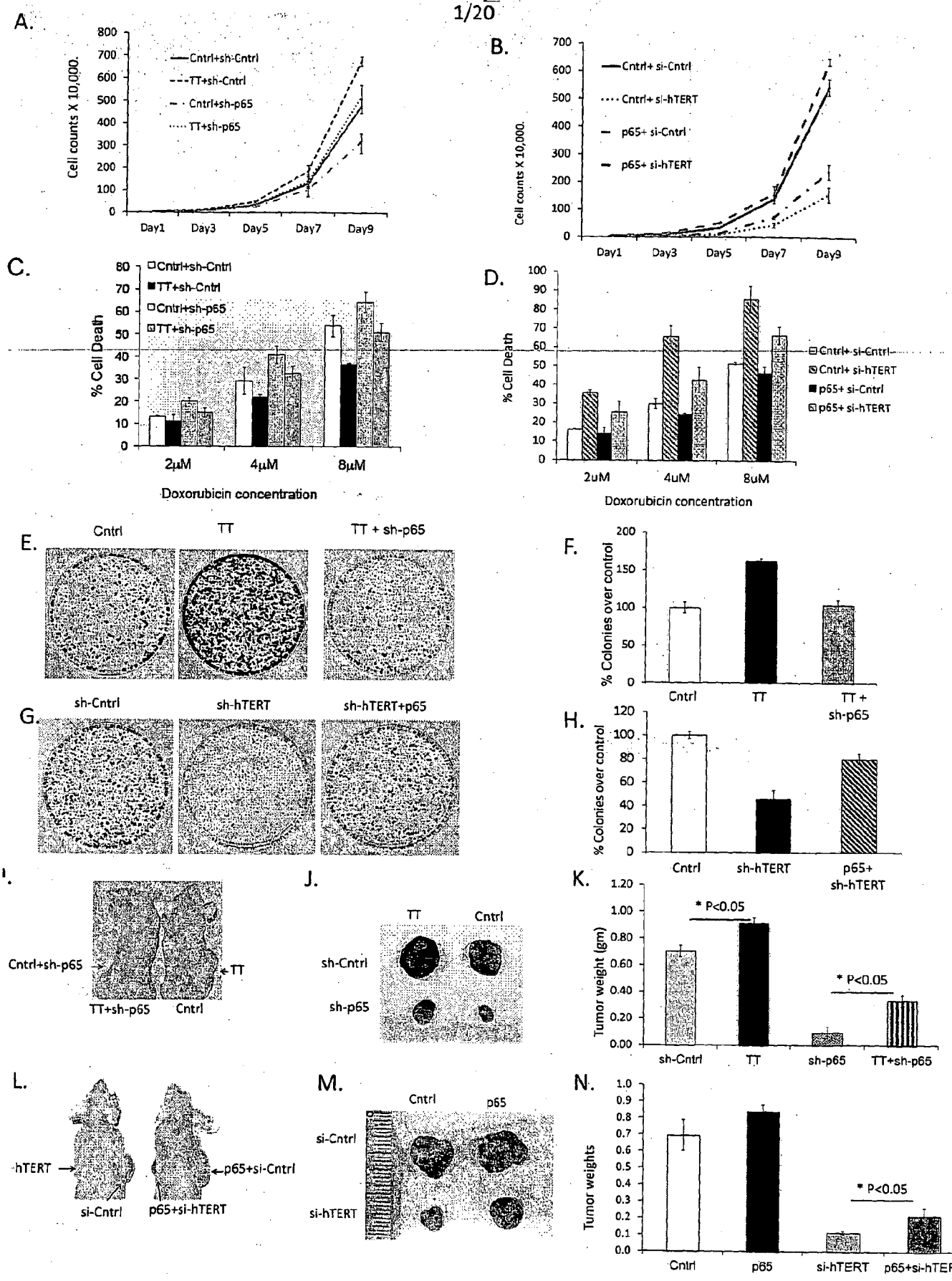
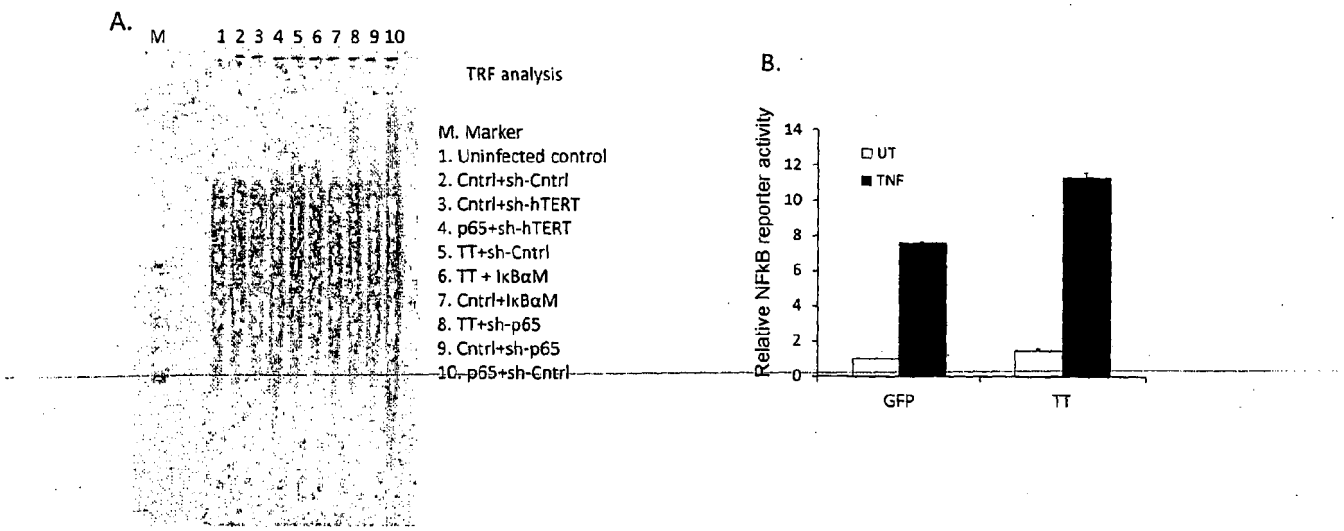
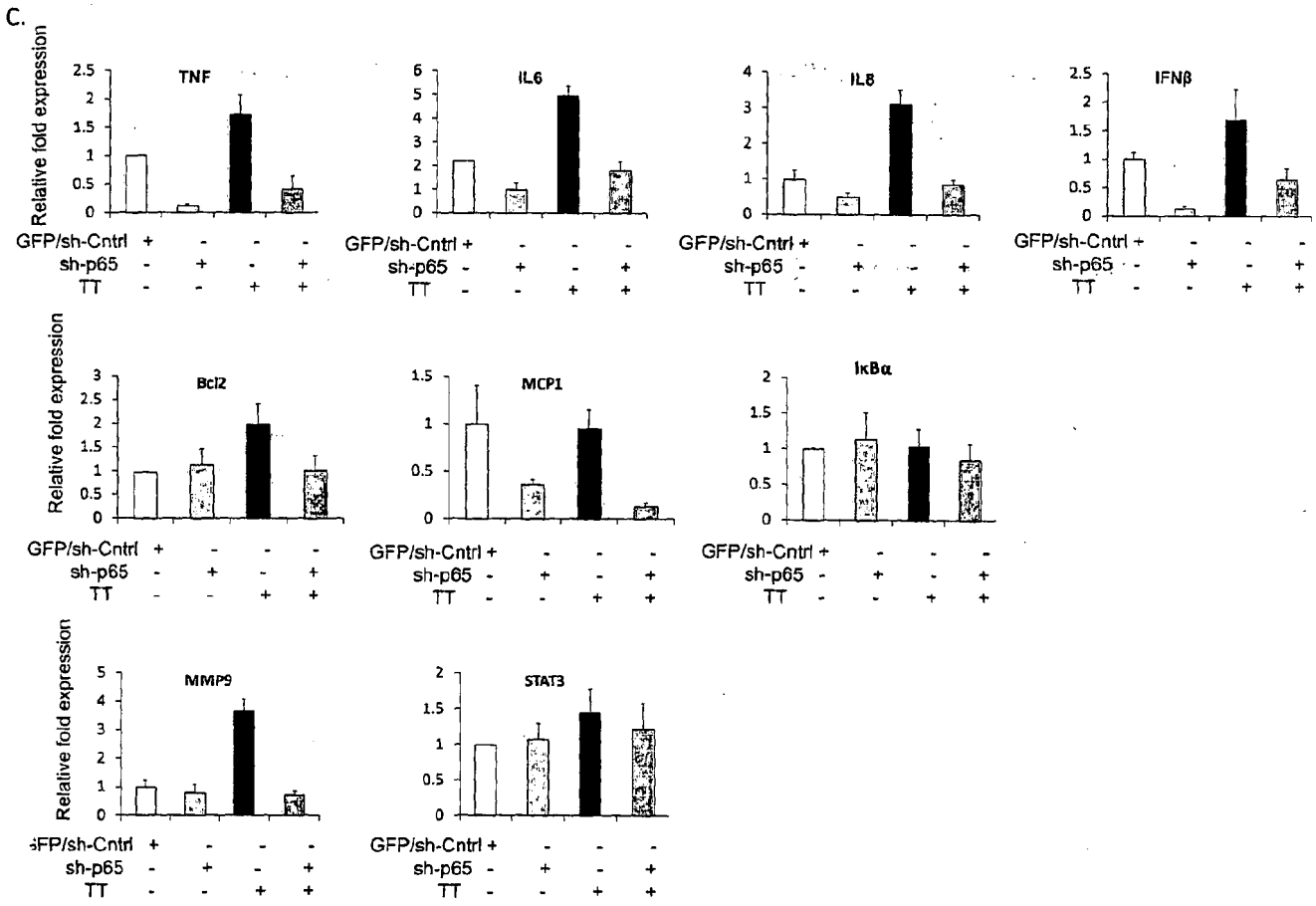
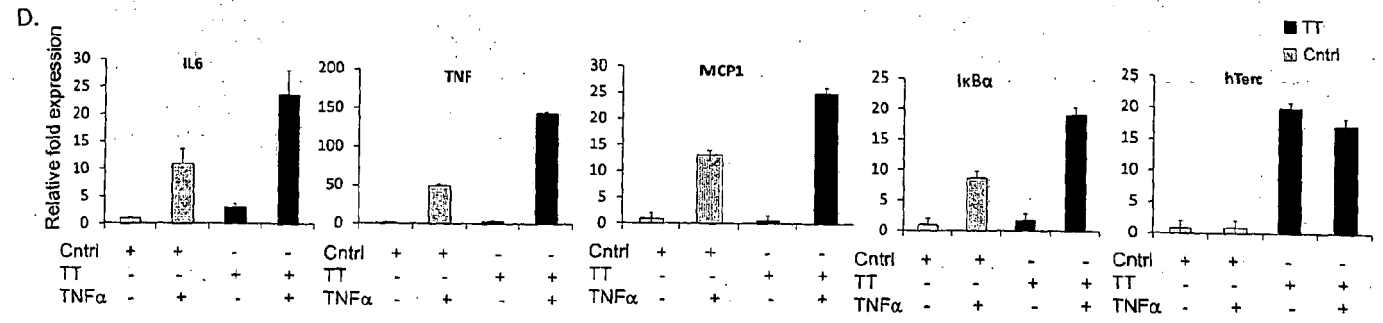
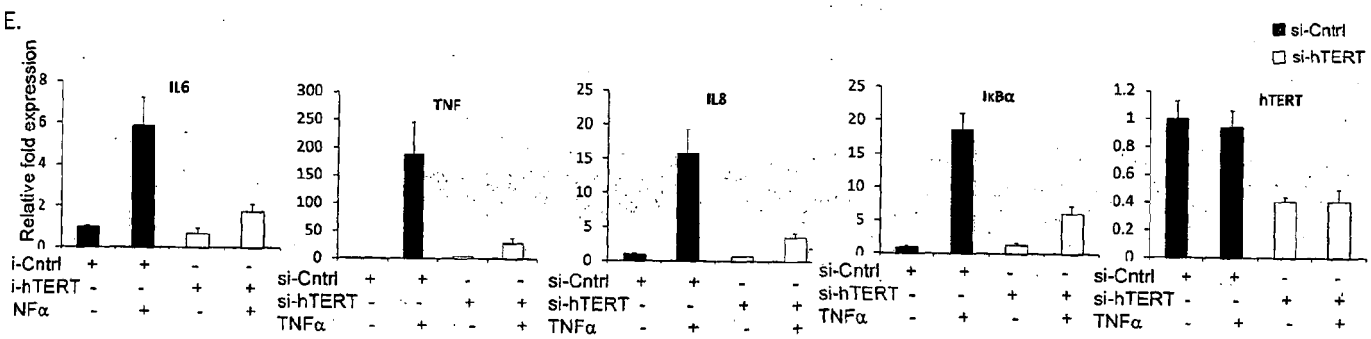
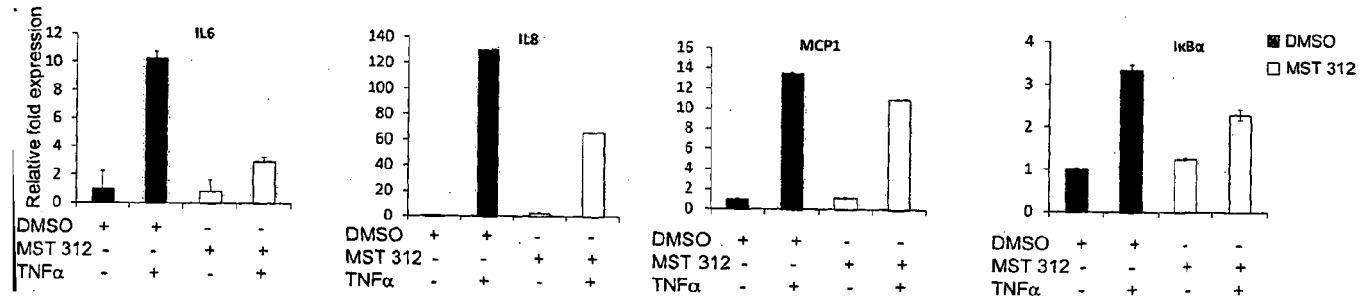

A.
Cell counts X 10,000.
Cntrl+sh-Cntrl
TT+sh-Cntrl
Cntrl+sh-p65
TT+sh-p65
Day1
Day3
Day5
Day7
Day9
B.
Cell counts X 10,000.
Cntrl+ si-Cntrl
Cntrl+ si-hTERT
p65+ si-Cntrl
p65+ si-hTERT
C.
% Cell Death
2μM
4μM
8μM
Doxorubicin concentration
D.
% Cell Death
Doxorubicin concentration
E.
Cntrl
TT
TT + sh-p65
F.
% Colonies over control
G.
sh-Cntrl
sh-hTERT
sh-hTERT+p65
H.
% Colonies over control
sh-hTERT
p65+ sh-hTERT
I.
Cntrl+sh-p65
TT
TT+sh-p65
J.
TT
Cntrl
sh-Cntrl
sh-p65
K.
Tumor weight (gm)
* P<0.05
* P<0.05
L.
hTERT
p65+si-Cntrl
si-Cntrl
p65+si-hTERT
M.
Cntrl
p65
si-Cntrl
si-hTERT
N.
Tumor weights
* P<0.05
Cntrl
p65
si-hTERT
p65+si-hTERT

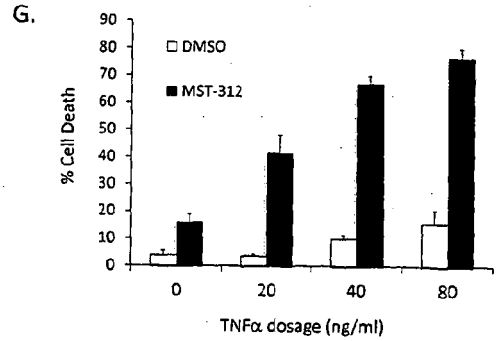

A.
M
1 2 3 4 5 6 7 8 9 10
TRF analysis
M. Marker
1. Uninfected control
2. Cntrl+sh-Cntrl
3. Cntrl+sh-hTERT
4. p65+sh-hTERT
5. TT+sh-Cntrl
6. TT + IκBαM
7. Cntrl+IκBαM
8. TT+sh-p65
9. Cntrl+sh-p65
10. p65+sh-Cntrl
B.
Relative NFkB reporter activity
UT
TNF
GFP
TT

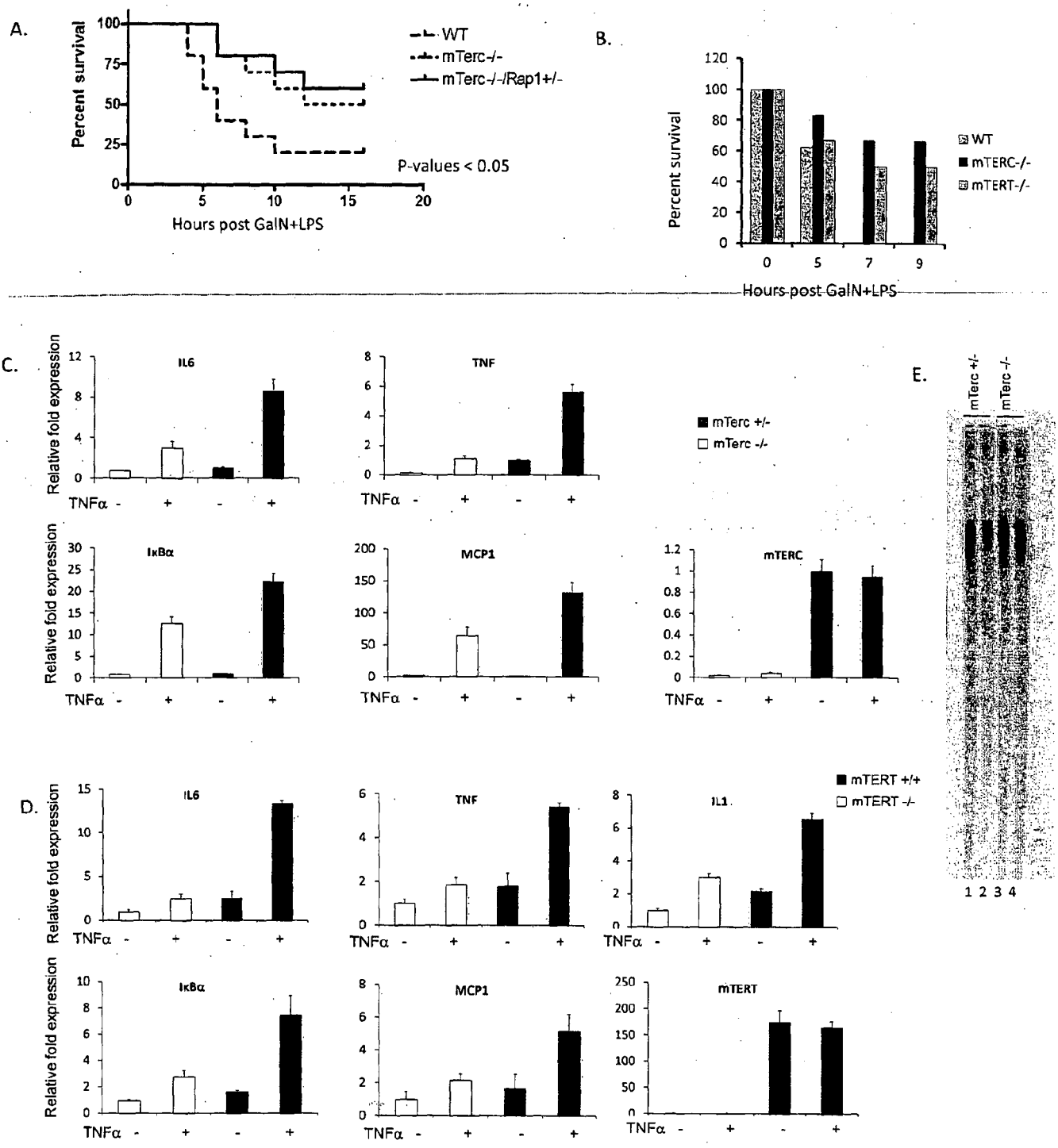

C.
Relative fold expression
TNF
IL6
IL8
IFNβ
Bcl2
MCP1
IκBα
MMP9
STAT3
GFP/sh-Cntrl
sh-p65
TT

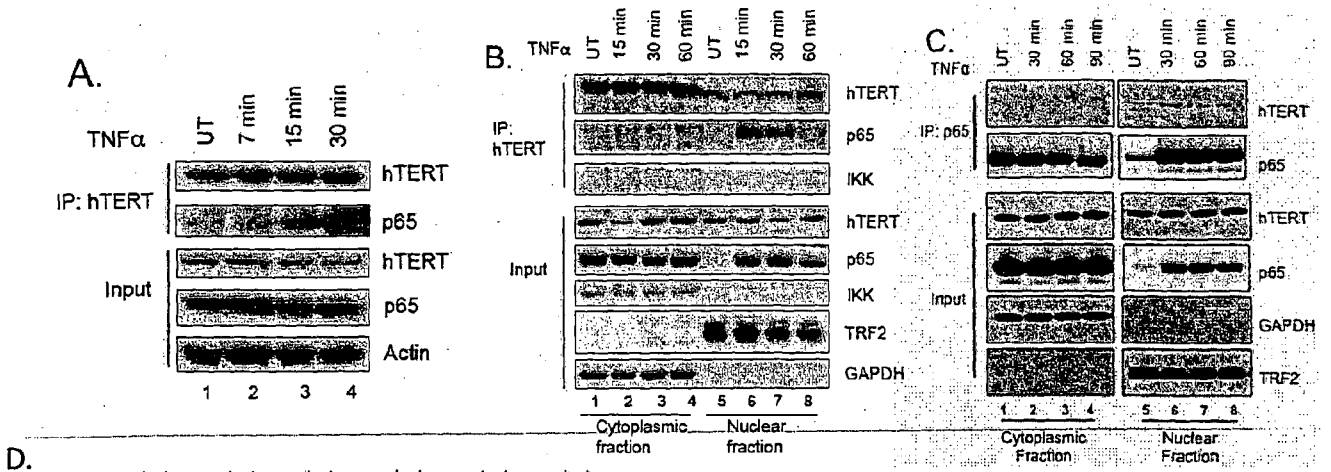

D.
Relative fold expression
IL6
TNF
MCP1
IκBα
hTerc
TT
Cntrl
Cntrl
TT
TNFα

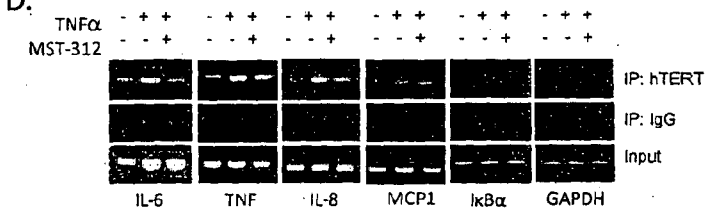

E.
Relative fold expression
IL6
TNF
IL8
IκBα
hTERT
si-Cntrl
si-hTERT
i-Cntrl
i-hTERT
NFα
si-Cntrl
si-hTERT
TNFα

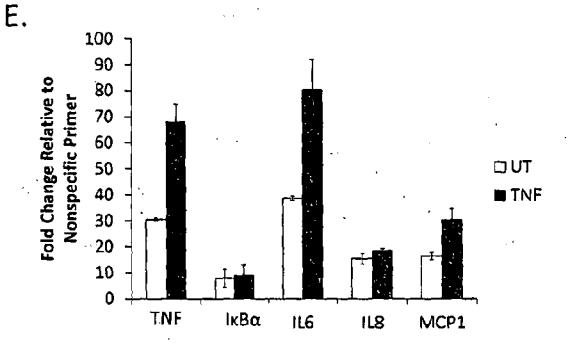

Relative fold expression
IL6
IL8
MCP1
IκBα
DMSO
MST 312
DMSO
MST 312
TNFα

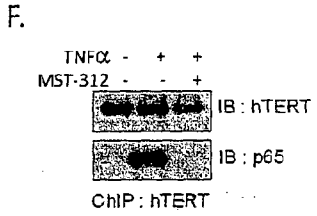

G.
% Cell Death
DMSO
MST-312
TNFα dosage (ng/ml)

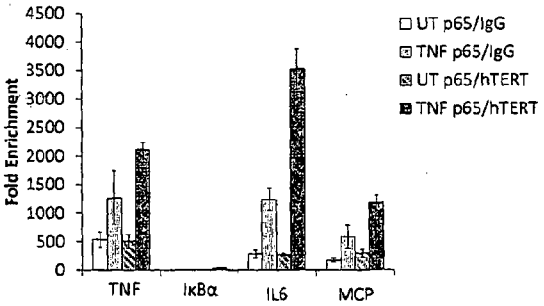

A.
Percent survival
100
75
50
25
0
0
5
10
15
20
Hours post GalN+LPS
WT
mTerc-/-
mTerc-/-/Rap1+/-
P-values < 0.05
B.
Percent survival
120
100
80
60
40
20
0
0
5
7
9
Hours post GalN+LPS
WT
mTERC-/-
mTERT-/-
C.
IL6
TNF
IκBα
MCP1
mTERC
Relative fold expression
TNFα - + - +
mTerc +/-
mTerc -/-
D.
IL6
TNF
IL1
IκBα
MCP1
mTERT
Relative fold expression
TNFα - + - +
mTERT +/+
mTERT -/-
E.
mTerc +/-
mTerc -/-
1 2 3 4

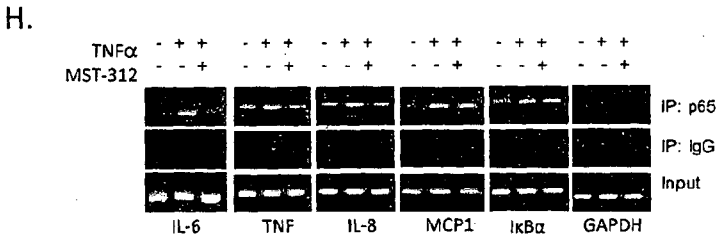

A.
TNFα
UT
7 min
15 min
30 min
IP: hTERT
hTERT
p65
Input
hTERT
p65
Actin
1 2 3 4
B.
TNFα
UT
15 min
30 min
60 min
IP: hTERT
hTERT
p65
IKK
Input
hTERT
p65
IKK
TRF2
GAPDH
1 2 3 4 5 6 7 8
Cytoplasmic fraction
Nuclear fraction
C.
TNFα
UT
30 min
60 min
90 min
IP: p65
hTERT
p65
Input
hTERT
p65
GAPDH
TRF2
1 2 3 4 5 6 7 8
Cytoplasmic Fraction
Nuclear Fraction

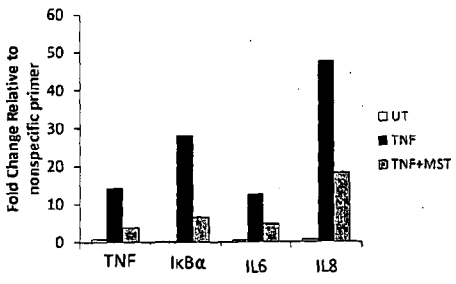

D.
TNFα
MST-312
IP: hTERT
IP: IgG
Input
IL-6
TNF
IL-8
MCP1
IκBα
GAPDH

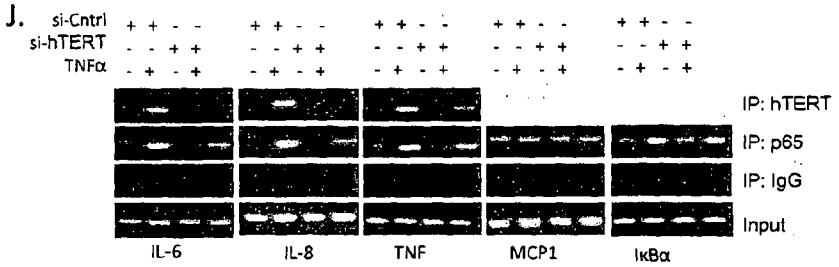

E.
Fold Change Relative to Nonspecific Primer
100
90
80
70
60
50
40
30
20
10
0
UT
TNF
TNF
IκBα
IL6
IL8
MCP1


F.
TNFα
MST-312
IB : hTERT
IB : p65
ChIP : hTERT

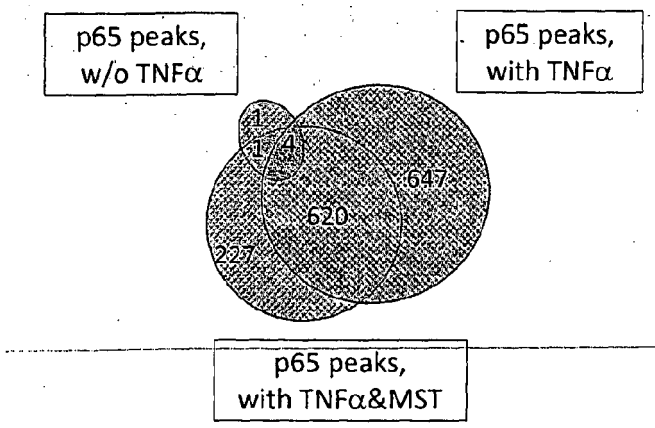

G.
Fold Enrichment
4500
4000
3500
3000
2500
2000
1500
1000
500
0
UT p65/IgG
TNF p65/IgG
UT p65/hTERT
TNF p65/hTERT
TNF
IκBα
IL6
MCP


H.
TNFα
MST-312
IP: p65
IP: IgG
Input
IL-6
TNF
IL-8
MCP1
IκBα
GAPDH

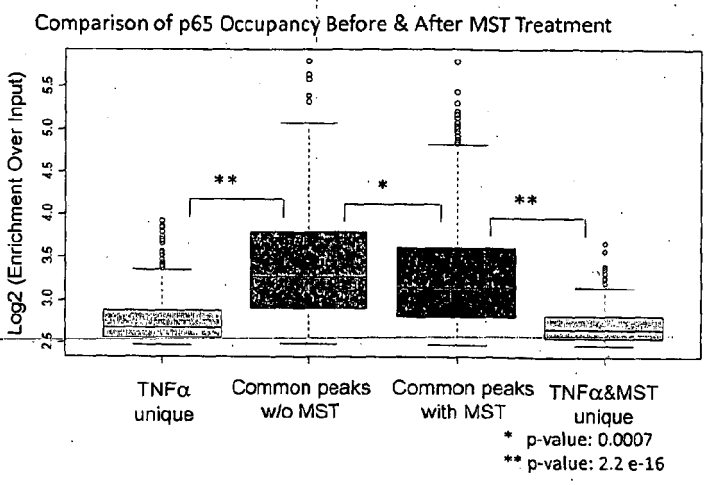

Fold Change Relative to nonspecific primer
60
50
40
30
20
10
0
UT
TNF
TNF+MST
TNF
IκBα
IL6
IL8


J.
si-Cntrl
si-hTERT
TNFα
IP: hTERT
IP: p65
IP: IgG
Input
IL-6
IL-8
TNF
MCP1
IκBα

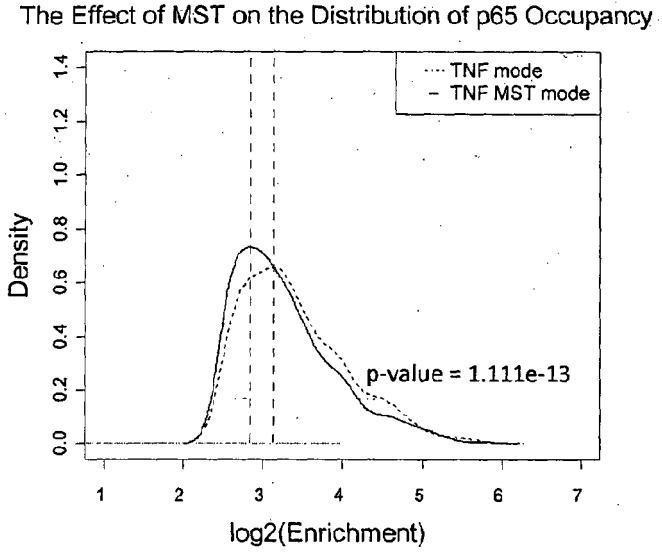
A



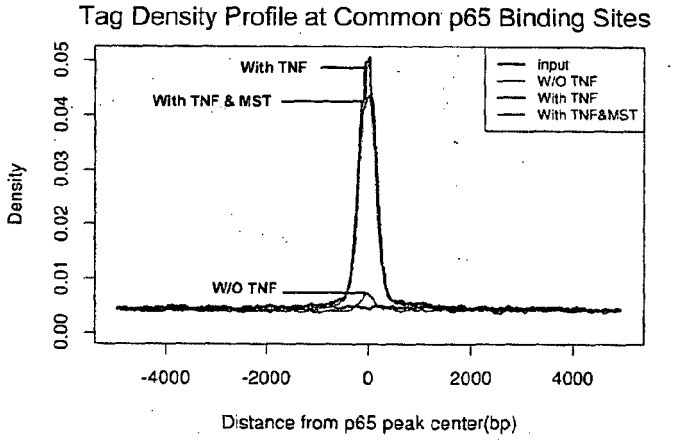
B

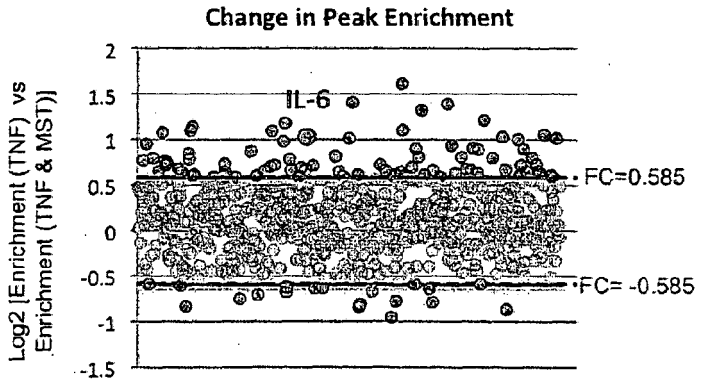


C



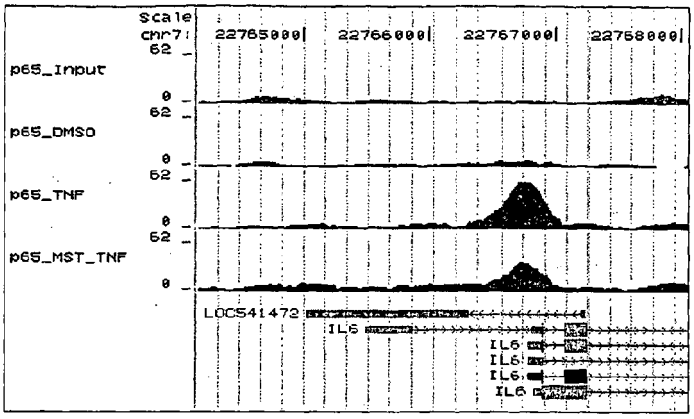
D





Number of Peaks	Percentage	Range of log2[Fold Change]
85	13.6	0.587 - 1.616
520	83.4	-0.576 - 0.574
19	3.04	-0.588 - -0.950

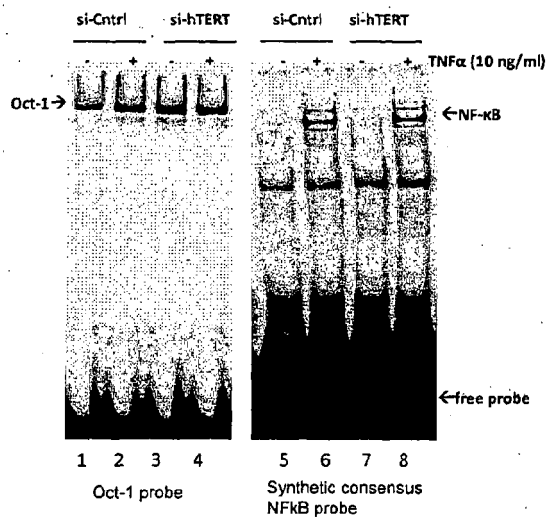
A.



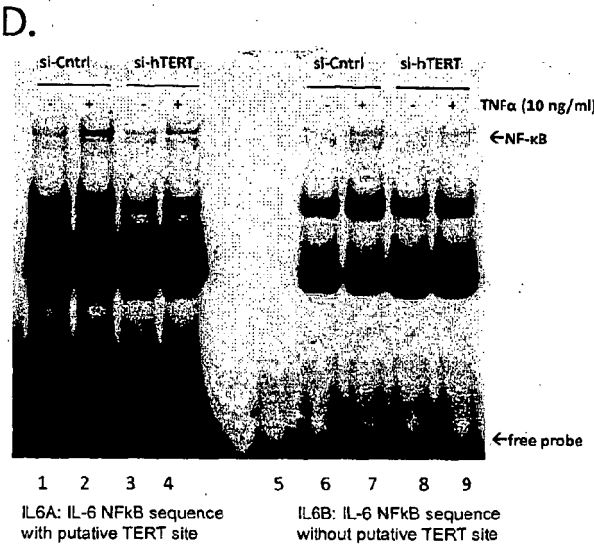
B. Oligonucleotide probe sequences for EMSA

NF-κB consensus	5'-TCA ACA GAG GGG ACT TTC CGA GAG GCC-3'
IL-6A	5'-ACT GGG AGG ATT CCC AAG GGG TCA ATT GGG AGA-3'
IL-6B	5'-ACT GGG AGG ATT CCC AAG GGG TCAA-3'
Oct-1	5'-TGT CGA ATG CAA ATC ACT AGA A-3'

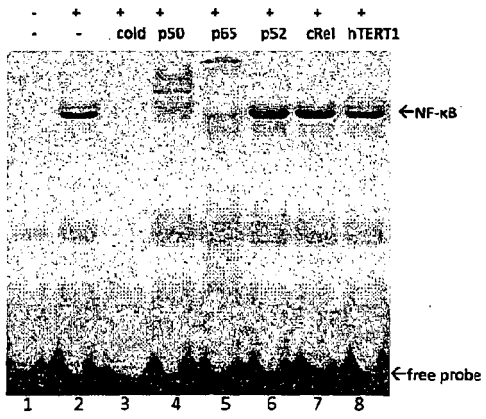
C.



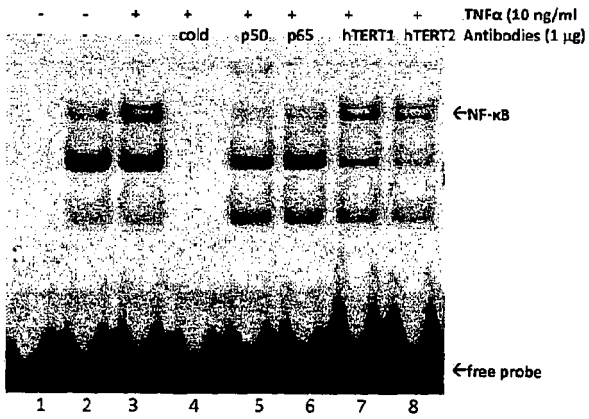
D.



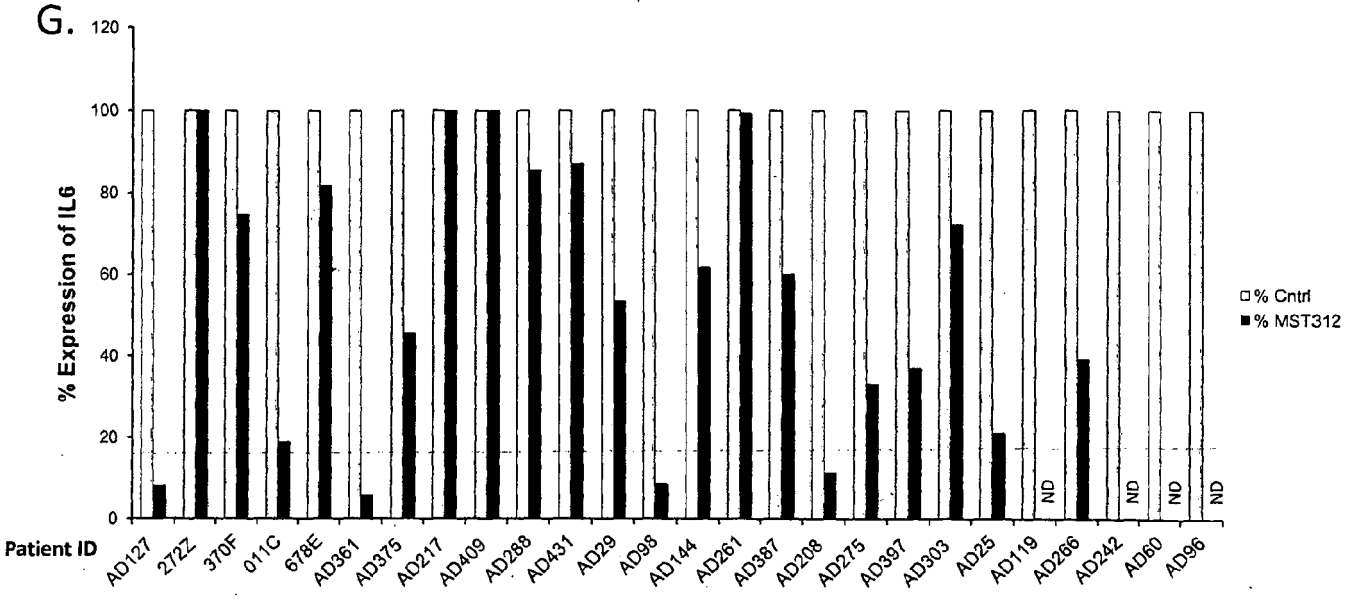
E.



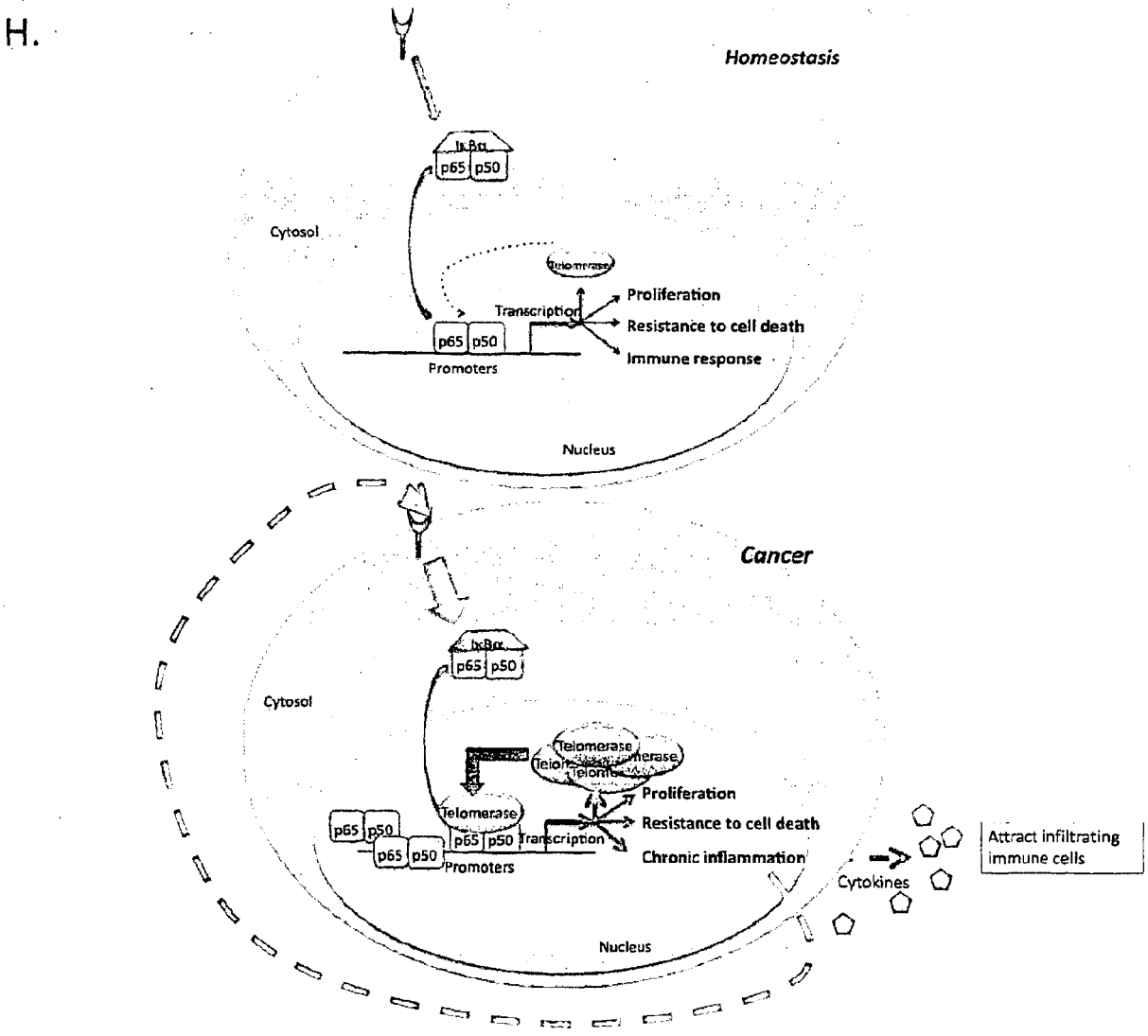
F.

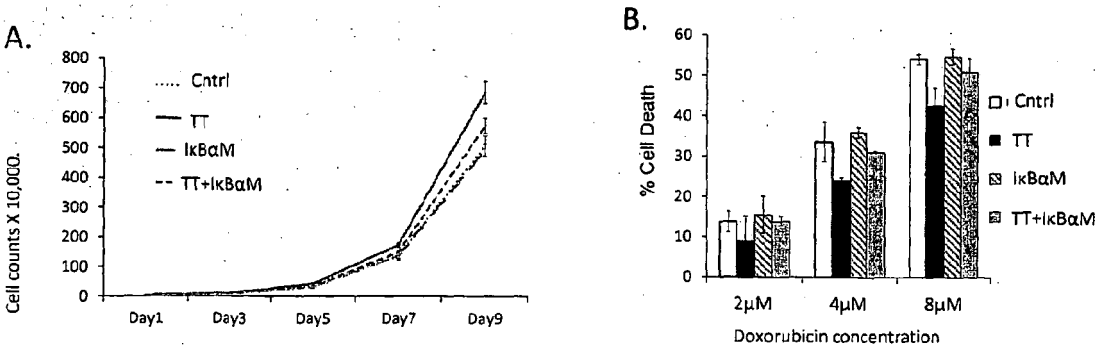


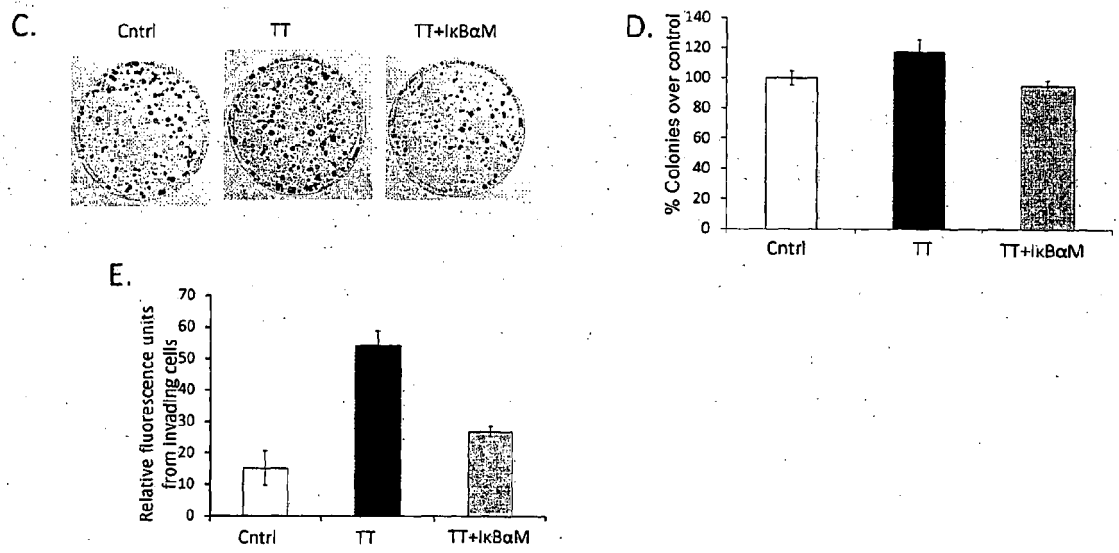
G.

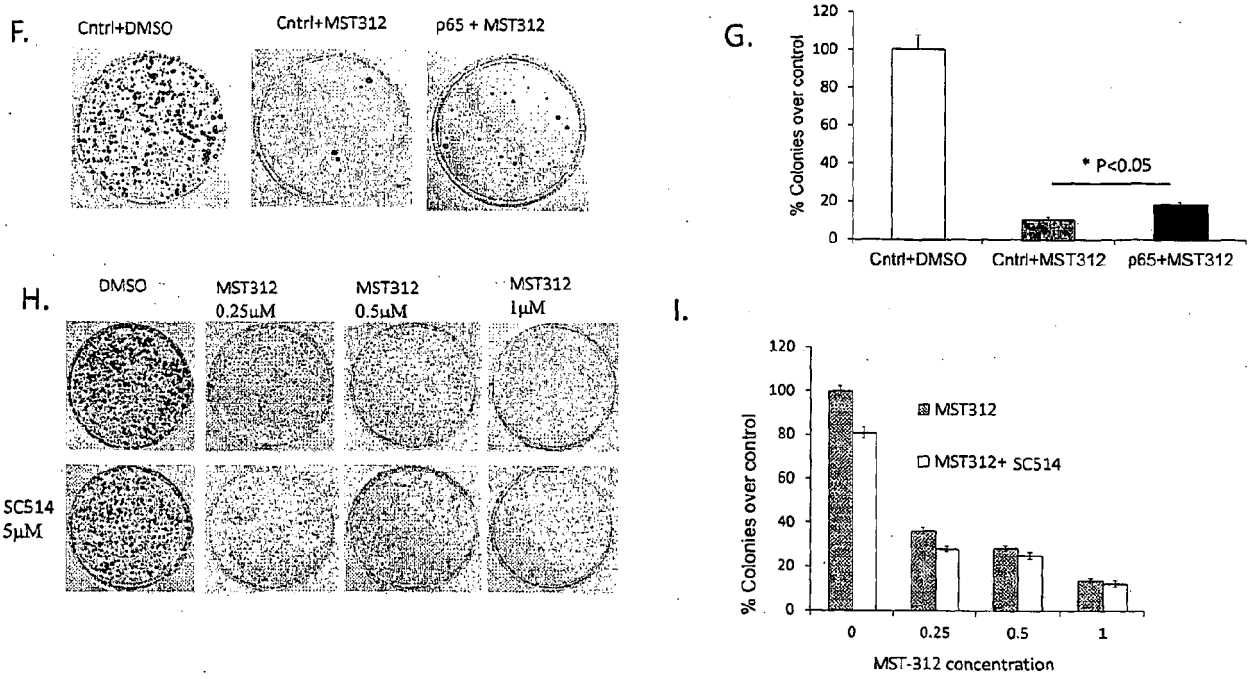

% Expression of IL6
120
100
80
60
40
20
0
Patient ID
AD127
272Z
370F
011C
678E
AD361
AD375
AD217
AD409
AD288
AD431
AD29
AD98
AD144
AD261
AD387
AD208
AD275
AD397
AD303
AD25
AD119
AD266
AD242
AD60
AD96
ND
% Cntrl
% MST312

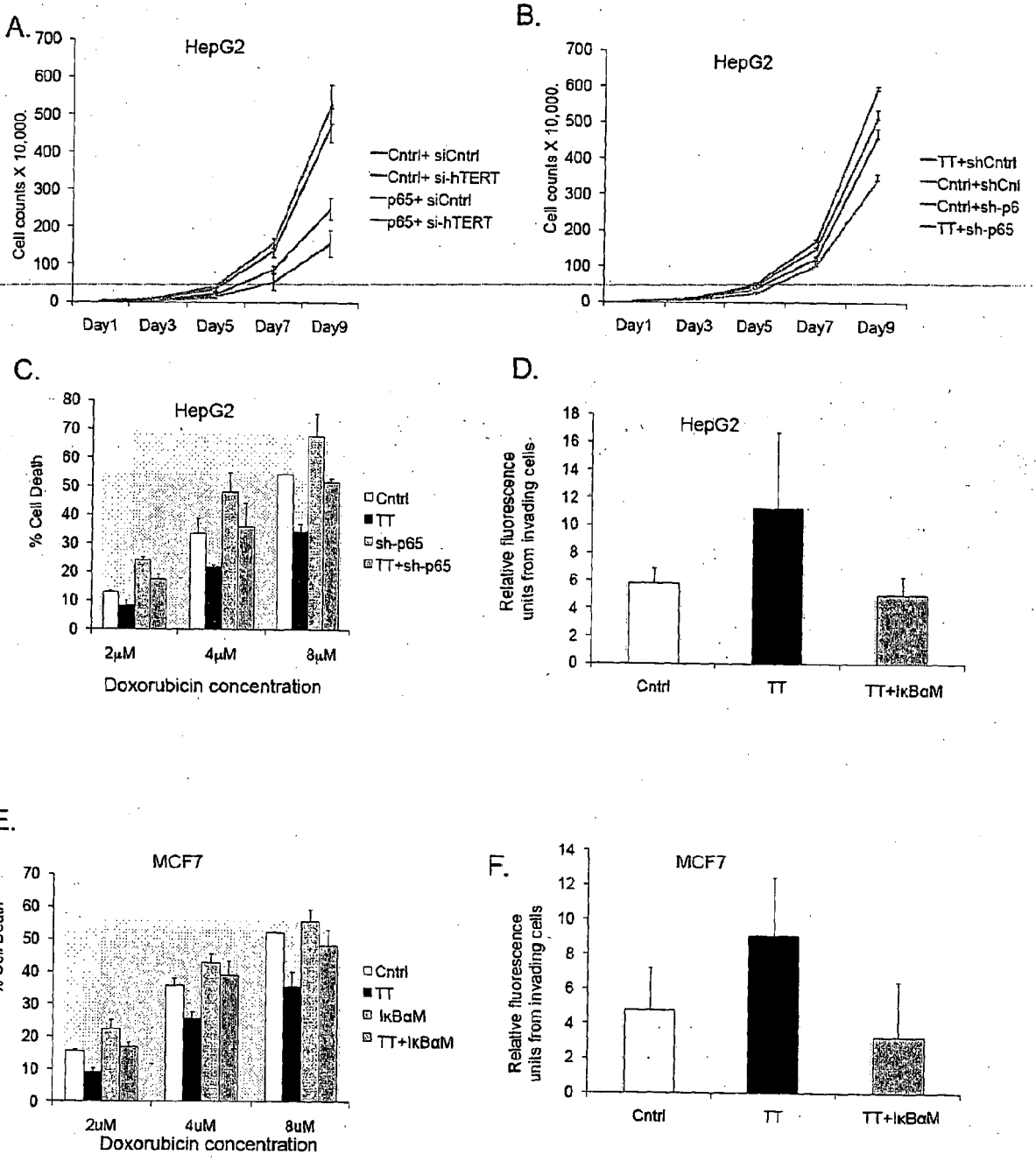
H.


Homeostasis
IκBα
p65
p50
Cytosol
Telomerase
Transcription
Proliferation
Resistance to cell death
Immune response
Promoters
Nucleus
Cancer
Chronic inflammation
Cytokines
Attract infiltrating immune cells


A.
Cell counts X 10,000.
800
700
600
500
400
300
200
100
0
Cntrl
TT
IκBαM
TT+IκBαM
Day1
Day3
Day5
Day7
Day9
B.
% Cell Death
60
50
40
30
20
10
0
Cntrl
TT
IκBαM
TT+IκBαM
2μM
4μM
8μM
Doxorubicin concentration


C.
Cntrl
TT
TT+IκBαM
D.
% Colonies over control
140
120
100
80
60
40
20
0
Cntrl
TT
TT+IκBαM
E.
Relative fluorescence units from invading cells
70
60
50
40
30
20
10
0
Cntrl
TT
TT+IκBαM


F.
Cntrl+DMSO
Cntrl+MST312
p65 + MST312
G.
% Colonies over control
120
100
80
60
40
20
0
* P<0.05
Cntrl+DMSO
Cntrl+MST312
p65+MST312
H.
DMSO
MST312 0.25μM
MST312 0.5μM
MST312 1μM
+ SC514 5μM
I.
% Colonies over control
120
100
80
60
40
20
0
MST312
MST312+ SC514
0
0.25
0.5
1
MST-312 concentration


A.
HepG2
Cell counts X 10,000.
Day1 Day3 Day5 Day7 Day9
Cntrl+ siCntrl
Cntrl+ si-hTERT
p65+ siCntrl
p65+ si-hTERT
B.
HepG2
Cell counts X 10,000.
Day1 Day3 Day5 Day7 Day9
TT+shCntrl
Cntrl+shCnl
Cntrl+sh-p6
TT+sh-p65
C.
HepG2
% Cell Death
2μM 4μM 8μM
Doxorubicin concentration
Cntrl
TT
sh-p65
TT+sh-p65
D.
HepG2
Relative fluorescence units from invading cells
Cntrl TT TT+IκBαM
E.
MCF7
% Cell Death
2uM 4uM 8uM
Doxorubicin concentration
Cntrl
TT
IκBαM
TT+IκBαM
F.
MCF7
Relative fluorescence units from invading cells
Cntrl TT TT+IκBαM

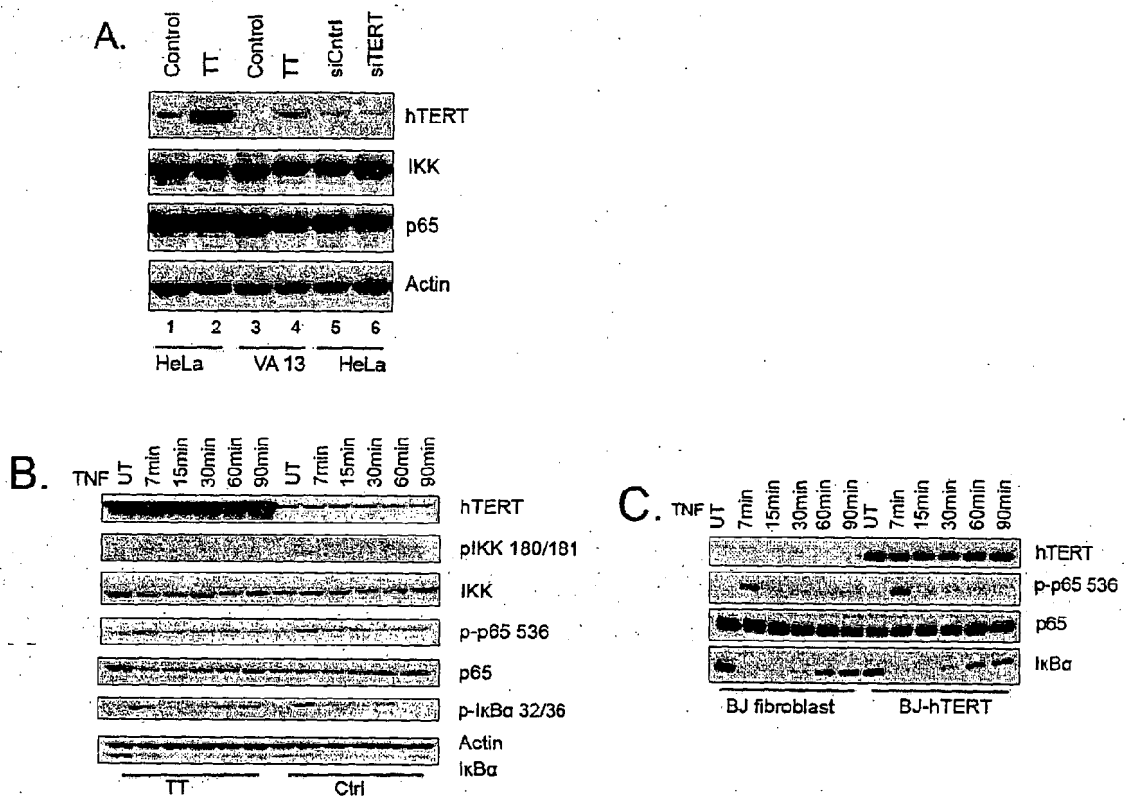
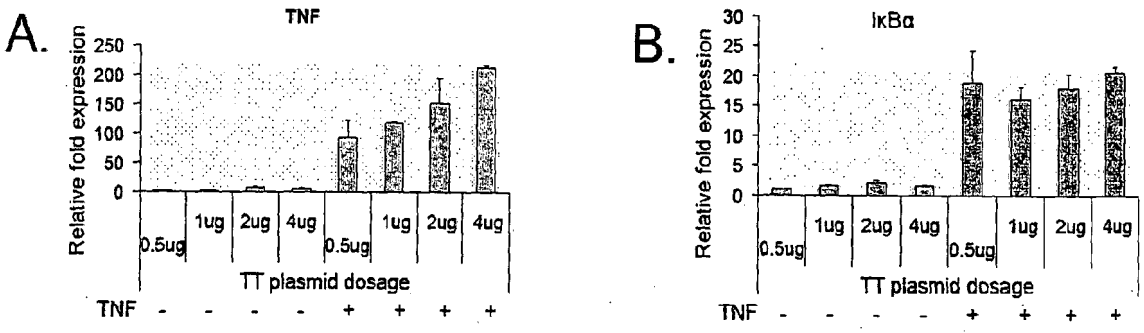
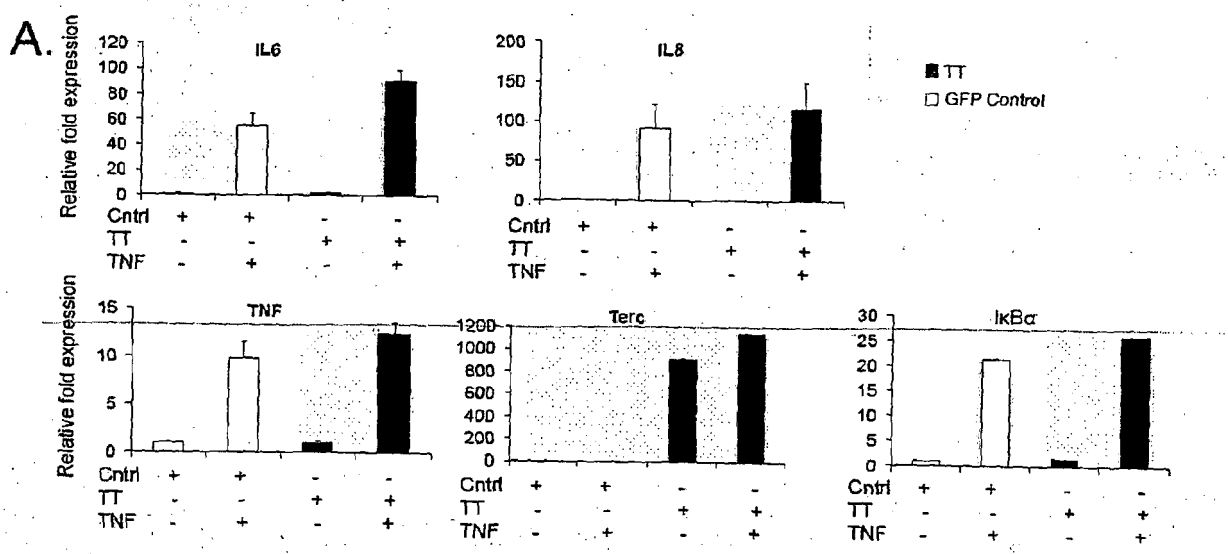
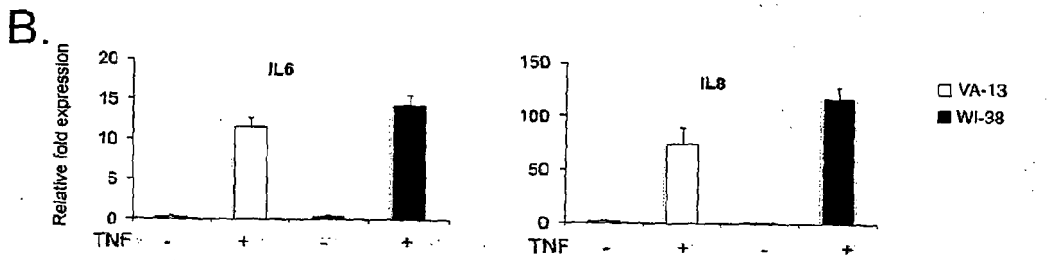
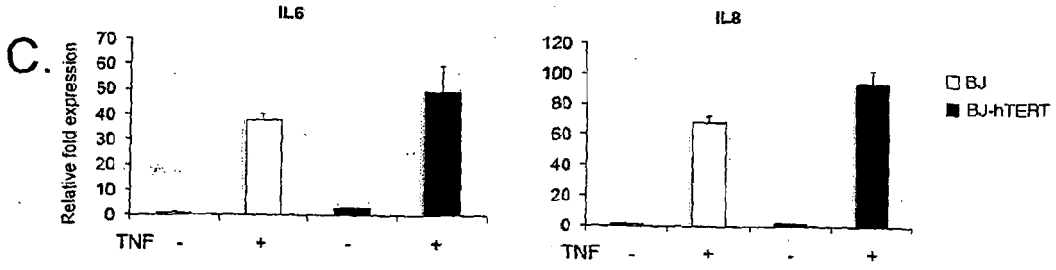

A.
Control
TT
Control
TT
siCntrl
siTERT
hTERT
IKK
p65
Actin
1 2 3 4 5 6
HeLa
VA 13
HeLa
B.
TNF UT 7min 15min 30min 60min 90min UT 7min 15min 30min 60min 90min
hTERT
pIKK 180/181
IKK
p-p65 536
p65
p-IκBα 32/36
Actin
IκBα
TT
Ctrl
C.
TNF UT 7min 15min 30min 60min 90min UT 7min 15min 30min 60min 90min
hTERT
p-p65 536
p65
IκBα
BJ fibroblast
BJ-hTERT

Figure 10


A.
TNF
Relative fold expression
250
200
150
100
50
0
0.5ug
1ug
2ug
4ug
0.5ug
1ug
2ug
4ug
TT plasmid dosage
TNF - - - - + + + +
B.
IκBα
Relative fold expression
30
25
20
15
10
5
0
0.5ug
1ug
2ug
4ug
0.5ug
1ug
2ug
4ug
TT plasmid dosage
TNF - - - - + + + +


A.
Relative fold expression
IL6
IL8
TNF
Terc
IκBα
Cntrl
TT
TNF
TT
GFP Control


B.
Relative fold expression
IL6
IL8
TNF
VA-13
WI-38


C.
Relative fold expression
IL6
IL8
TNF
BJ
BJ-hTERT

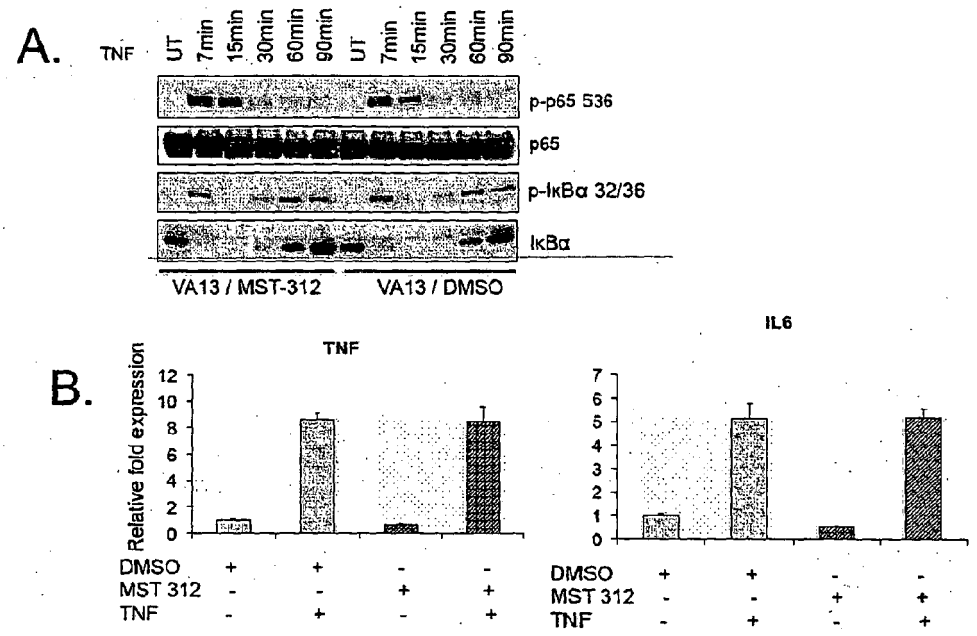
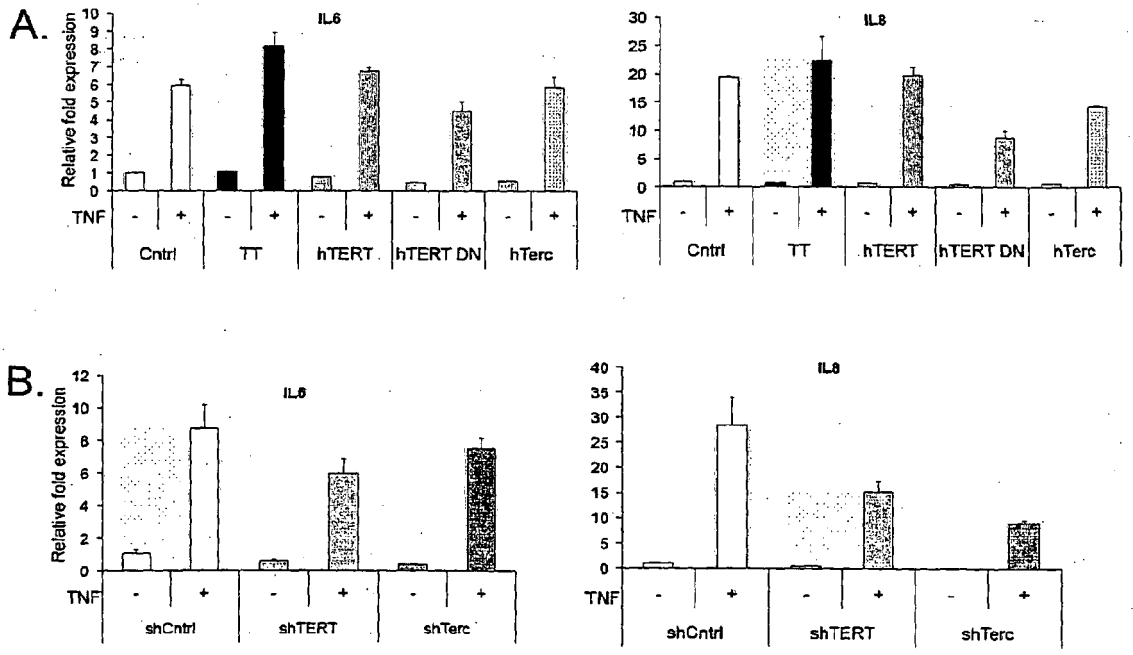
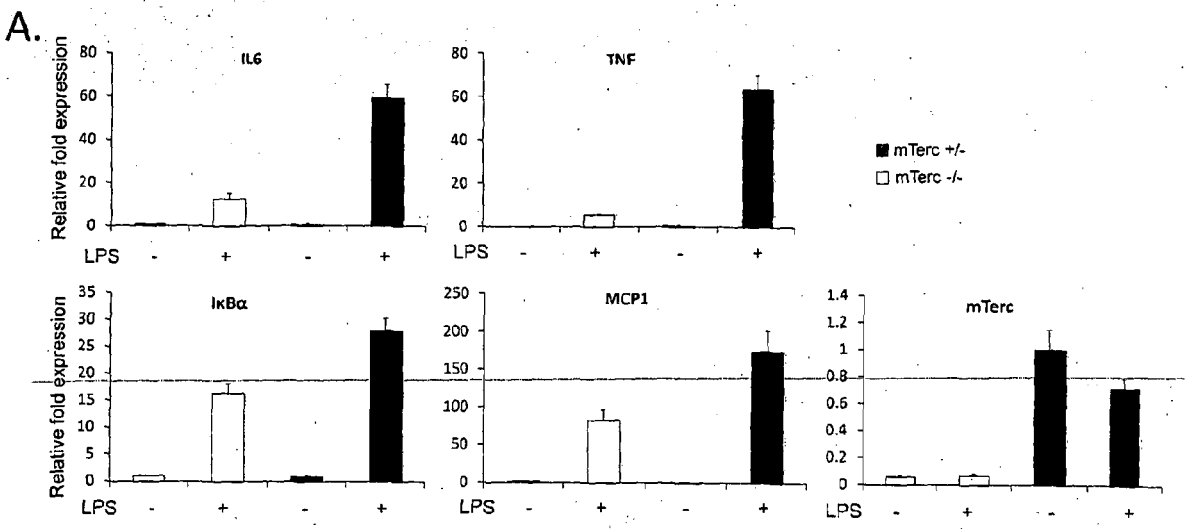
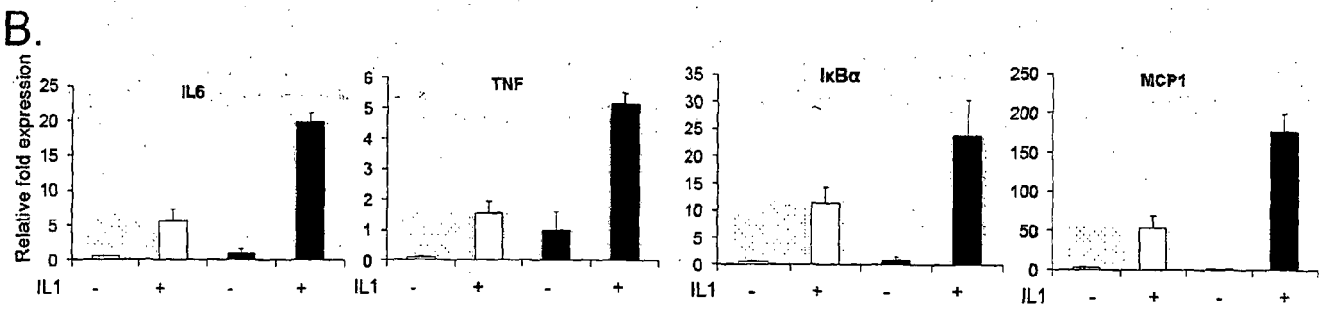
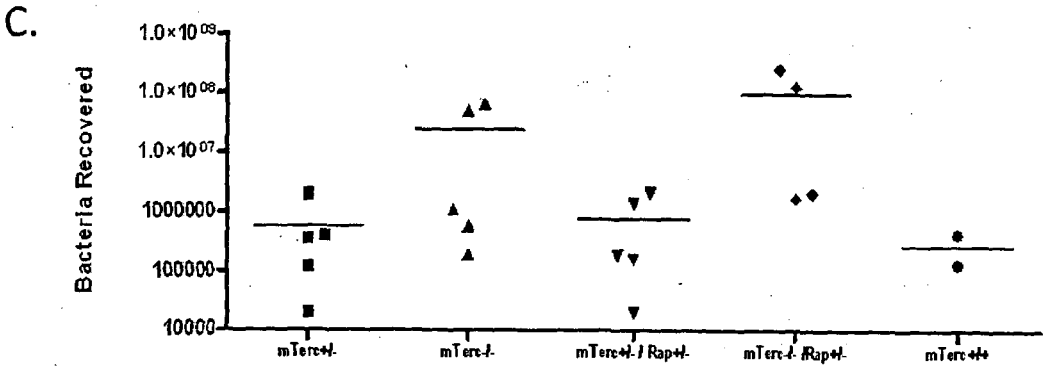

A.
TNF
UT
7min
15min
30min
60min
90min
UT
7min
15min
30min
60min
90min
p-p65 536
p65
p-IκBα 32/36
IκBα
VA13 / MST-312
VA13 / DMSO
B.
TNF
IL6
Relative fold expression
DMSO
MST 312
TNF

Figure 13


A.
IL6
IL8
Relative fold expression
TNF
Cntrl
TT
hTERT
hTERT DN
hTerc
B.
IL6
IL8
Relative fold expression
TNF
shCntrl
shTERT
shTerc


A.
IL6
TNF
IκBα
MCP1
mTerc
Relative fold expression
LPS
mTerc +/-
mTerc -/-


B.
IL6
TNF
IκBα
MCP1
Relative fold expression
IL1


C.
Bacteria Recovered
mTerc+/-
mTerc-/-
mTerc+/- / Rap+/-
mTerc-/- /Rap+/-
mTerc+/+

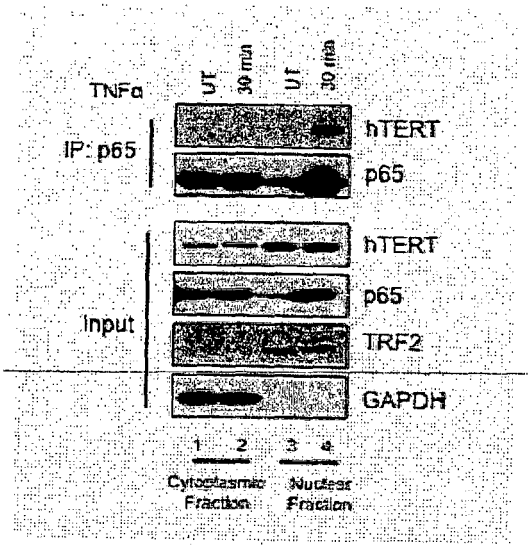
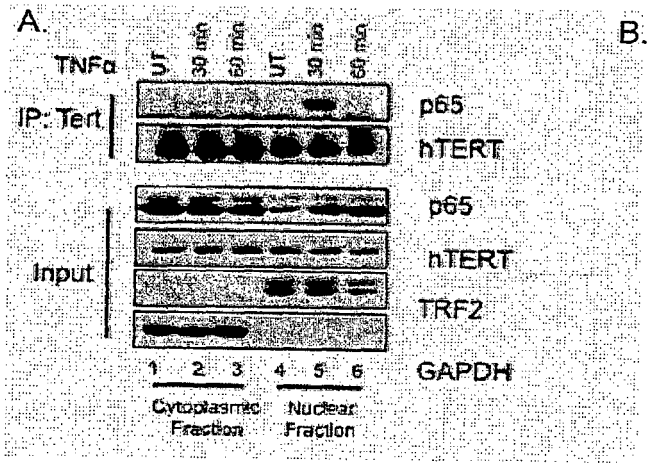
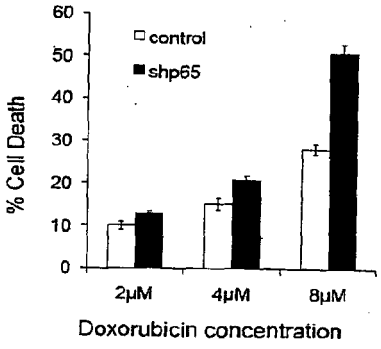
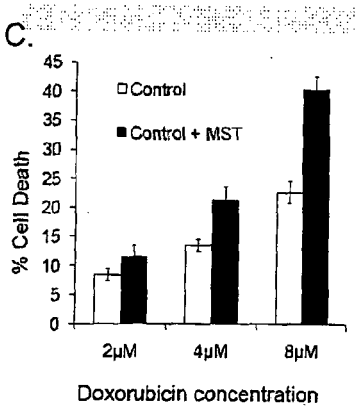
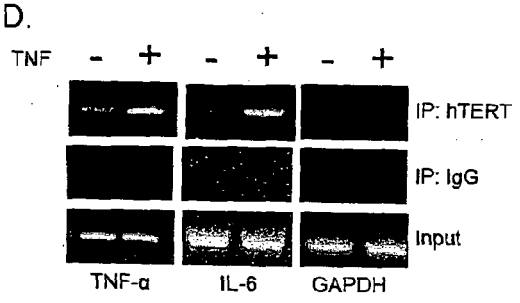

TNFα
UT
30 min
UT
30 min
IP: p65
hTERT
p65
Input
hTERT
p65
TRF2
GAPDH
1 2 3 4
Cytoplasmic Fraction
Nuclear Fraction

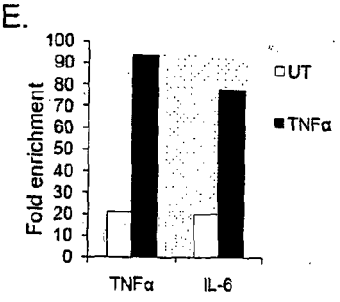
Figure 16

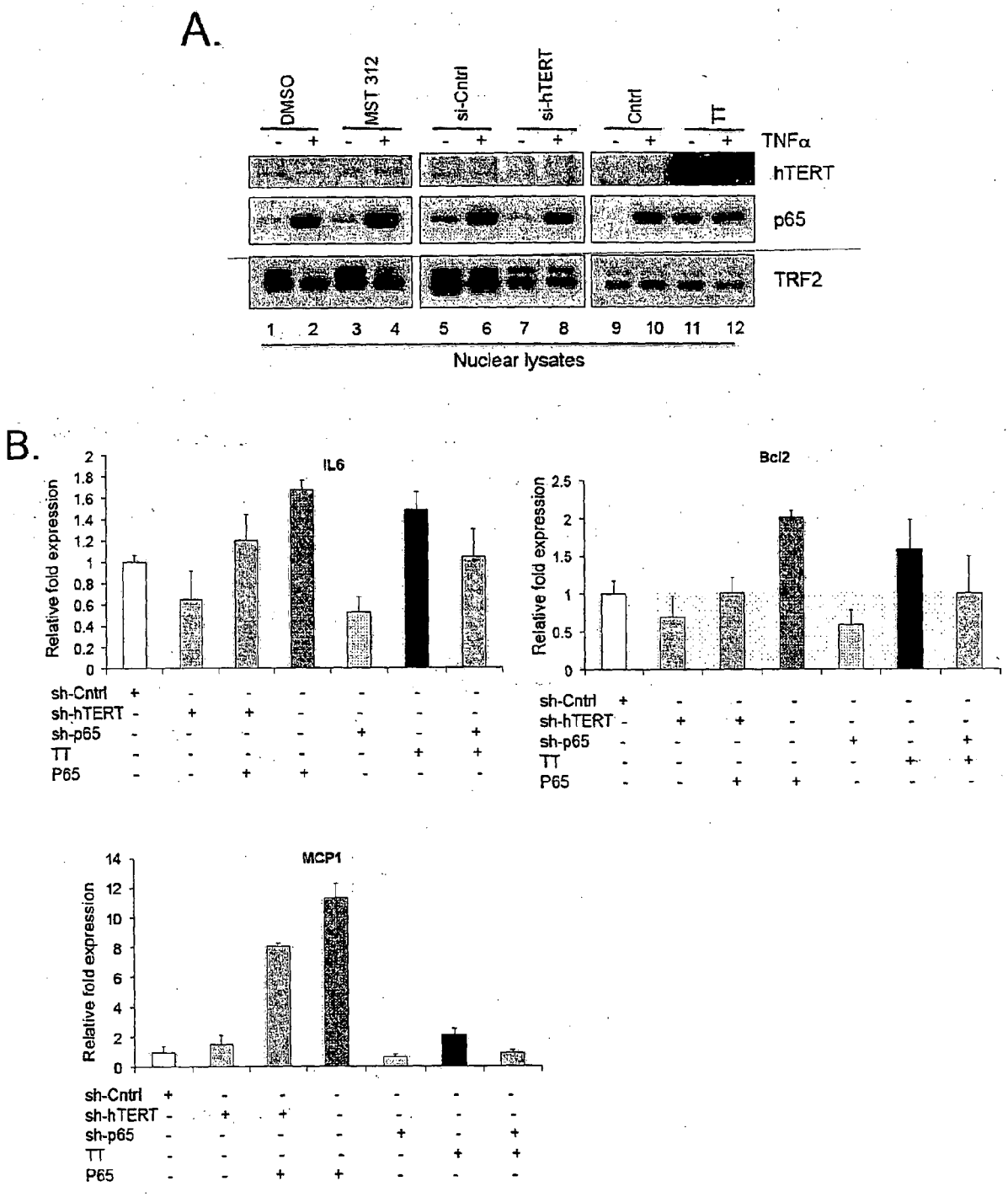

A.
TNFα
UT
30 min
60 min
UT
30 min
60 min
IP: Tert
p65
hTERT
Input
p65
hTERT
TRF2
GAPDH
1 2 3 4 5 6
Cytoplasmic Fraction
Nuclear Fraction


B.
control
shp65
% Cell Death
60
50
40
30
20
10
0
2μM
4μM
8μM
Doxorubicin concentration


C.
Control
Control + MST
% Cell Death
45
40
35
30
25
20
15
10
5
0
2μM
4μM
8μM
Doxorubicin concentration


D.
TNF - + - + - +
IP: hTERT
IP: IgG
Input
TNF-α
IL-6
GAPDH


E.
UT
TNFα
Fold enrichment
100
90
80
70
60
50
40
30
20
10
0
TNFα
IL-6


A.
DMSO
MST 312
si-Cntrl
si-hTERT
Cntrl
TT
TNFα
hTERT
p65
TRF2
1 2 3 4 5 6 7 8 9 10 11 12
Nuclear lysates
B.
IL6
Relative fold expression
sh-Cntrl
sh-hTERT
sh-p65
TT
P65
Bcl2
Relative fold expression
sh-Cntrl
sh-hTERT
sh-p65
TT
P65
MCP1
Relative fold expression
sh-Cntrl
sh-hTERT
sh-p65
TT
P65

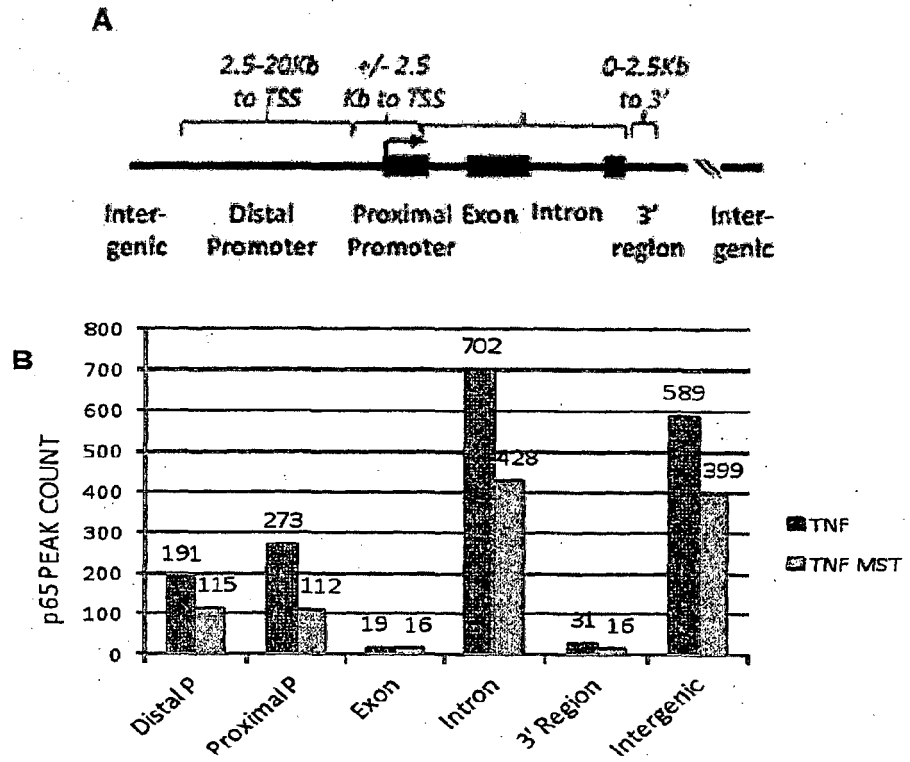


Figure 19

A Overlapping peaks

RANK	Name	Family	Logo	LogoR	Score	Distribution	%Sequence having motif above optimal cutoff within optimal binding range	%Sequence having motif above 1e-4 cutoff within 200bp
1	V$NFKAPPAB65_01	NFKB			42.3334		0.3862179	0.3910256

B TNF-unique peaks

1	V$NFKAPPAB65_01	NFKB			37.4476		0.3570325	0.38949

C TNF&MST-unique peaks

1	V$NFKAPPAB65_01	NFKB			14.5447		0.2882096	0.2663755

A



B

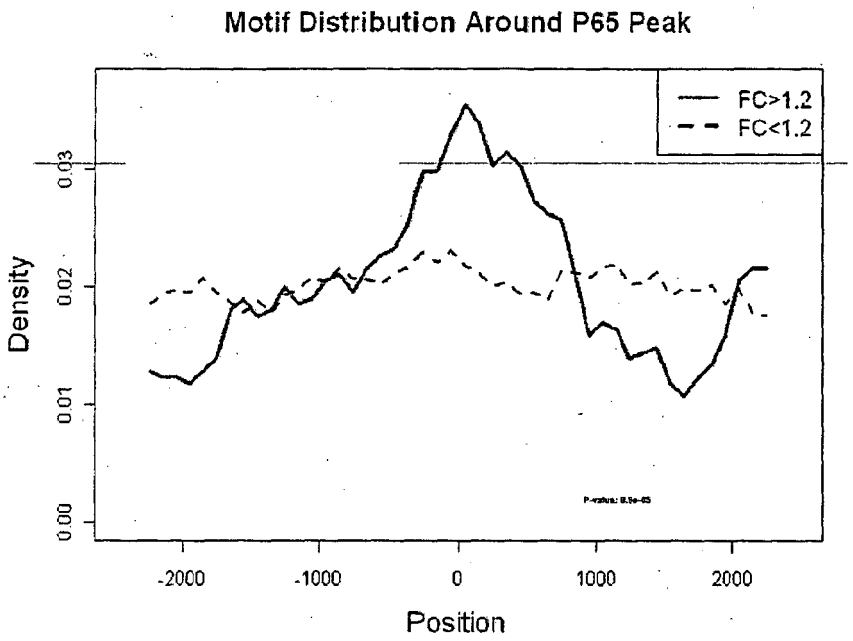
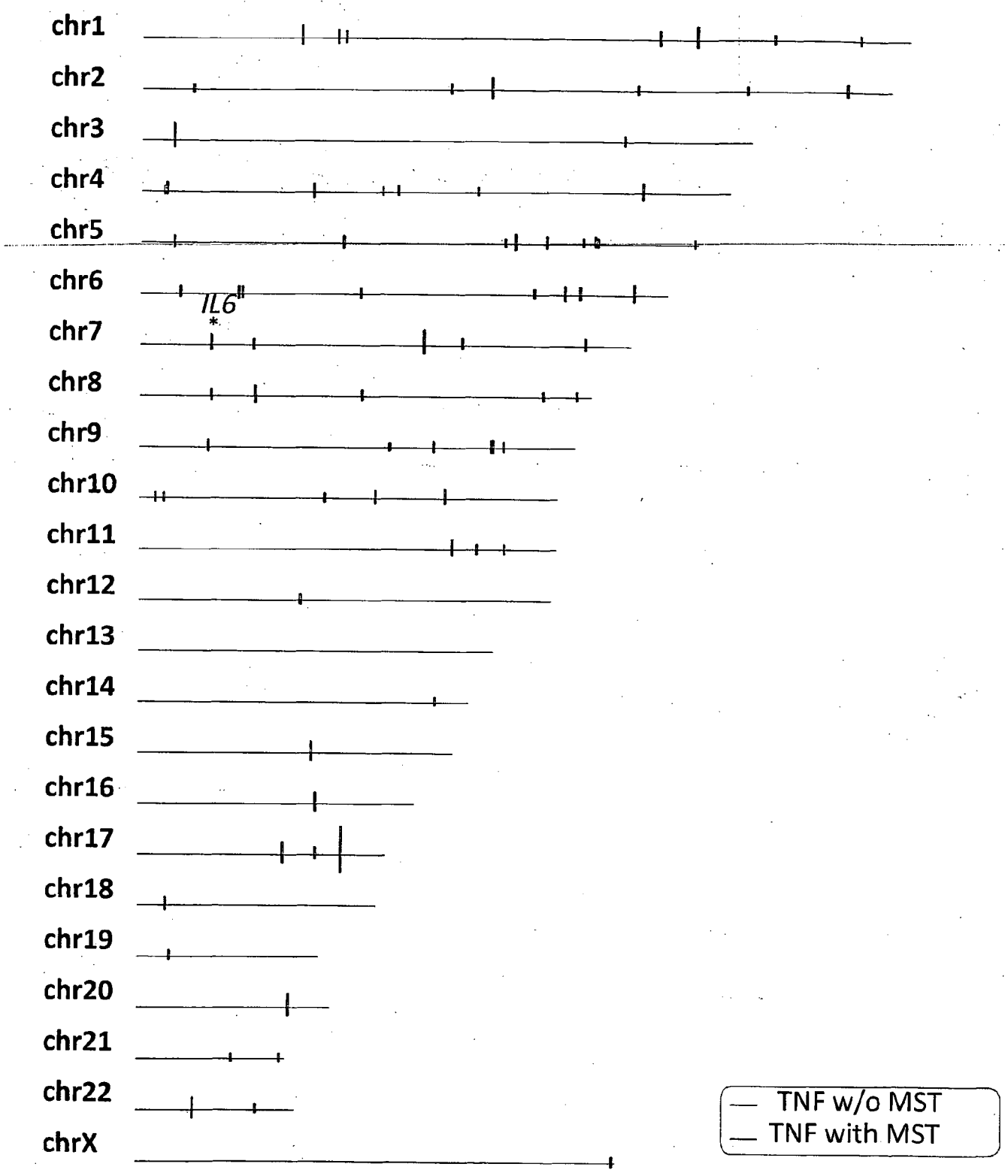


Figure 21

Term Name	Binomial p-value for "Common" peaks	Binomial p-value for "TNF unique" peaks
inflammatory response	6.36E-16	8.07E-08
negative regulation of cell death	9.14E-16	
defense response	3.35E-15	
negative regulation of apoptosis	1.85E-14	
negative regulation of programmed cell death	2.04E-14	
response to wounding	3.03E-14	
anti-apoptosis	2.64E-13	
immune response	5.07E-10	
regulation of cytokine biosynthetic process	7.22E-10	
response to biotic stimulus	7.27E-10	
response to other organism	1.69E-09	
cellular response to chemical stimulus	1.95E-08	
regulation of cytokine production	2.15E-08	1.29E-04
positive regulation of nitric oxide biosynthetic process	3.78E-08	
regulation of nitric oxide biosynthetic process	7.28E-08	
negative regulation of signaling pathway	1.50E-07	
response to virus	5.32E-07	
regulation of transcription factor activity	6.72E-07	3.88E-06
regulation of gene-specific transcription	1.46E-06	
regulation of cellular localization	1.48E-06	


chr1
chr2
chr3
chr4
chr5
chr6
IL6
chr7
chr8
chr9
chr10
chr11
chr12
chr13
chr14
chr15
chr16
chr17
chr18
chr19
chr20
chr21
chr22
chrX
TNF w/o MST
TNF with MST

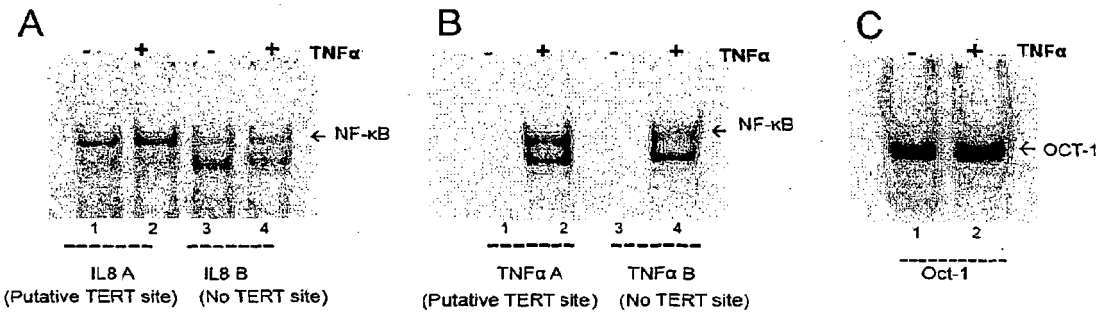


Figure 24

Patient sampleID	Diagnosis	Cytogenetics
AD127	ALL	Normal
272Z	ALL	46,XY,t(2;9;22)(p13;q34;q11.2)[19]/46,XY[1]
370F	CML	46,XY,t(9;22)(q34;q11.2)[2]/45,idem,-3[8]/46,XY[10]
011C	AML	46,XX,-12,+mar[8]/46,XX[3]
678E	AML	46,XY,del(11)(q?14q23),add(13)(q12)[18]/46,XY[2]
AD361	AML	ND
AD375	AML	46,XY,del(9)(p22),t(9;22)(q34;q11.2)[9]/ 46,idem,der(20)t(1;20)(q21;q?13.1)[5]/ 47,idem,+der(22)t(9;22)[4]/ 46,XY[2]
AD217	CML	46,XY,del(9)(q13q22),del(11)(q21),add(12)(p11.2),?del(16)(q22)[7]/46,XY[13]
AD409	AML	46,Y,der(X)?t(X;7)(q28;q11.2)[17]/46,XY[3]
AD288	AML	46,XY,del(20)(q11.2)[20]
AD431	AML	NA
AD29	AML	47,XY,+11[20]
AD98	AML	47,XY,+8[2]/46,XY[18]
AD144	CML	46,XY,del(4)(q21),der(5)t(4;5)(q21;q11.2)[2]/45,idem,der(2)t(2;14)(p13;q24)t(2;13)(q?33;q?12), -7,del(11)(p11.2),-13,der(14)t(2;14)(p13;q24),-17,+2mar[16]/ 46,XY[2]
AD261	ALL	45,XX,-7[14]/44,XX,add(1)(p36.1),-15,-20[cp4]/46,XX[2]
AD387	ALL	46,XY[20]
AD208	ALL	46,XX[10]
AD275	ALL	49, XY, der(1;7)(q10;p10), +8, +9, +21
AD397	ALL	46, XX
AD303	ALL	46,XX,add(7)(q22),t(14;19)(q32;p13)[1]/ 46,idem,add(1)(q42)[2],add(9)(p21)[2],del(11)(p14)[2],add(18)(q23)[3],del(20)(q13)[2][cp5]/ 46,XX[17]
AD25	AML	46,XX[50]
AD119	AML	46,XY,t(9;22)(q34;q11.2)[29]/ 47,idem,+mar[1]
AD266	ALL	46,XY,t(9;22)(q34;q11.2)[38]/46,idem,i(7)(q10)[2]
AD242	ALL	46,XY,t(2;9;22)(p13;q34;q11.2)[19]/46,XY[1]
AD60	CML	46,XY,t(9;22)(q34;q11)
AD96	CML	46,XX,t(9;22)(q34;q11.2)[25]
ALL - Acute Lymphocytic Leukemia		NA = Not available
AML - Acute Myeloid Leukemia		ND= not done/not requested
CML - Chronic Myeloid Leukemia		
CML-BC = CML in blast crisis		
CML-CP = CML in chronic phase		