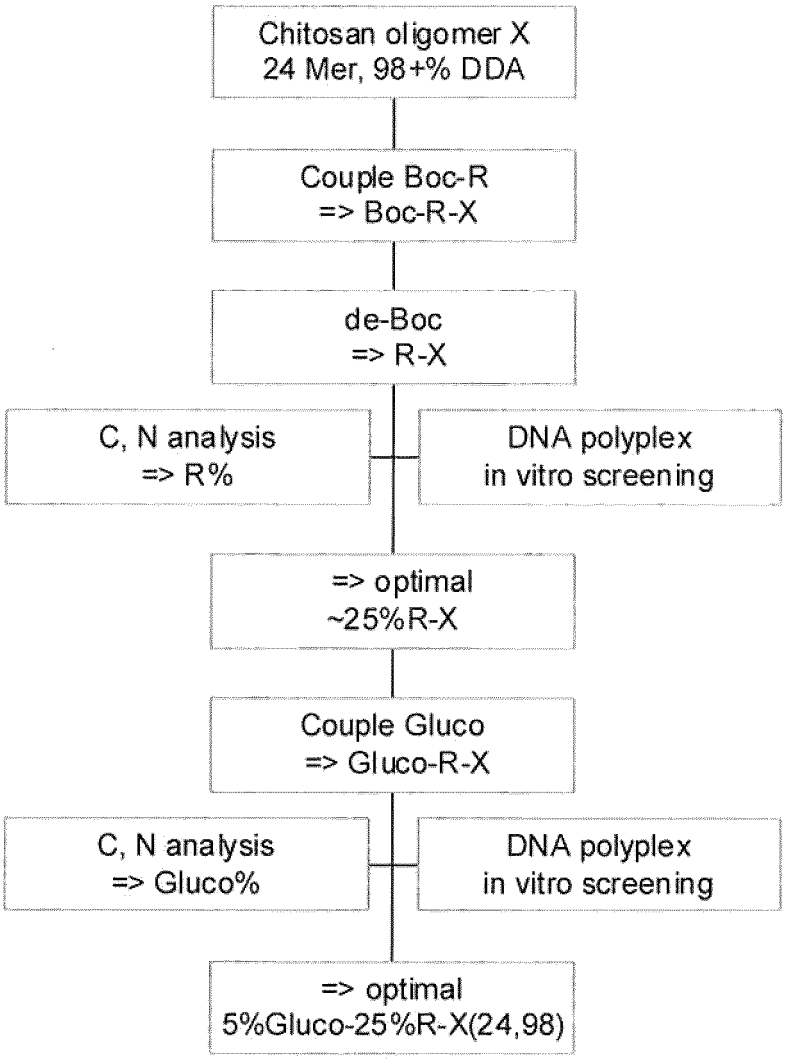
Chitosan oligomer X
24 Mer, 98+% DDA
Couple Boc-R
=> Boc-R-X
de-Boc
=> R-X
C, N analysis
=> R%
DNA polyplex
in vitro screening
=> optimal
~25%R-X
Couple Gluco
=> Gluco-R-X
C, N analysis
=> Gluco%
DNA polyplex
in vitro screening
=> optimal
5%Gluco-25%R-X(24,98)

FIG. 1

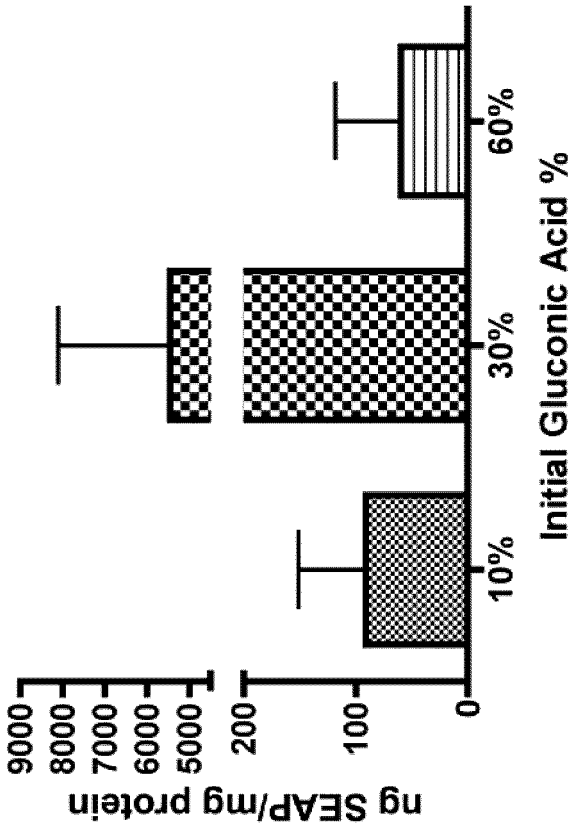
ng SEAP/mg protein
9000
8000
7000
6000
5000
200
100
0
10%
30%
60%
Initial Gluconic Acid %

FIG. 2A

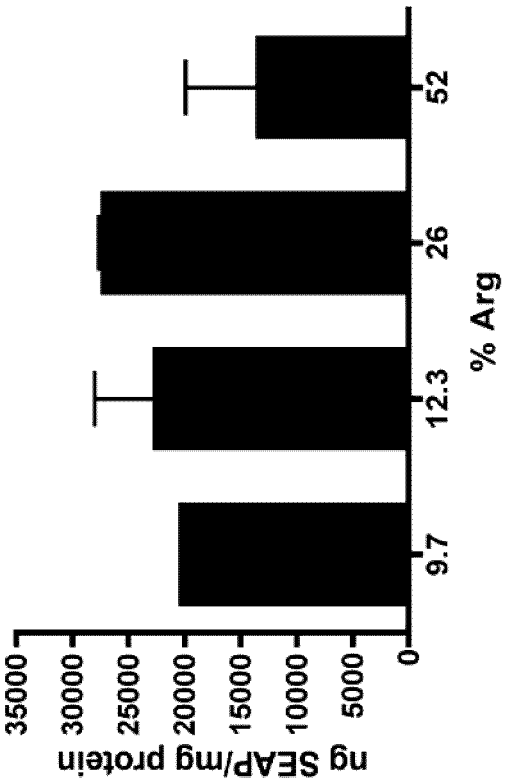
ng SEAP/mg protein
35000
30000
25000
20000
15000
10000
5000
0
9.7
12.3
26
52
% Arg

FIG. 2B

FIG. 3

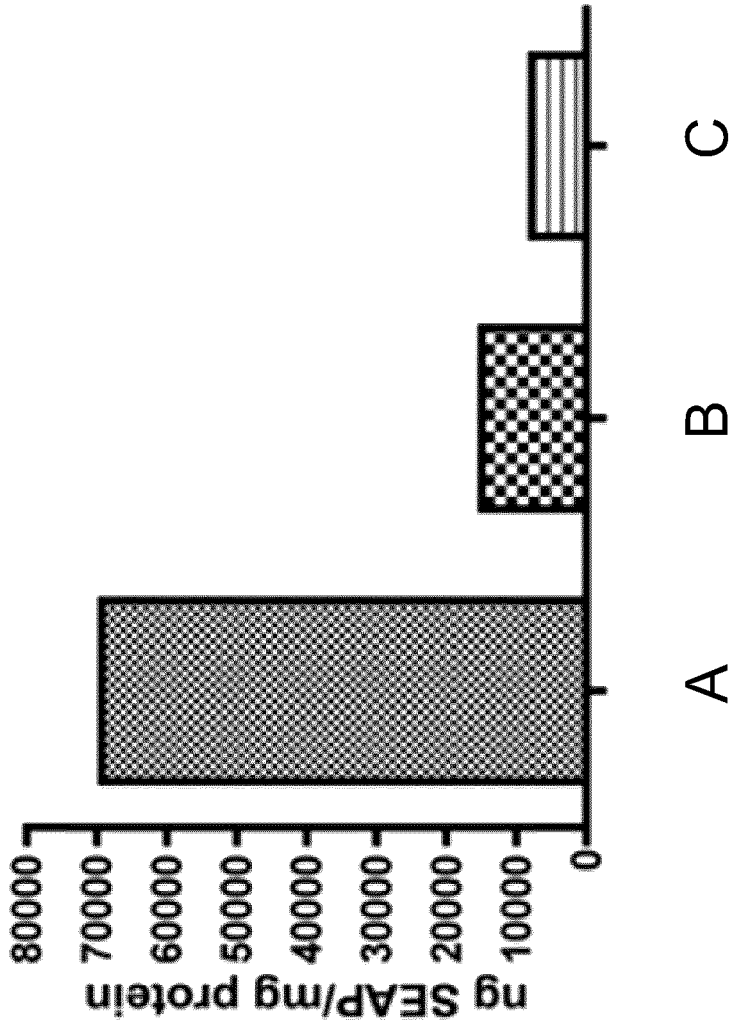
ng SEAP/mg protein
80000
70000
60000
50000
40000
30000
20000
10000
0
A
B
C

FIG. 4

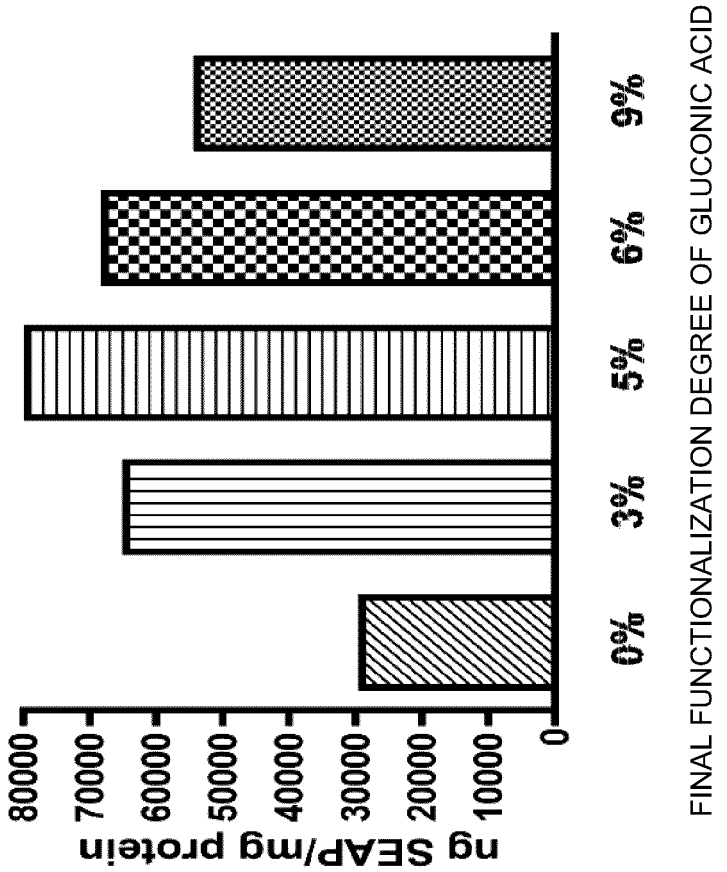
ng SEAP/mg protein
80000
70000
60000
50000
40000
30000
20000
10000
0
0%
3%
5%
6%
9%
FINAL FUNCTIONALIZATION DEGREE OF GLUCONIC ACID

FIG. 5

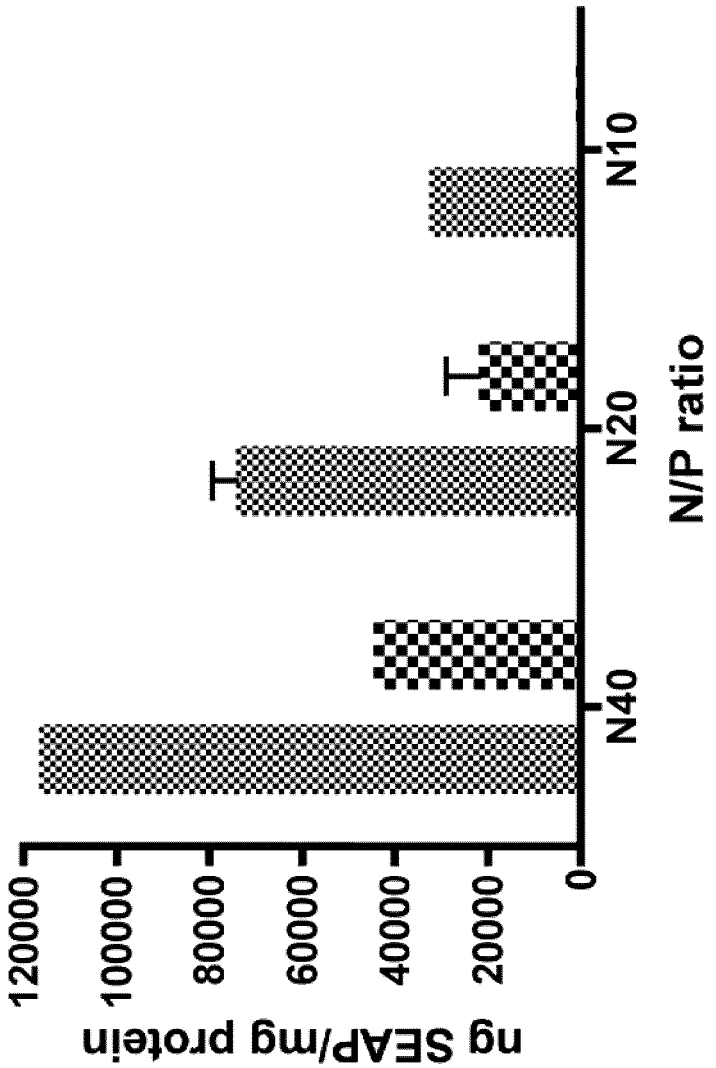
ng SEAP/mg protein
120000
100000
80000
60000
40000
20000
0
N40
N20
N10
N/P ratio

FIG. 6

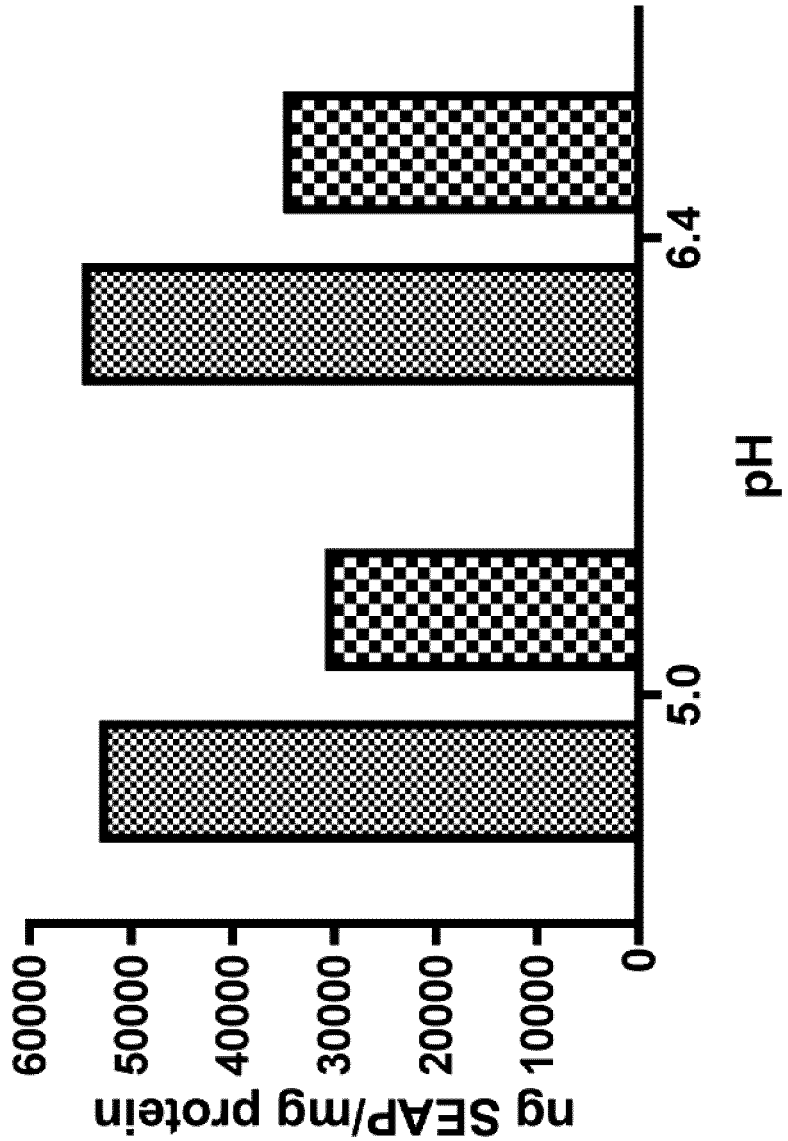
ng SEAP/mg protein
60000
50000
40000
30000
20000
10000
0
5.0
6.4
pH

FIG. 7

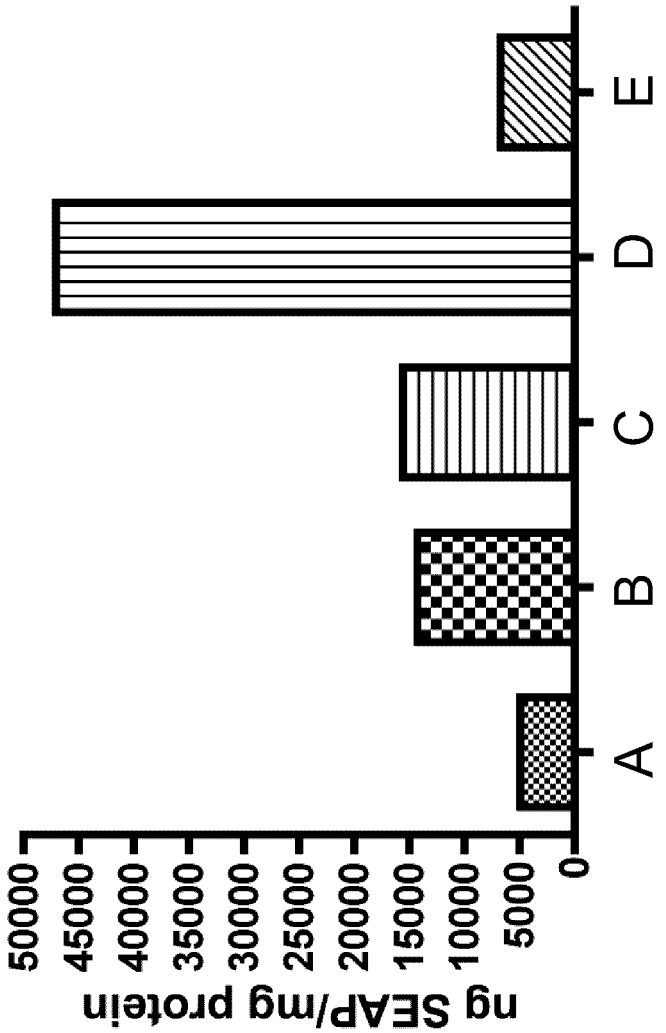
ng SEAP/mg protein
50000
45000
40000
35000
30000
25000
20000
15000
10000
5000
0
A
B
C
D
E

FIG. 8A

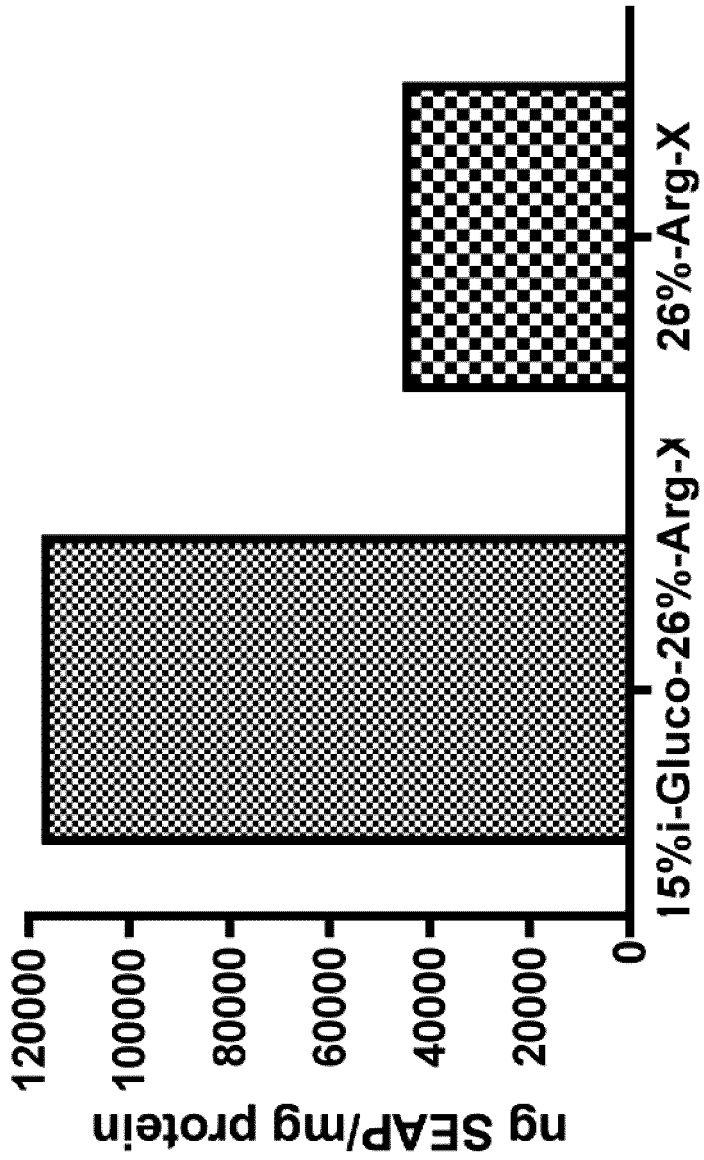
ng SEAP/mg protein
120000
100000
80000
60000
40000
20000
0
15%i-Gluco-26%-Arg-X
26%-Arg-X

FIG. 8B

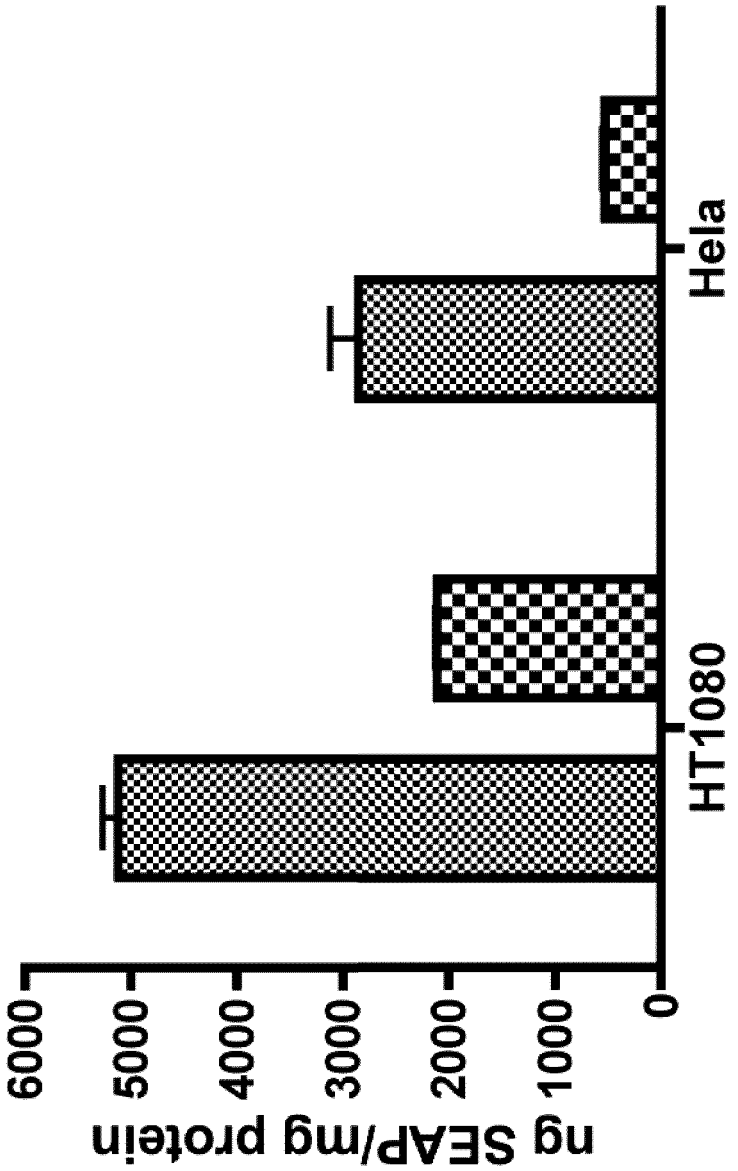
ng SEAP/mg protein
6000
5000
4000
3000
2000
1000
0
HT1080
Hela

FIG. 8C

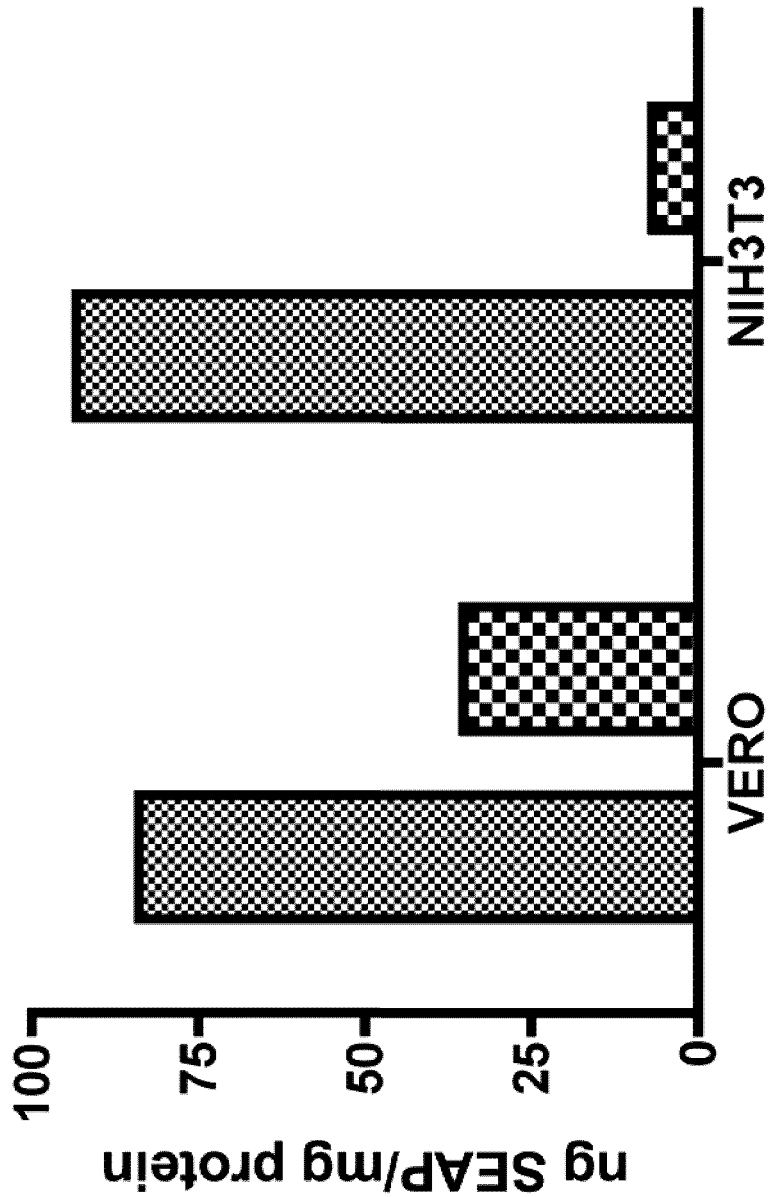

FIG. 9

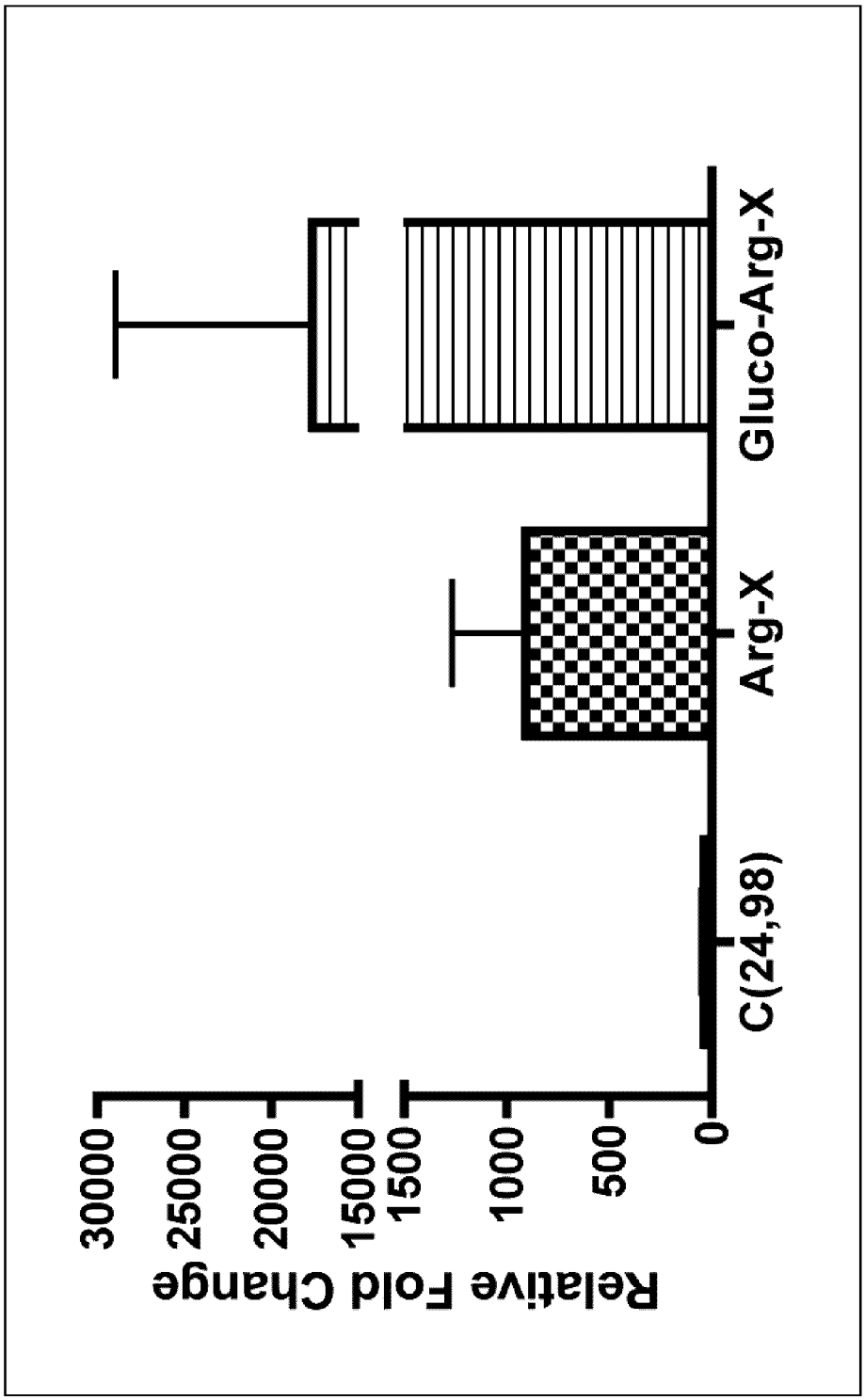
Relative Fold Change
30000
25000
20000
15000
1500
1000
500
0
C(24,98)
Arg-X
Gluco-Arg-X

FIG. 10

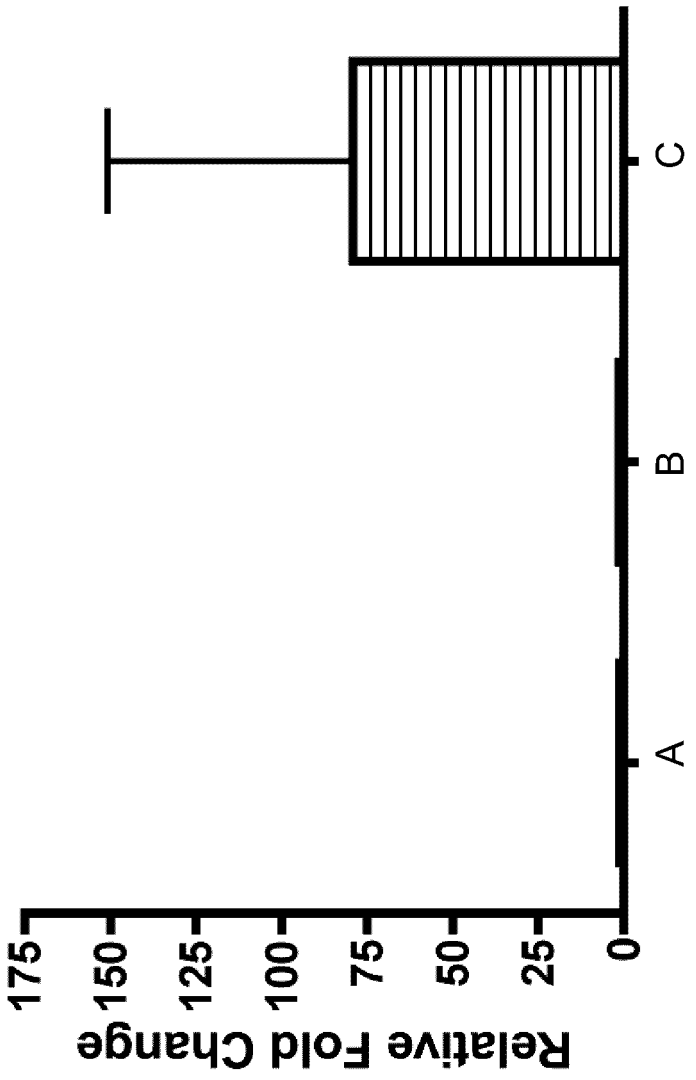

FIG. 11

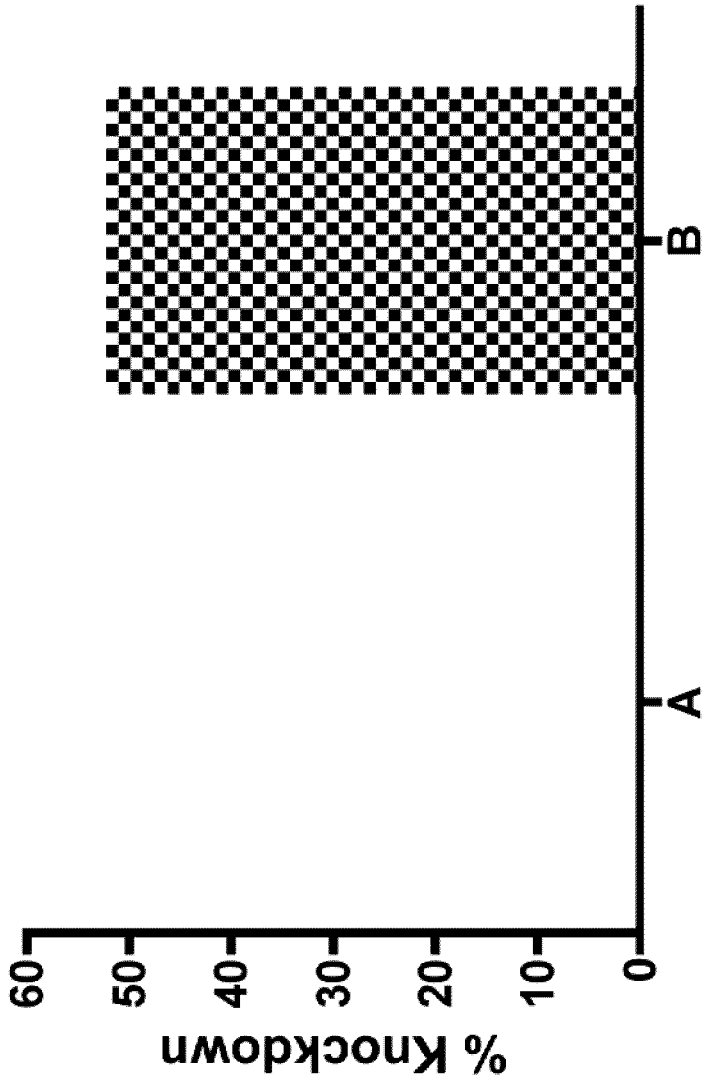

FIG. 12

Test	Accept. Crit.	DD-EG-10 Frozen	DD-EG-10 Lyophilized	DD-EG-10 Lyophilized (after 3Mo)
Plasmids		CMV-hIL-10	CMV-hIL-10	CMV-hIL-10
[DNA]		900 ug/ml (Batch 192-92)	900 ug/ml (Batch 192-92)	900 ug/ml (Batch 192-92)
Physicochemical Properties				
pH	5.5-6.5	6.0	6.0	6.0
Size (nm)	<200nm	96	99	99
Zeta Potential (mV)	>30 mV	30	29	30
PDI	<0.25	0.081	0.076	0.09
Stability @ RT O/N	Size & PDI	96nm, 0.099	100nm, 0.101	97nm, 0.100
Purity				
None-complex DNA (AGE)	No free DNA	No free DNA	No free DNA	No free DNA