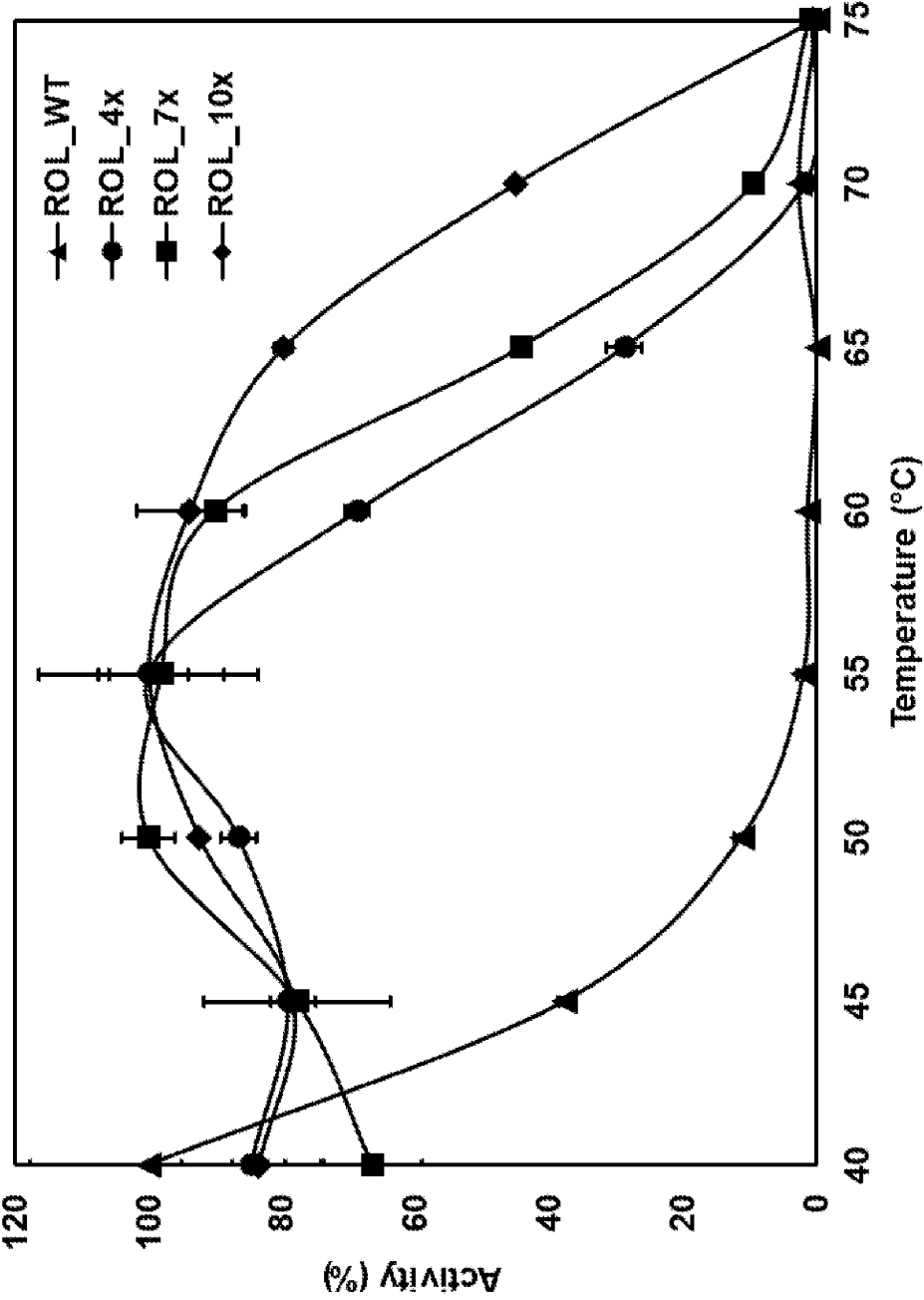


FIG. 8

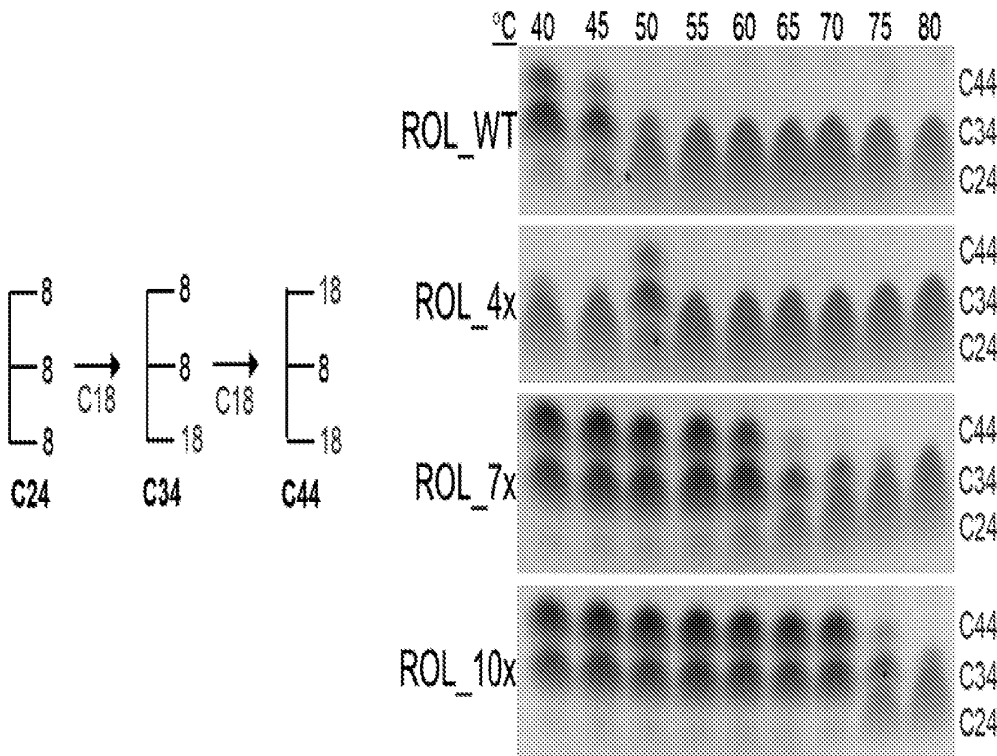


FIG. 9

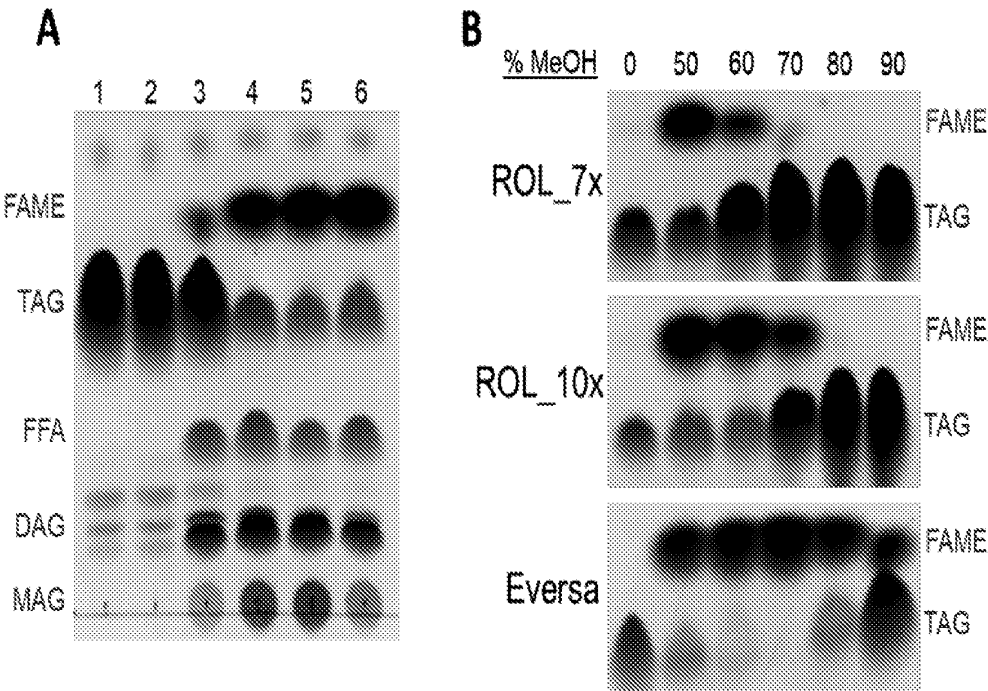


FIG. 10

Residue	B-factor
K5	34.1
Q15	32.8
R30	30.9
Q44	31.1
K72	33.3
S88	34.5
A89	35.8
T91	35.5
K226	31.6
S227	39.1
G228	42.2
T229	44.6
S230	41.3
N231	35.2
D243	30.6

FIG. 11

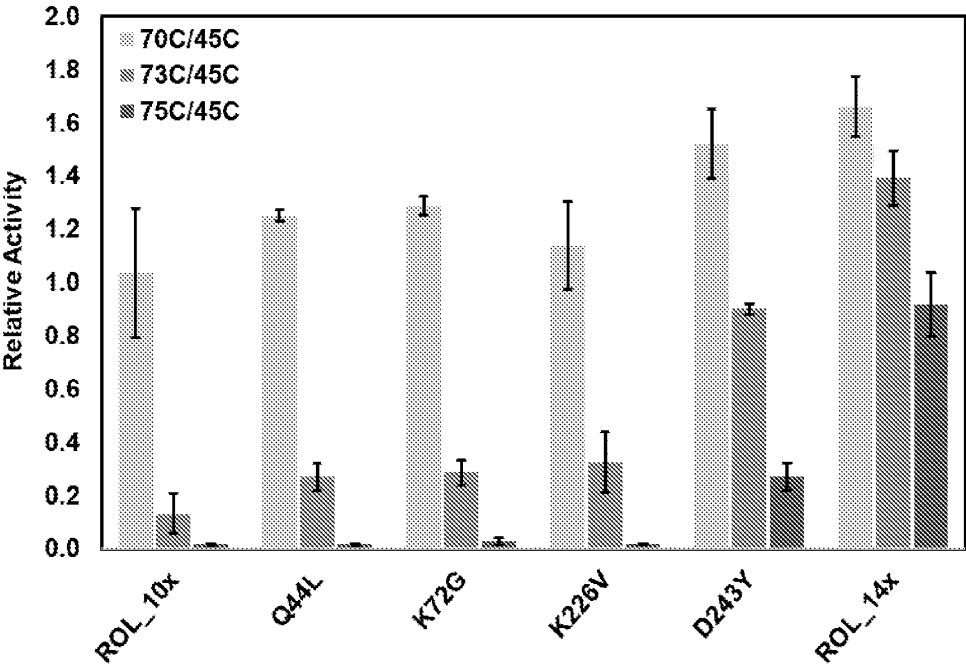


FIG. 12

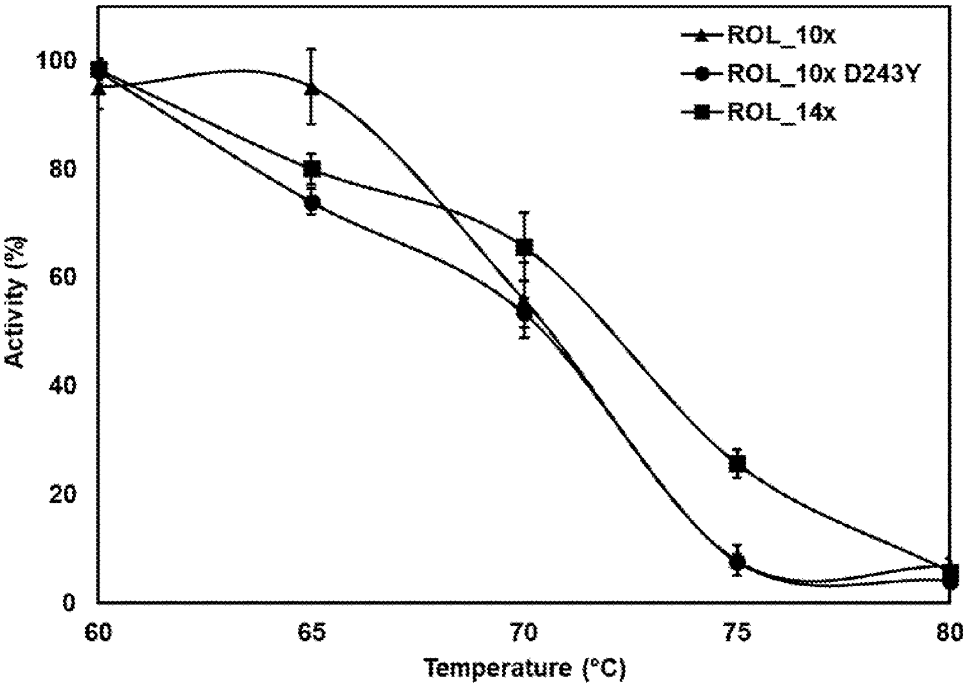


FIG. 13

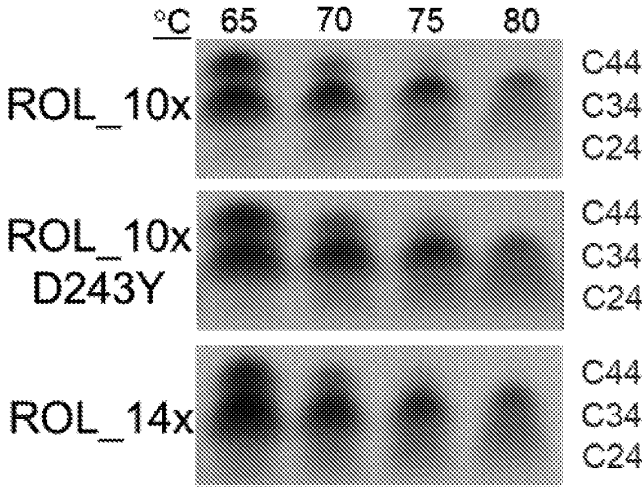


FIG. 14