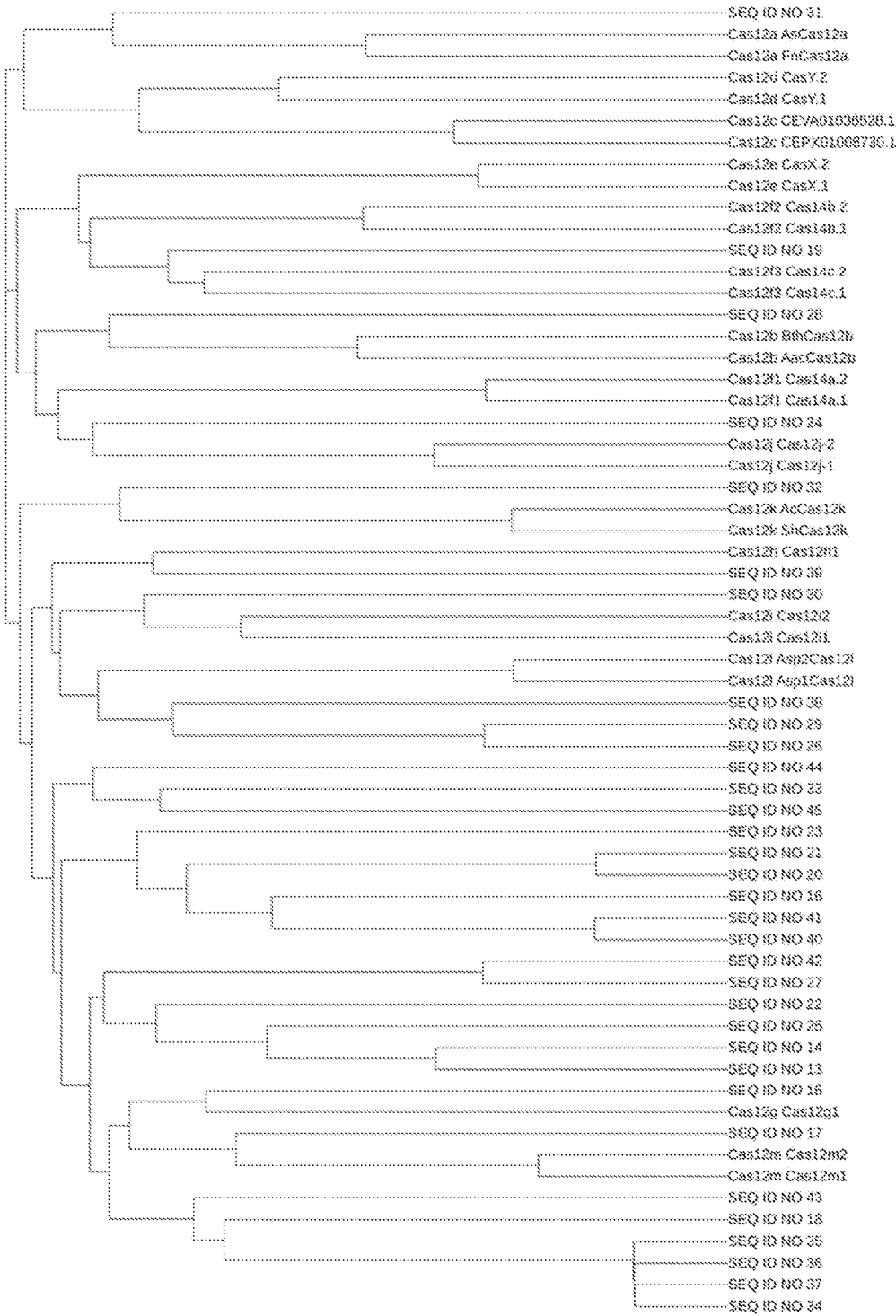


[图 1A]

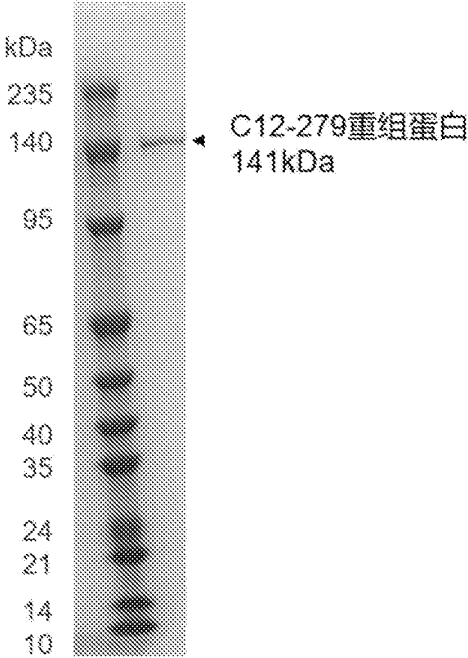


Tree scale: 1

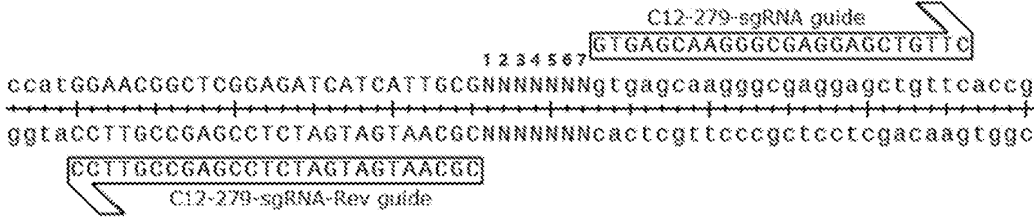
[图 1B]

CLUSTER	蛋白
CLUSTER1	SEQ ID NO: 31
CLUSTER2	SEQ ID NO: 28
CLUSTER3	SEQ ID NO: 24
CLUSTER4	SEQ ID NO: 32
CLUSTER5	SEQ ID NO: 29
CLUSTER6	SEQ ID NO: 30
CLUSTER7	SEQ ID NO: 38、29、26
CLUSTER8	SEQ ID NO: 44、33、45
CLUSTER9	SEQ ID NO: 23、21、20、16、41、40
CLUSTER10	SEQ ID NO: 42、27、22、25、14、13
CLUSTER11	SEQ ID NO: 15
CLUSTER12	SEQ ID NO: 17
CLUSTER13	SEQ ID NO: 43、18、34、35、36、37

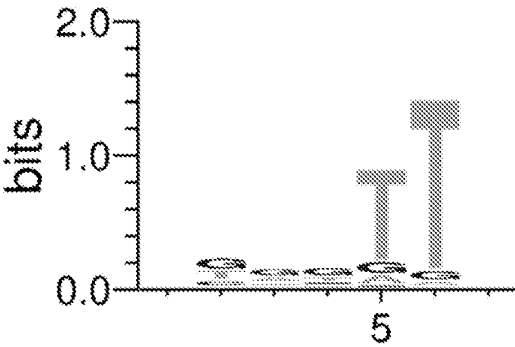
[图 2]



[图 3]

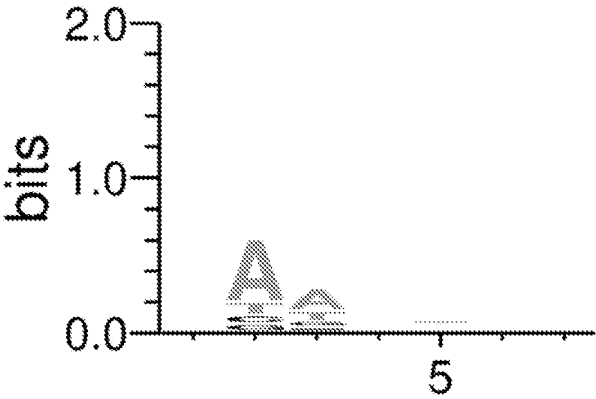


[图 4]



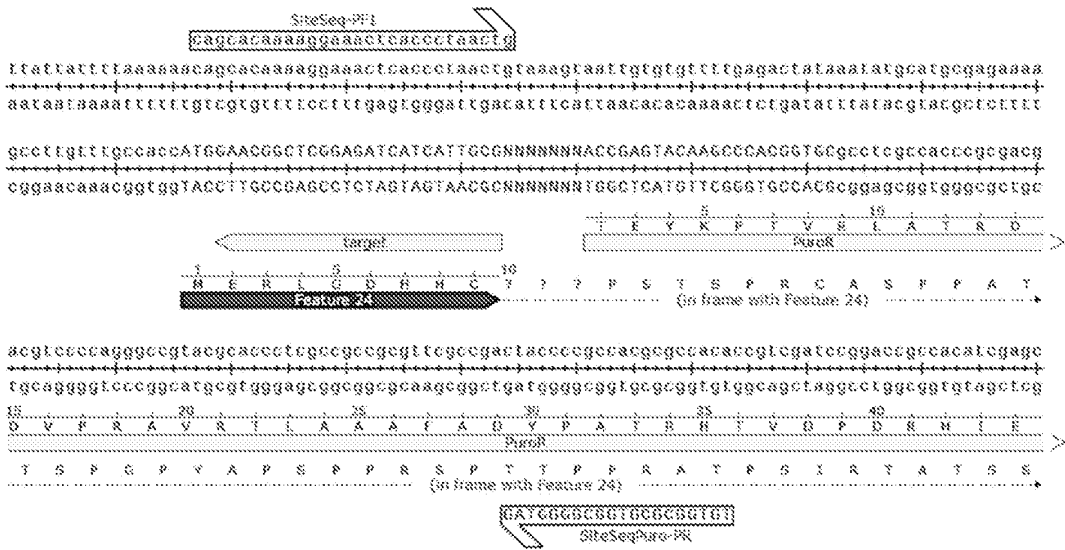
	N1	N2	N3	N4	N5	N6	N7
A	23	6	27	13	8	2	21
T	22	33	19	23	77	90	35
G	29	40	41	45	11	5	18
C	24	20	10	17	3	1	24

[图 5]

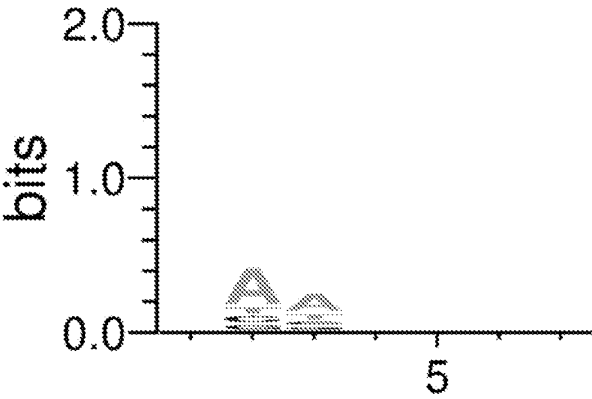


	N1	N2	N3	N4	N5	N6	N7
G	34	8	13	34	25	29	31
T	25	14	23	24	37	27	25
A	17	67	51	19	15	17	19
C	22	9	10	21	21	24	23

[图 6]

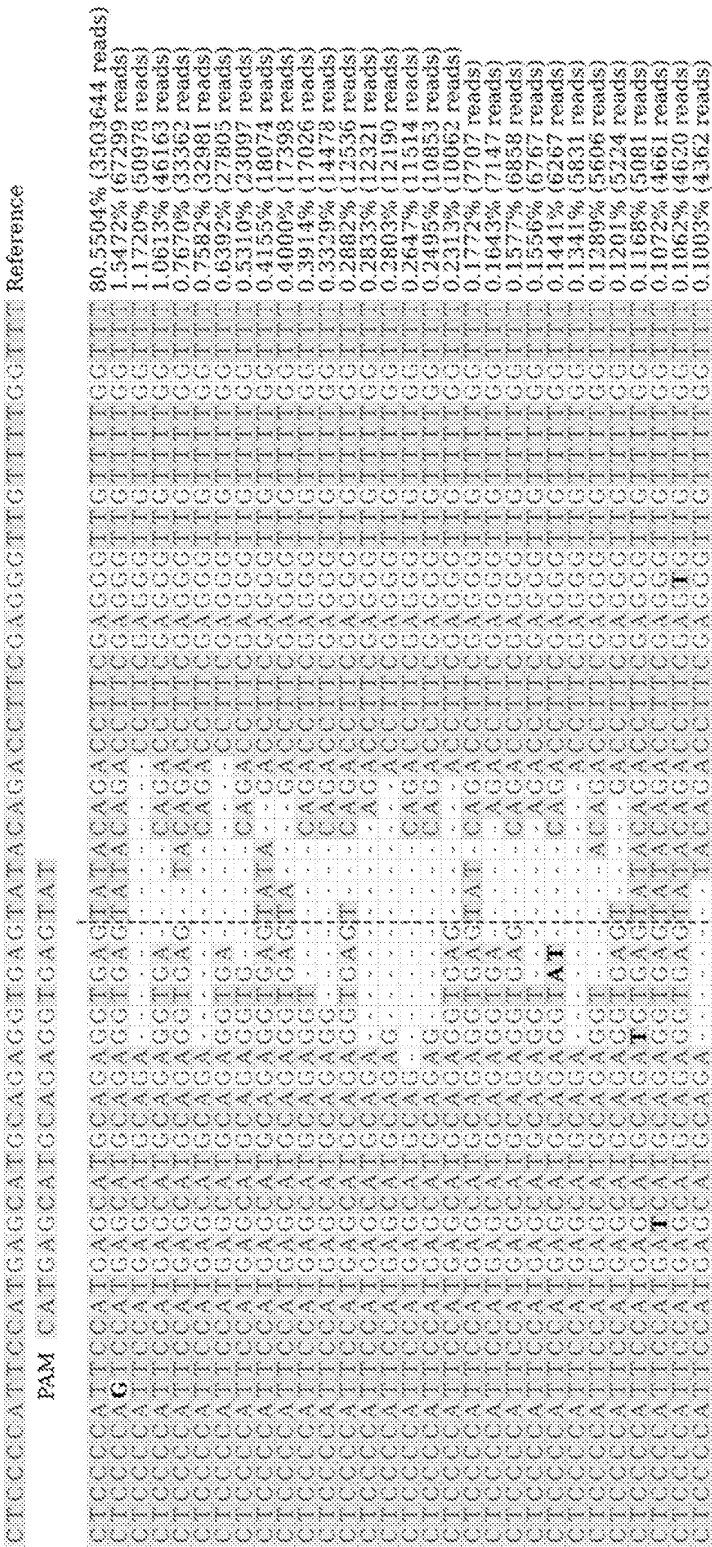


[图 7]



	N1	N2	N3	N4	N5	N6	N7
A	25	60	51	21	20	20	25
G	23	11	13	28	24	27	24
C	23	13	14	27	25	29	24
T	27	14	20	21	29	22	24

[图 8]

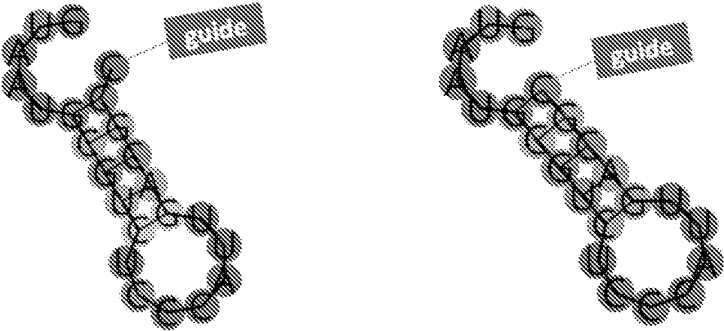


bold Substitutions
- Deletions
----- Predicted cleavage position

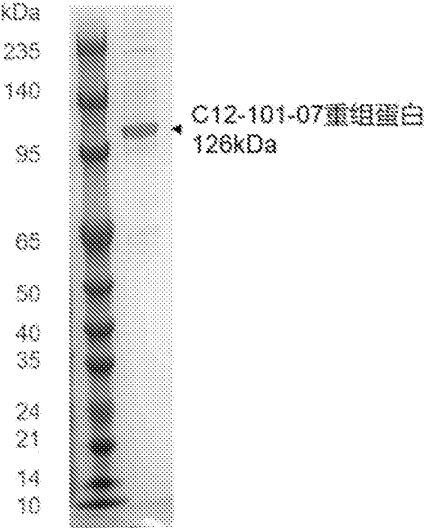
[图 9]

	N1	N2	N3	N4	N5	N6	N7
T	14	21	4	27	16	32	22
A	0	32	95	60	22	17	24
G	85	26	NaN	12	33	27	25
C	NaN	18	NaN	NaN	28	23	28

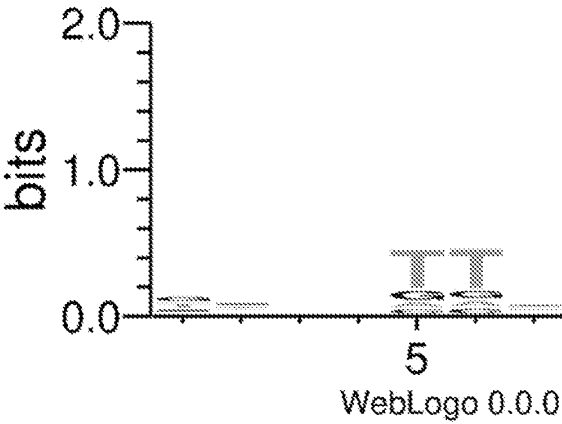
[图 10]



[图 11]

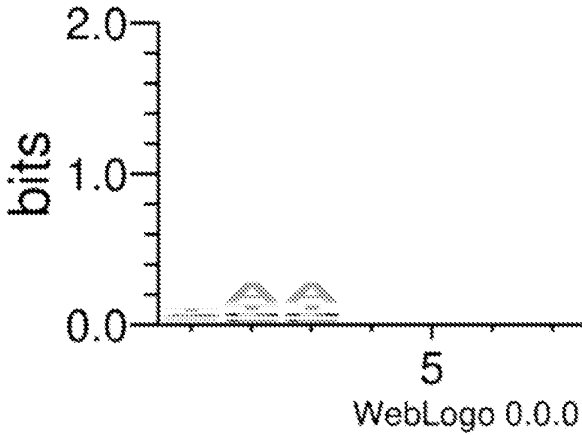


[图 12]



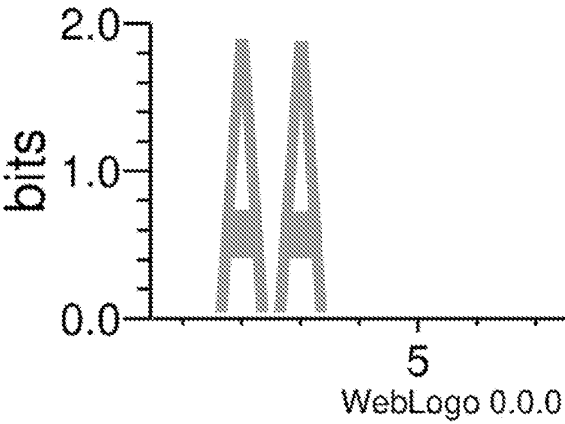
	N1	N2	N3	N4	N5	N6	N7
T	33	33	28	31	61	62	30
G	34	33	32	30	17	14	35
C	21	20	16	21	9	10	19
A	9	13	22	17	11	12	15

[图 13]



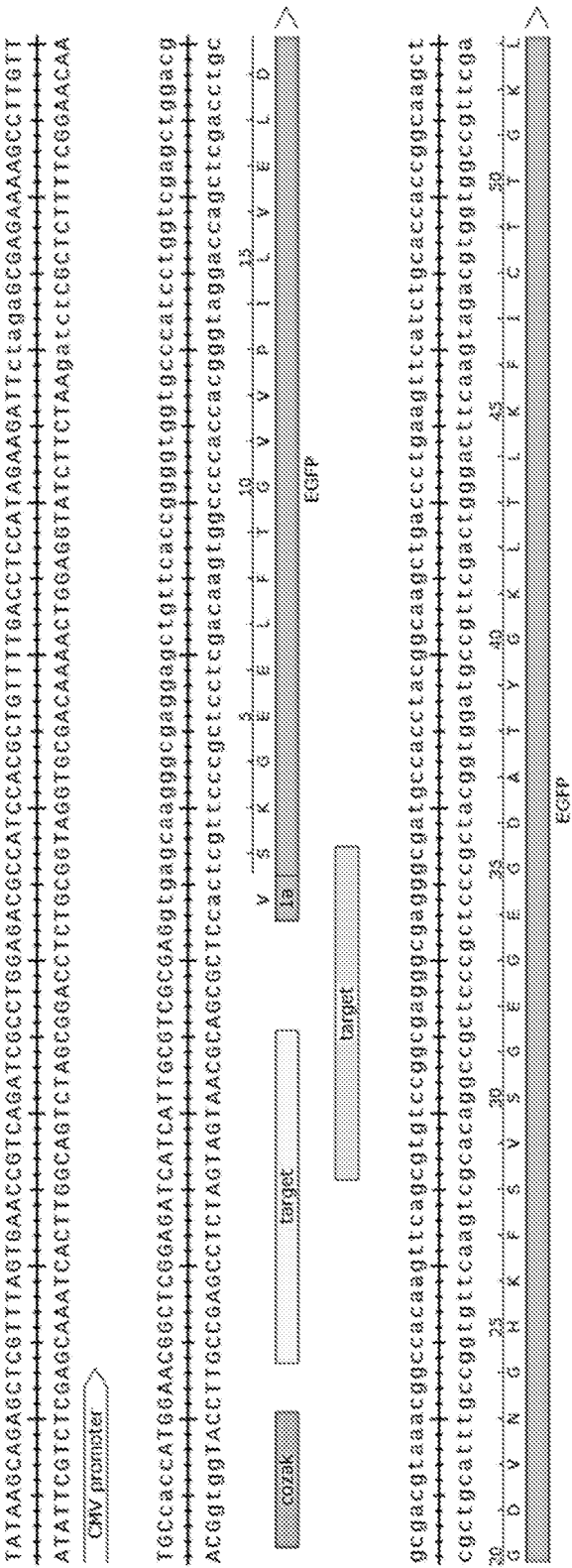
	N1	N2	N3	N4	N5	N6	N7
T	36	18	19	34	30	27	28
C	22	12	11	19	22	24	23
G	28	15	14	26	30	25	25
A	11	53	53	20	16	22	22

[图 14]

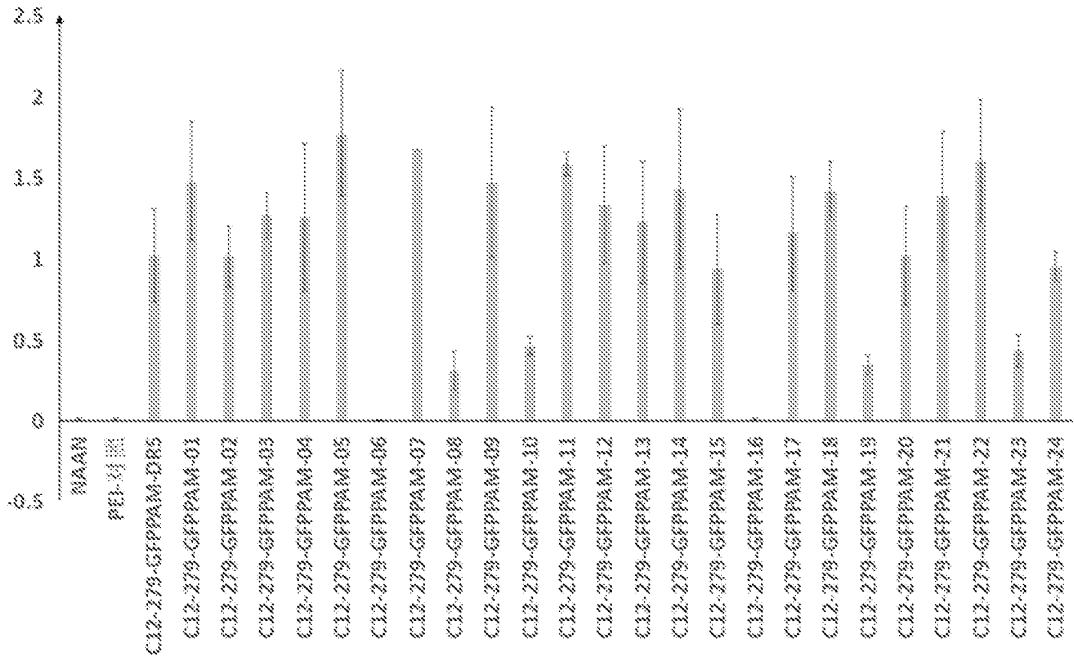


	N1	N2	N3	N4	N5	N6	N7
T	22	0	0	23	23	22	24
G	25	0	0	23	25	27	23
C	24	0	0	24	24	23	25
A	27	98	98	28	26	26	26

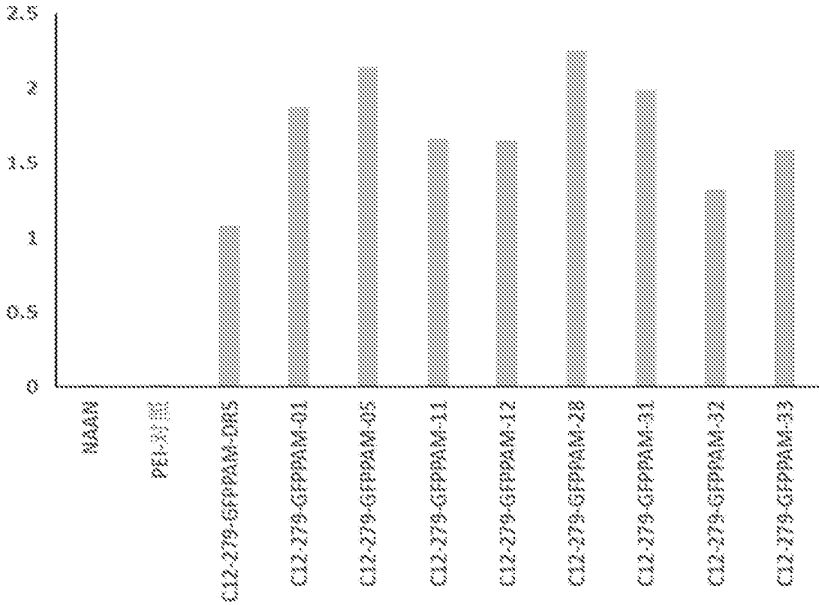
[图 15A]



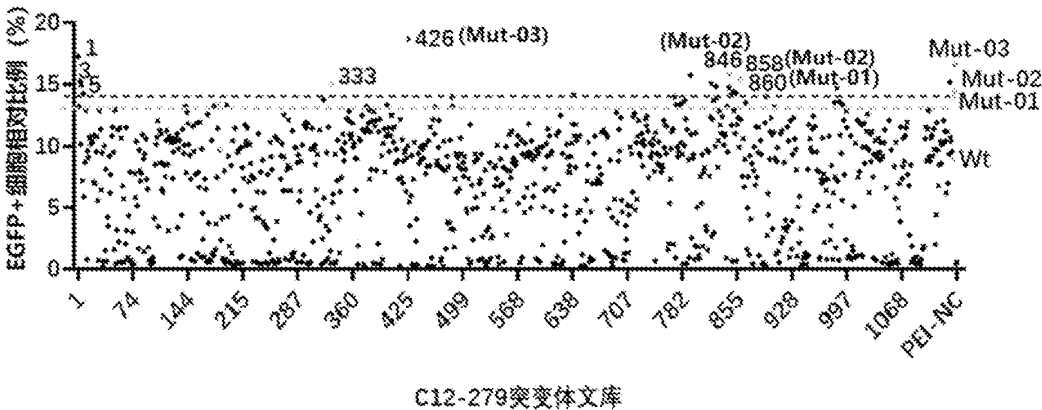
[图 16]



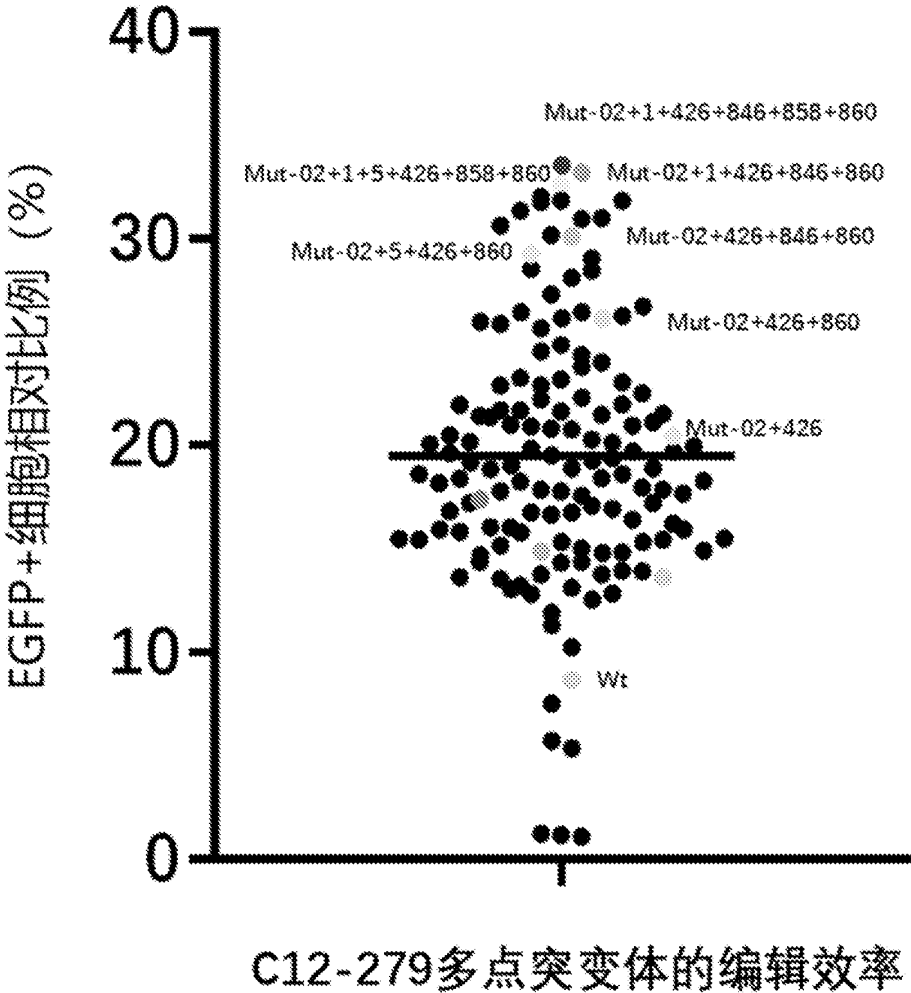
[图 17]



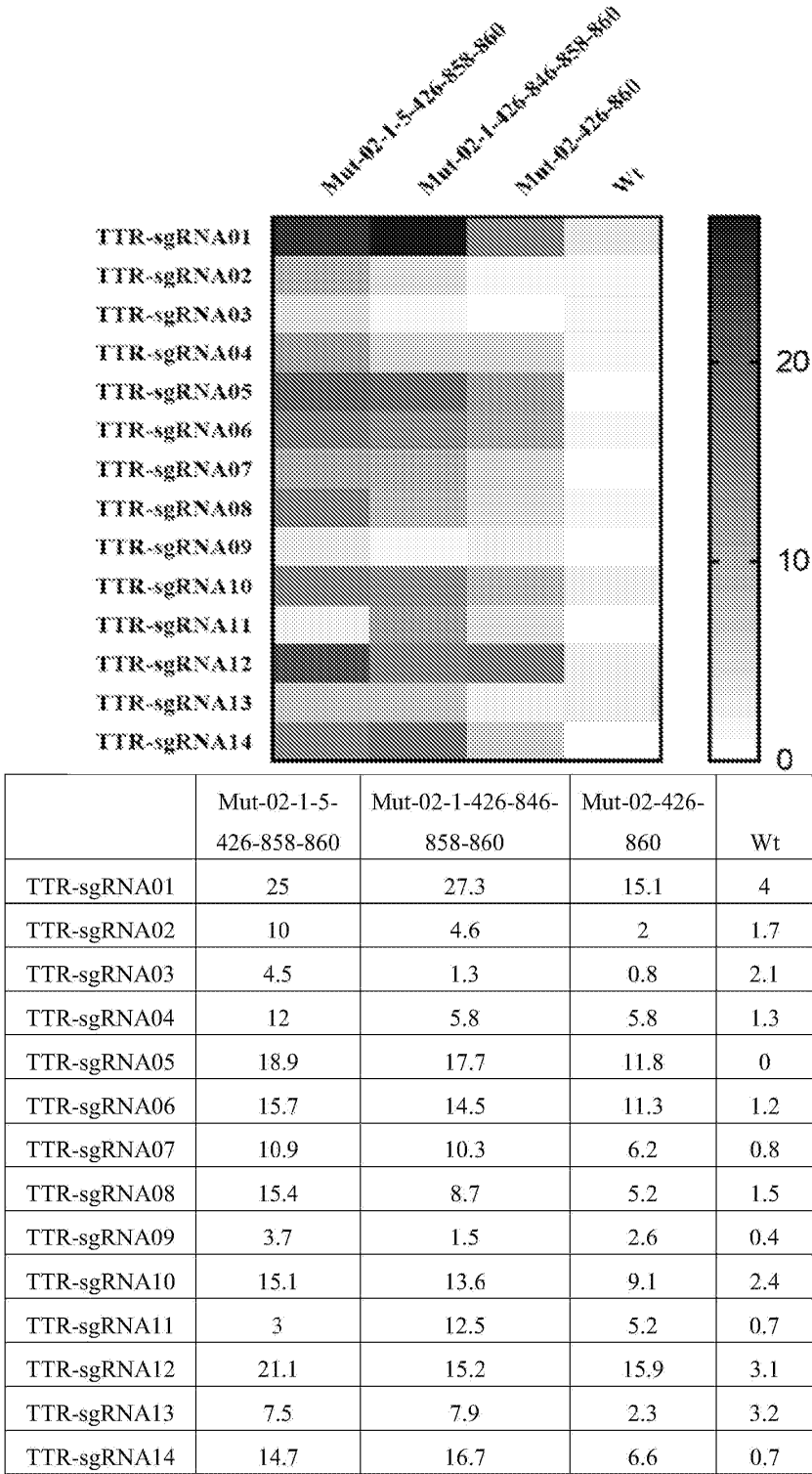
[图 18]



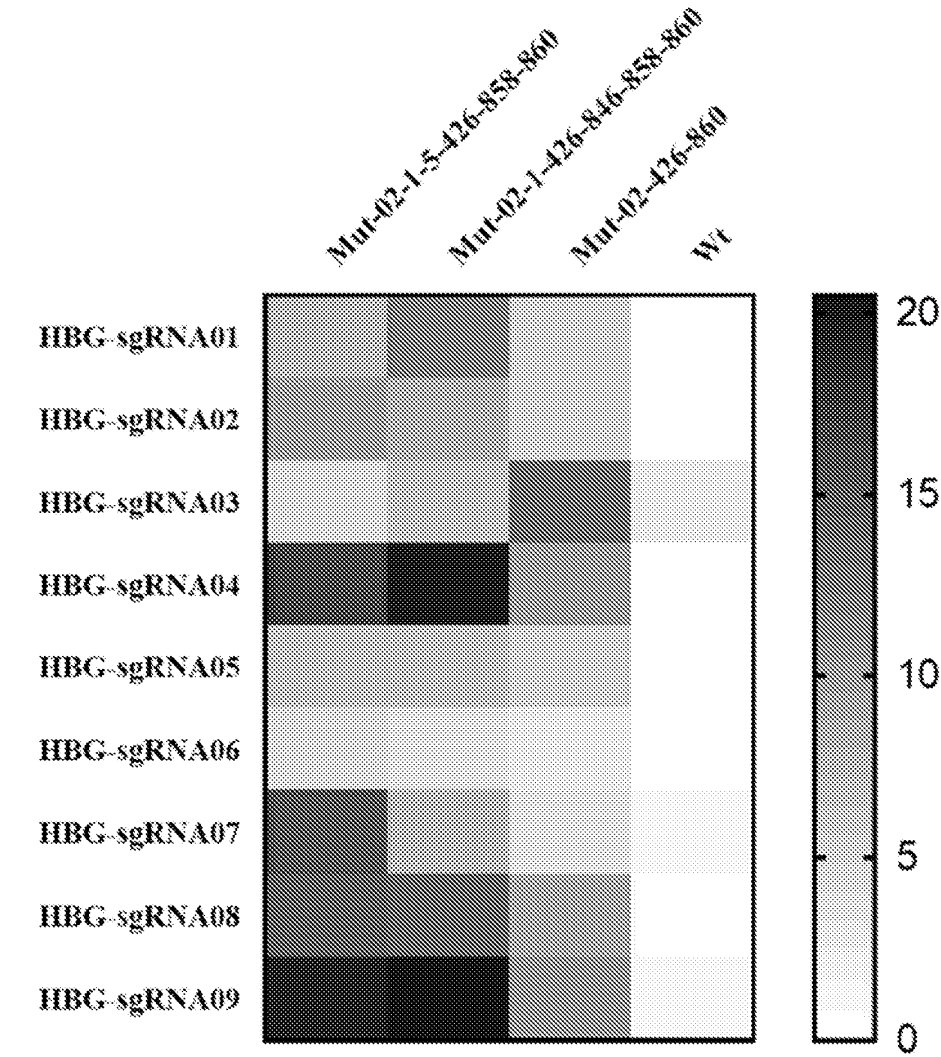
[图 19]



[图 20A]

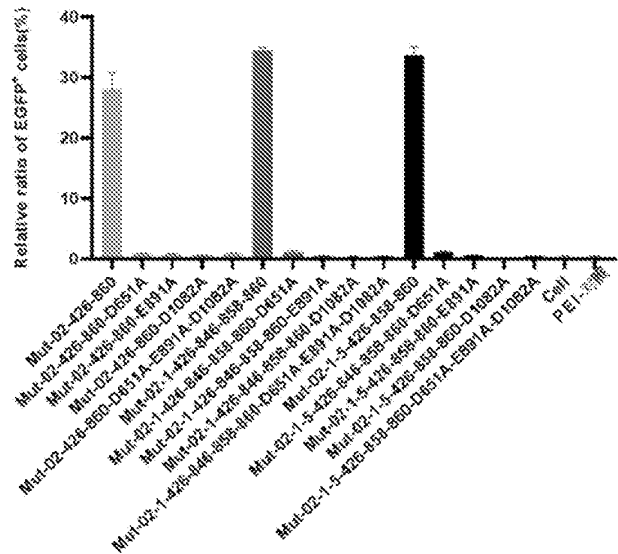


[图 20B]



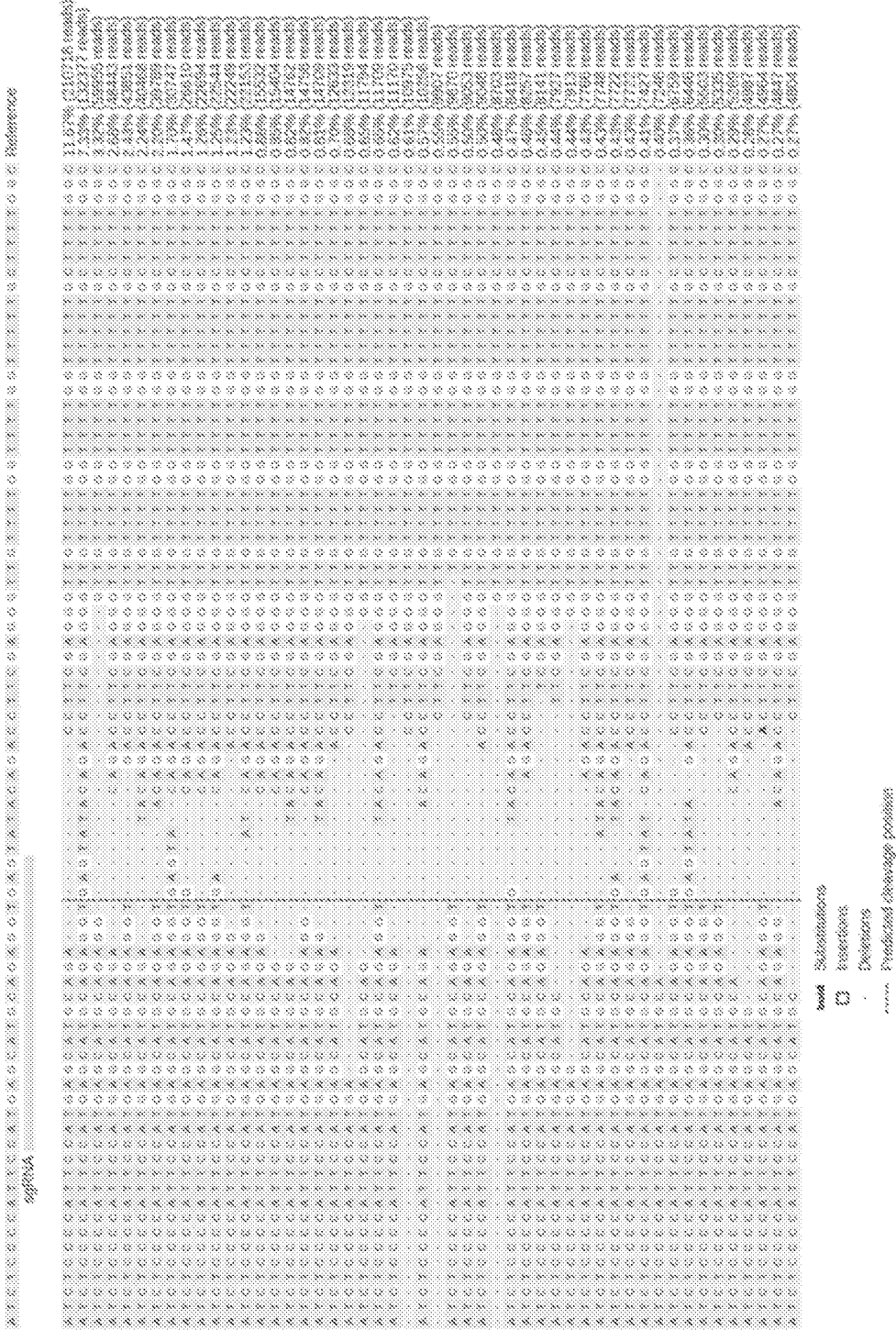
	Mut-02-1-5-426-858-860	Mut-02-1-426-846-858-860	Mut-02-426-860	Wt
HBG-sgRNA01	7.8	12.3	5.4	0
HBG-sgRNA02	9.5	8.1	5.3	0.3
HBG-sgRNA03	4.6	6.5	13.6	2.6
HBG-sgRNA04	17	20.1	10	0.4
HBG-sgRNA05	6.8	6.8	5.5	0
HBG-sgRNA06	4.4	3.7	2.6	0.3
HBG-sgRNA07	15.7	7.7	3.8	0.9
HBG-sgRNA08	14.6	14.1	8.9	0.7
HBG-sgRNA09	19.4	20.5	10.4	0.9

[图 21]

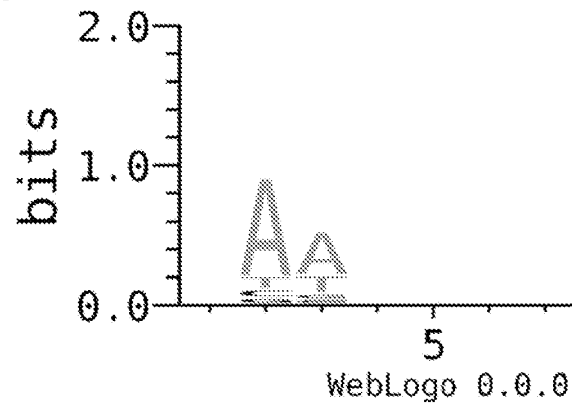


分组	编辑效率 (%)
Mut-02-426-860	28.09
Mut-02-426-860-D651A	0.87
Mut-02-426-860-E891A	0.73
Mut-02-426-860-D1082A	0.56
Mut-02-426-860-D651A-E891A-D1082A	0.89
Mut-02-1-426-846-858-860	34.40
Mut-02-1-426-846-858-860-D651A	1.14
Mut-02-1-426-846-858-860-E891A	0.51
Mut-02-1-426-846-858-860-D1082A	0.35
Mut-02-1-426-846-858-860-D651A-E891A-D1082A	0.41
Mut-02-1-5-426-858-860	33.69
Mut-02-1-5-426-846-858-860-D651A	1.11
Mut-02-1-5-426-858-860-E891A	0.54
Mut-02-1-5-426-858-860-D1082A	0.38
Mut-02-1-5-426-858-860-D651A-E891A-D1082A	0.45
Cell	0.35
PEI-对照	0.35

[图 22]



[图 23]



index	1	2	3	4	5	6	7
C	22	6	6	27	25	26	25
A	28	77	60	23	20	23	25
T	24	10	25	19	29	23	24
G	24	4	7	28	24	26	25

[图 24]

