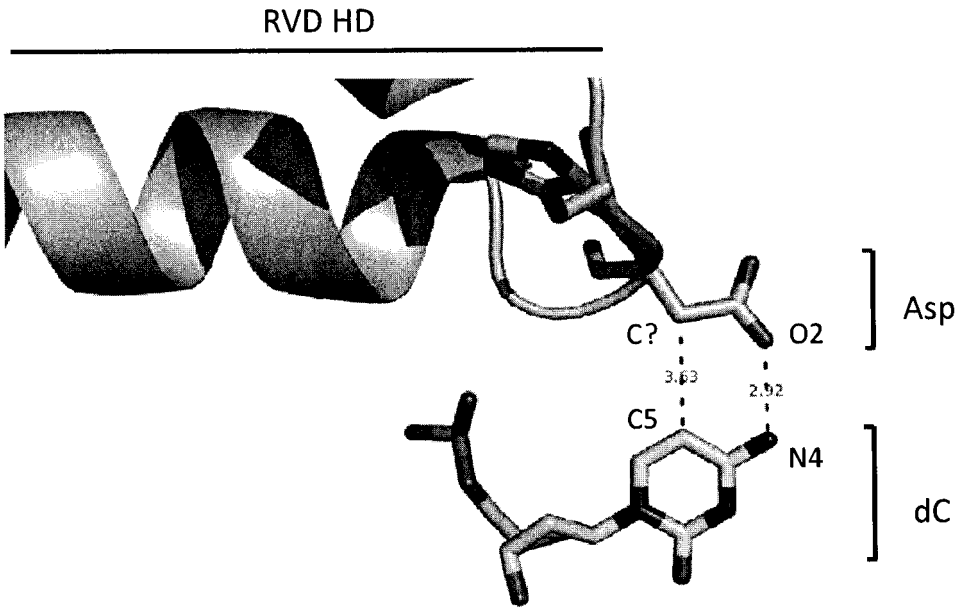


Figure 1

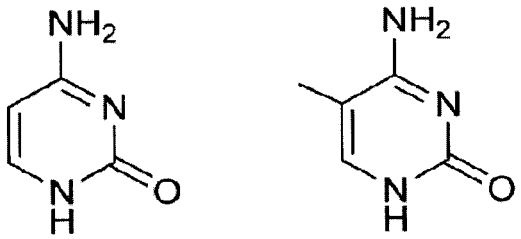


Figure 2

A

xpc1 locus

Left target Spacer

TC**CG**AGATGTCACACAG**AGGTACGACCC**AGTCTGGATGACAGTGA

AG**GC**ACTACAGTGTGTC**TCCATGCTGGG**TCAGACCTACTGTCACT

Right target

B

XPCT1L_HD
HD-HD-NN-NI-NN-NI-NG-NN-NG-HD-NI-HD-NI-HD-NI-NG#

XPCT1L_N*
HD-**N***-NN-NI-NN-NI-NG-NN-NG-HD-NI-HD-NI-HD-NI-NG#

XPCT1R
HD-NI-HD-NG-NN-NG-HD-NI-NG-HD-HD-NI-NN-NI-HD-NG#

Figure 3

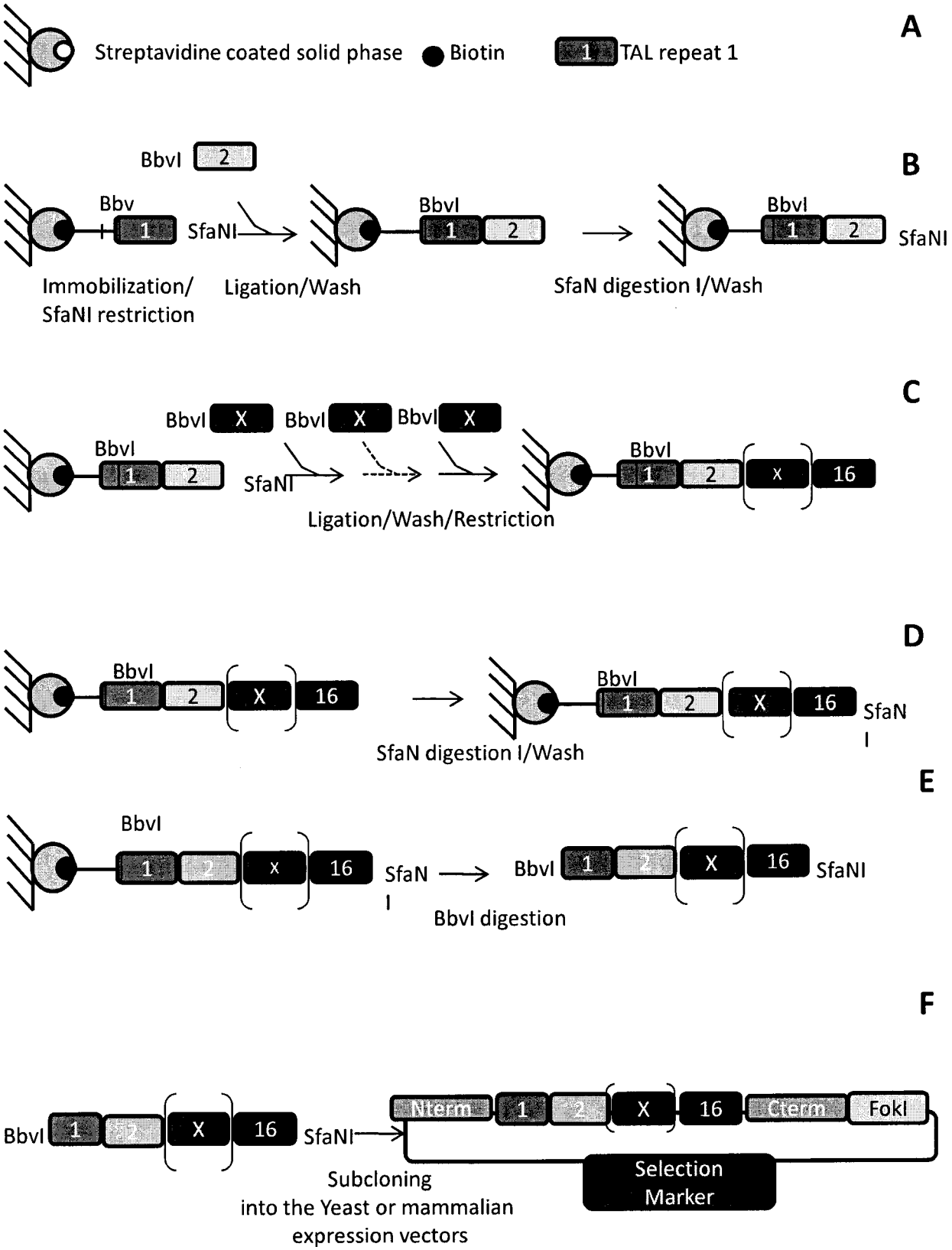

A
Streptavidine coated solid phase
Biotin
TAL repeat 1
B
BbvI
2
Bbv
1
SfaNI
Immobilization/
SfaNI restriction
BbvI
1
2
Ligation/Wash
BbvI
1
2
SfaNI
SfaN digestion I/Wash
C
BbvI
X
BbvI
X
BbvI
X
BbvI
1
2
SfaNI
Ligation/Wash/Restriction
BbvI
1
2
X
16
D
BbvI
1
2
X
16
SfaN digestion I/Wash
BbvI
1
2
X
16
SfaN
I
E
BbvI
1
2
X
16
SfaN
I
Bbvl digestion
BbvI
1
2
X
16
SfaNI
F
BbvI
1
2
X
16
SfaNI
Subcloning
into the Yeast or mammalian
expression vectors
Nterm
1
2
X
16
Cterm
FokI
Selection
Marker

Figure 4

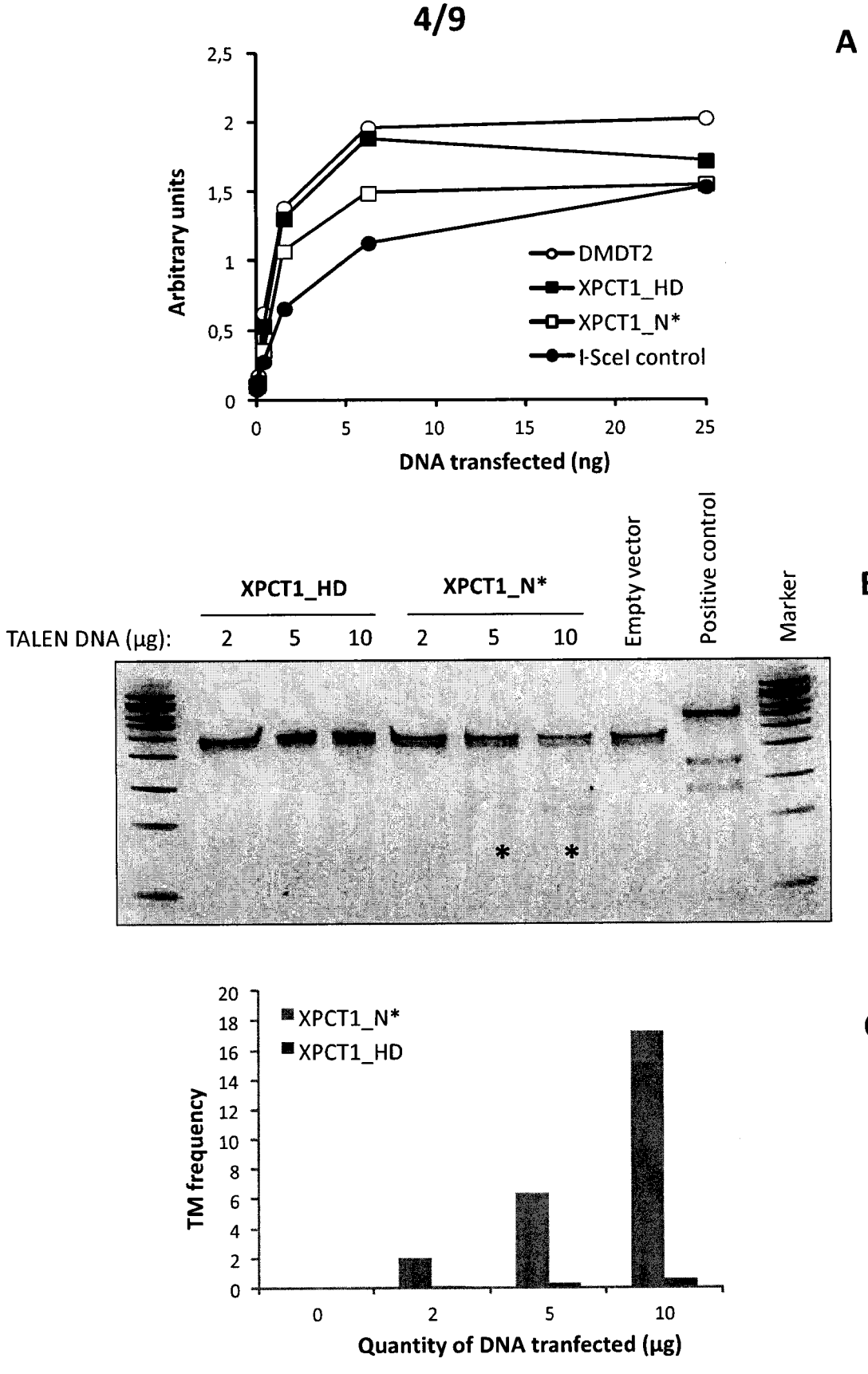
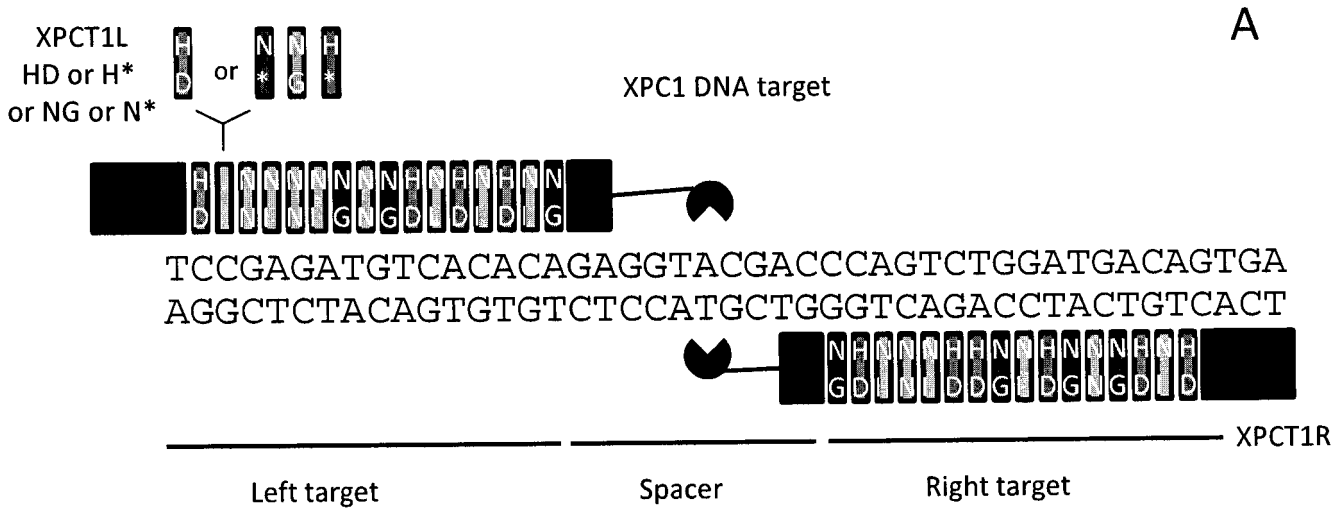

A
2,5
2
1,5
1
0,5
0
Arbitrary units
0
5
10
15
20
25
DNA transfected (ng)
DMDT2
XPCT1_HD
XPCT1_N*
I-SceI control
B
XPCT1_HD
XPCT1_N*
TALEN DNA (µg):
2
5
10
2
5
10
Empty vector
Positive control
Marker
*
*
C
20
18
16
14
12
10
8
6
4
2
0
TM frequency
XPCT1_N*
XPCT1_HD
0
2
5
10
Quantity of DNA tranfected (µg)

Figure 5


A
XPCT1L
HD or H*
or NG or N*
or
XPC1 DNA target
TCCGAGATGTCACACAGAGGTACGACCCAGTCTGGATGACAGTGA
AGGCTCTACAGTGTGTCTCCATGCTGGGTCAGACCTACTGTCACT
XPCT1R
Left target
Spacer
Right target

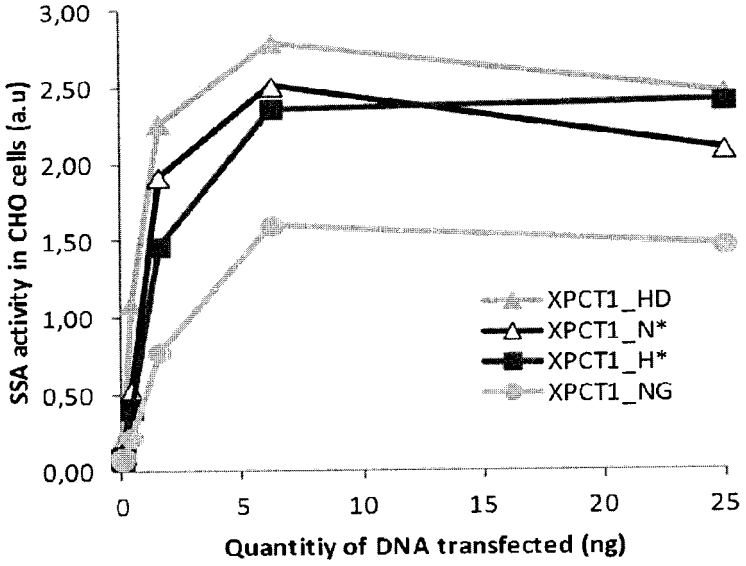
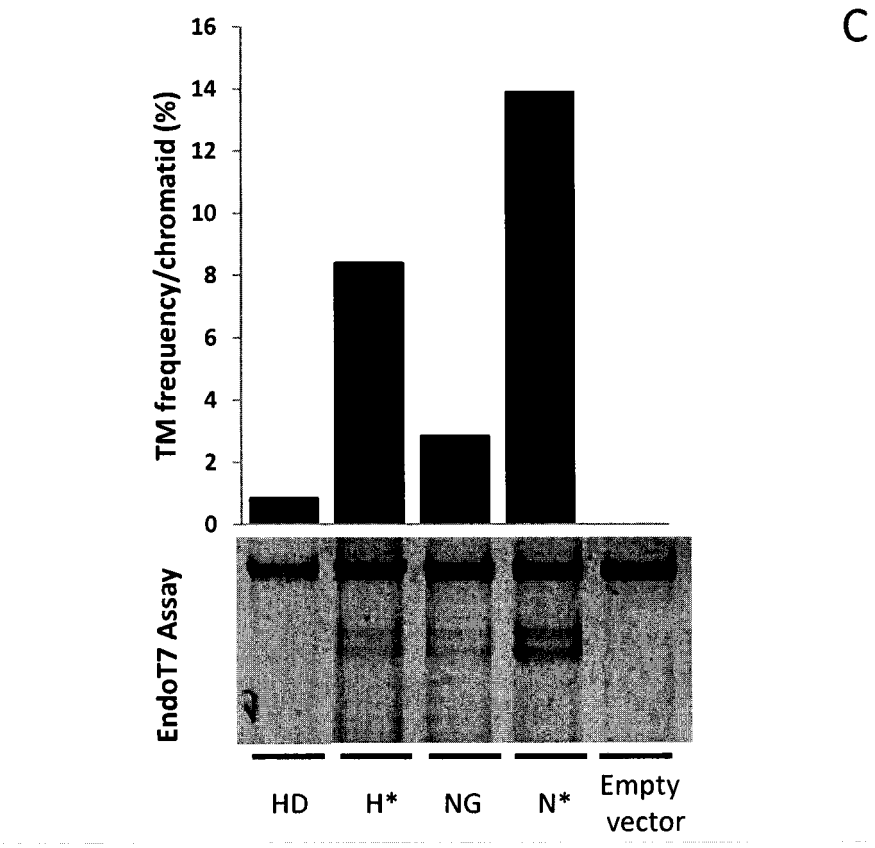

B
SSA activity in CHO cells (a.u)
3,00
2,50
2,00
1,50
1,00
0,50
0,00
0
5
10
15
20
25
Quantitiy of DNA transfected (ng)
XPCT1_HD
XPCT1_N*
XPCT1_H*
XPCT1_NG

Figure 6


C
TM frequency/chromatid (%)
16
14
12
10
8
6
4
2
0
EndoT7 Assay
HD
H*
NG
N*
Empty vector

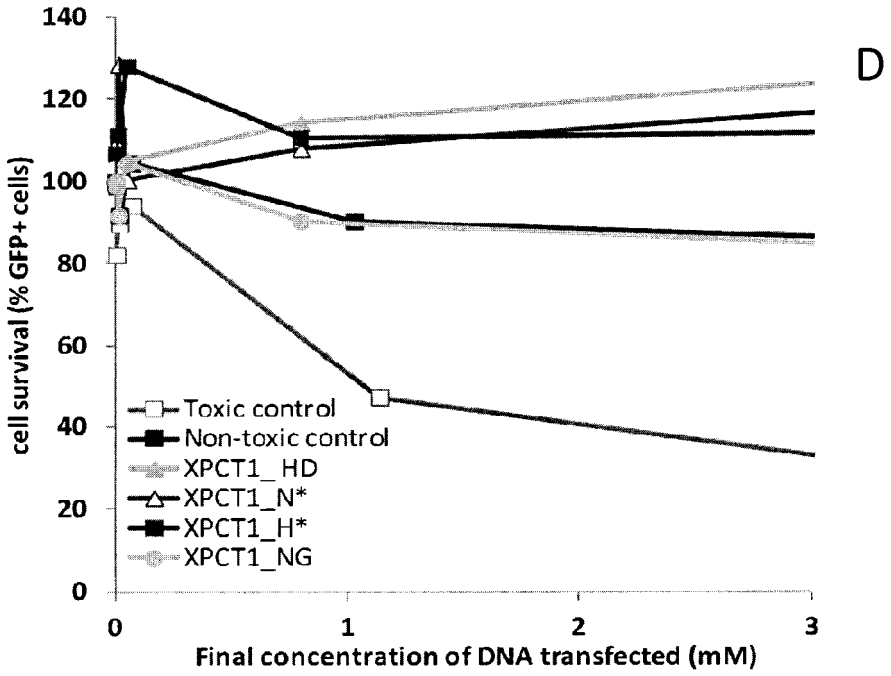

D
cell survival (% GFP+ cells)
140
120
100
80
60
40
20
0
Toxic control
Non-toxic control
XPCT1_ HD
XPCT1_N*
XPCT1_H*
XPCT1_NG
0
1
2
3
Final concentration of DNA transfected (mM)

Figure 6

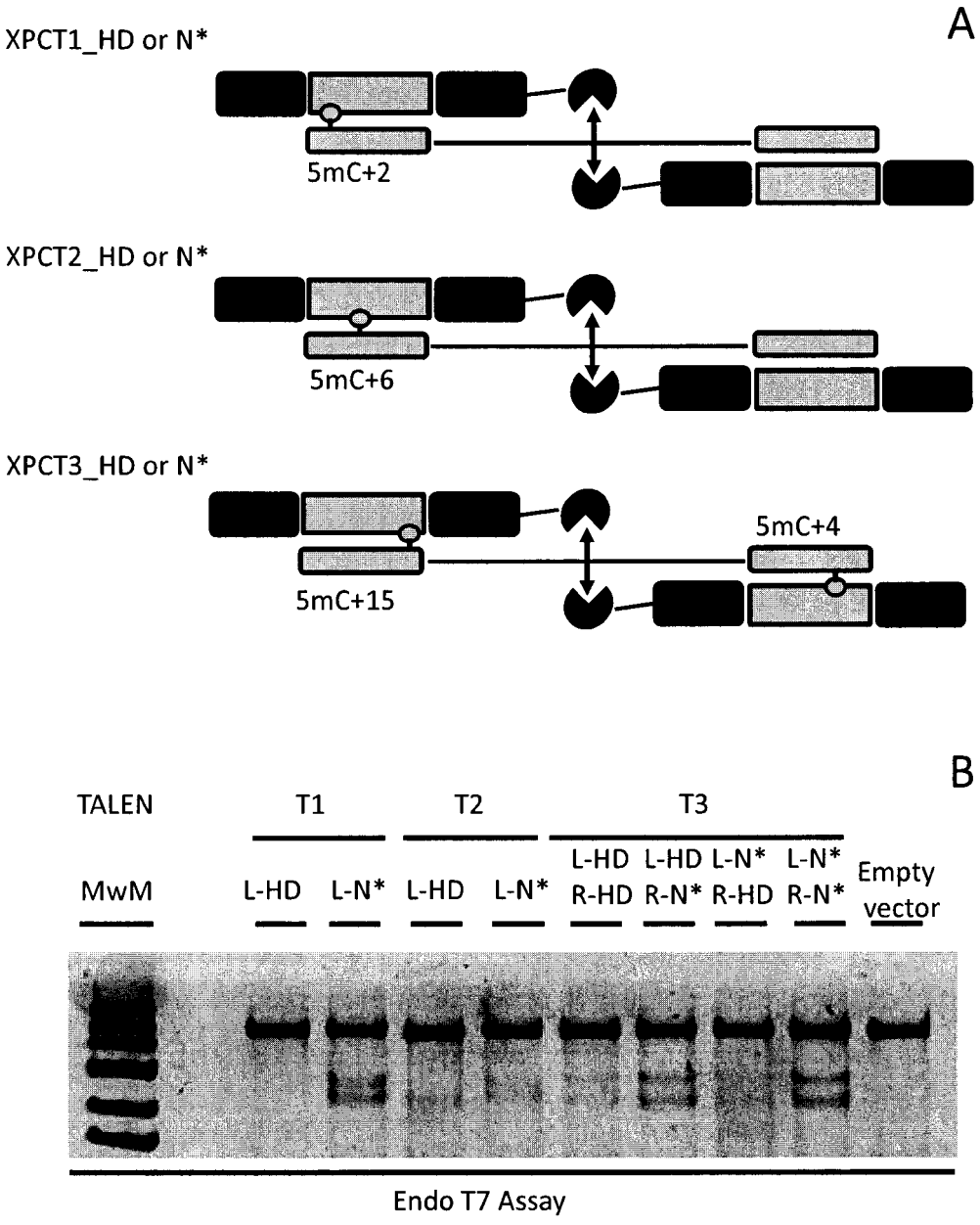

A
XPCT1_HD or N*
5mC+2
XPCT2_HD or N*
5mC+6
XPCT3_HD or N*
5mC+4
5mC+15
B
TALEN
T1
T2
T3
MwM
L-HD
L-N*
L-HD
L-N*
L-HD R-HD
L-HD R-N*
L-N* R-HD
L-N* R-N*
Empty vector
Endo T7 Assay

Figure 7

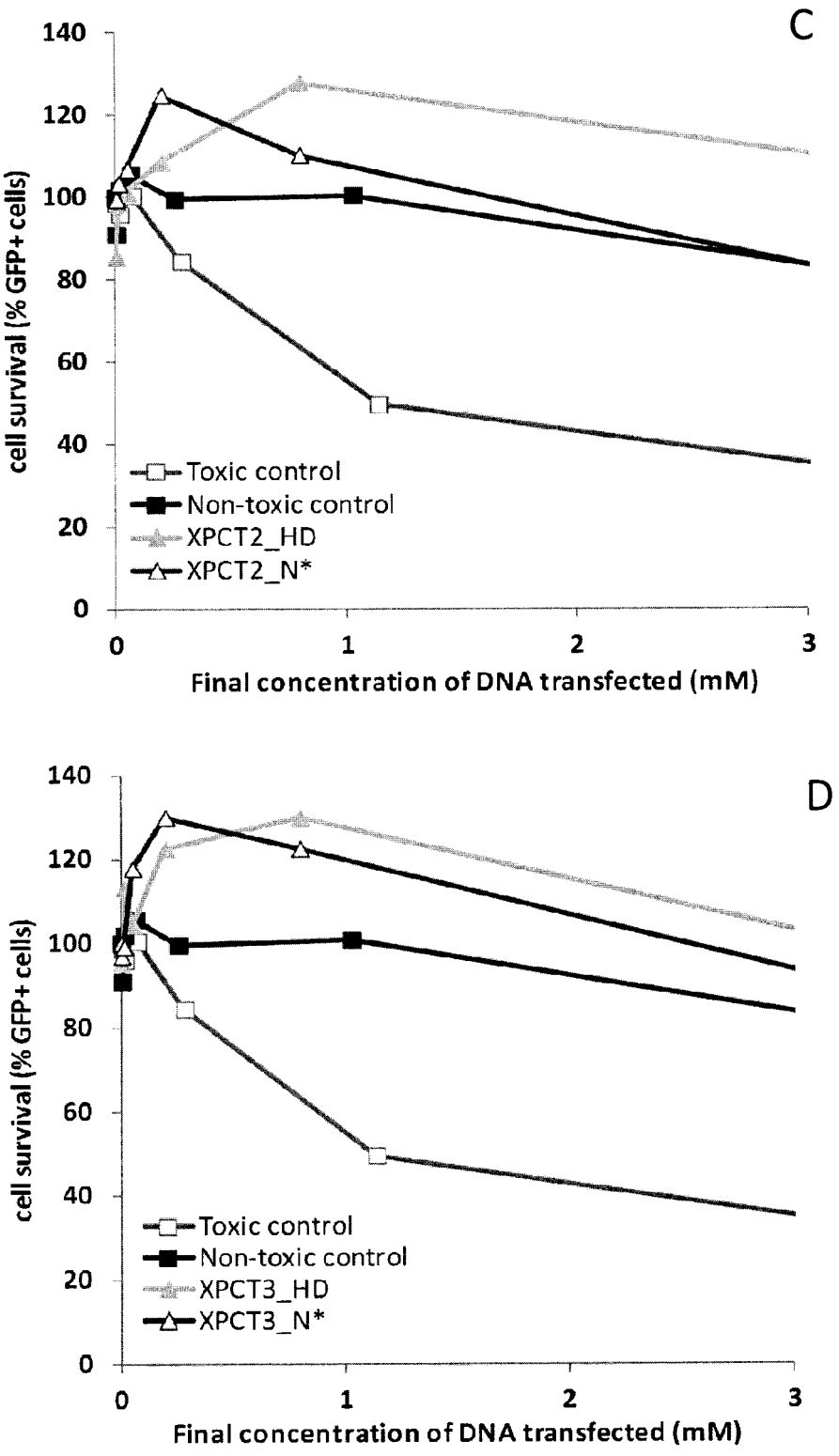

C
140
120
100
80
60
40
20
0
cell survival (% GFP+ cells)
Toxic control
Non-toxic control
XPCT2_HD
XPCT2_N*
0
1
2
3
Final concentration of DNA transfected (mM)
D
140
120
100
80
60
40
20
0
cell survival (% GFP+ cells)
Toxic control
Non-toxic control
XPCT3_HD
XPCT3_N*
0
1
2
3
Final concentration of DNA transfected (mM)

Figure 7

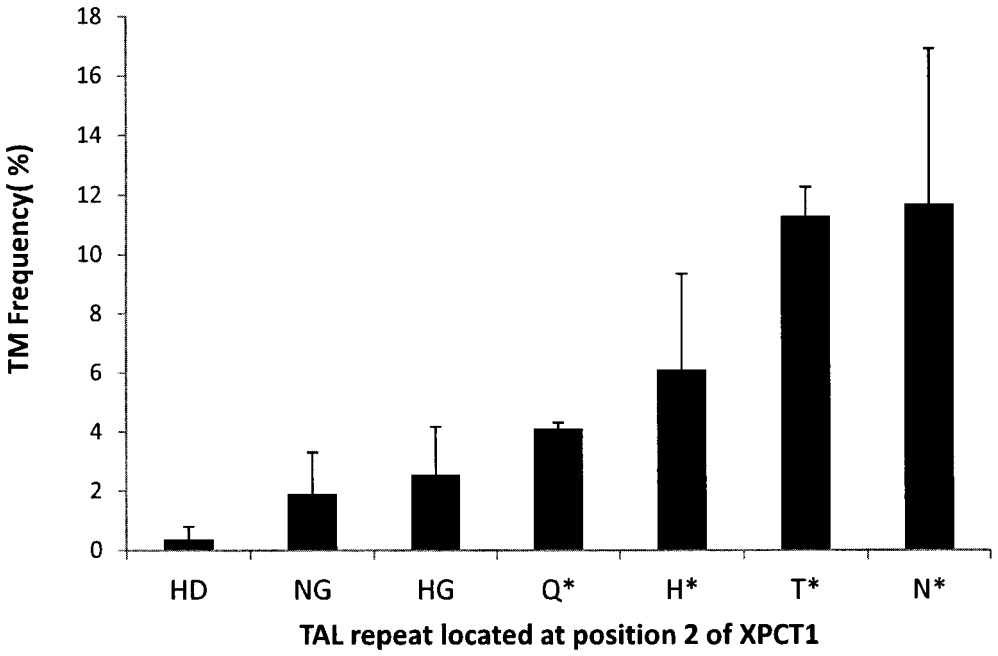

18
16
14
12
10
8
6
4
2
0
TM Frequency(%)
HD
NG
HG
Q*
H*
T*
N*
TAL repeat located at position 2 of XPCT1

Figure 8