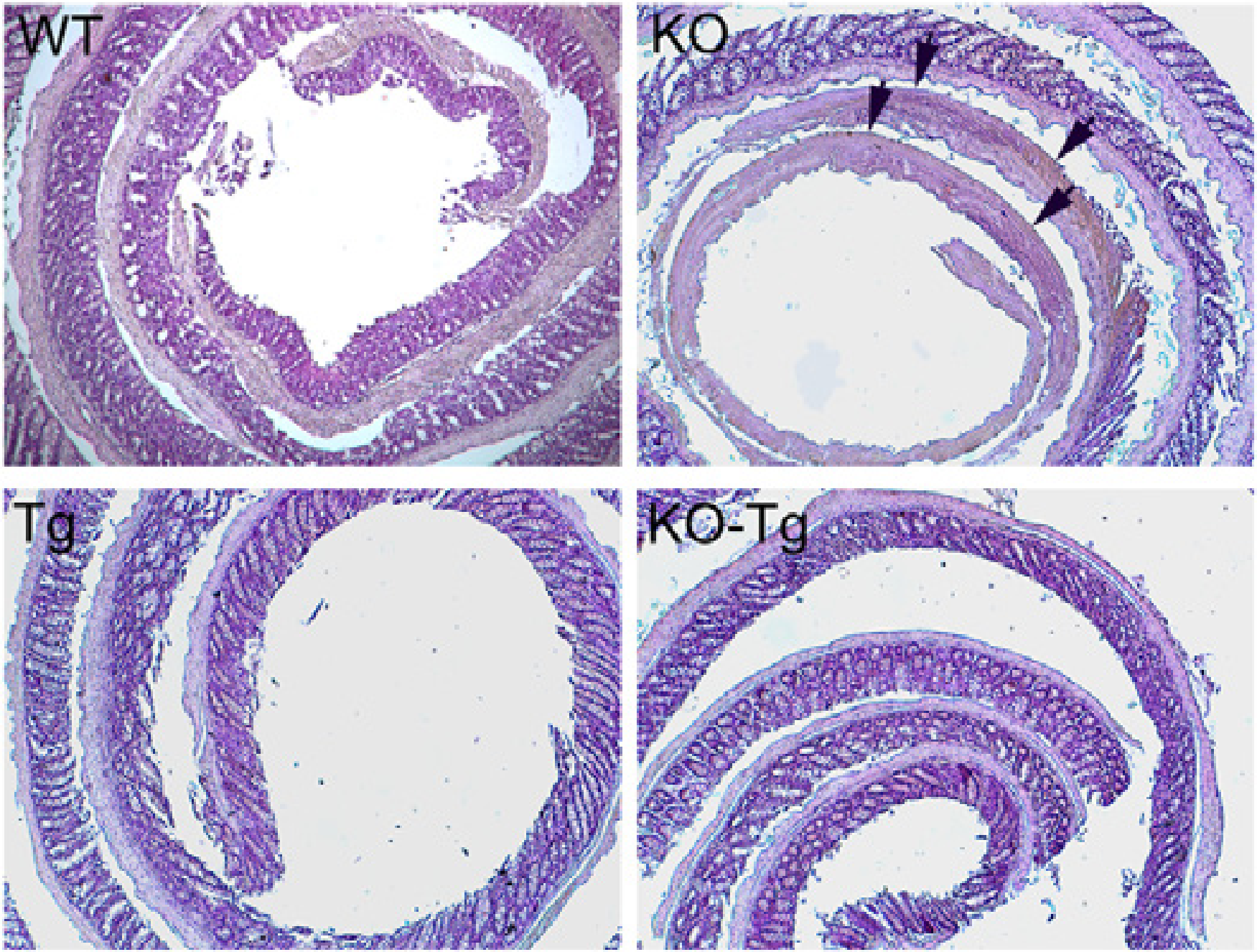
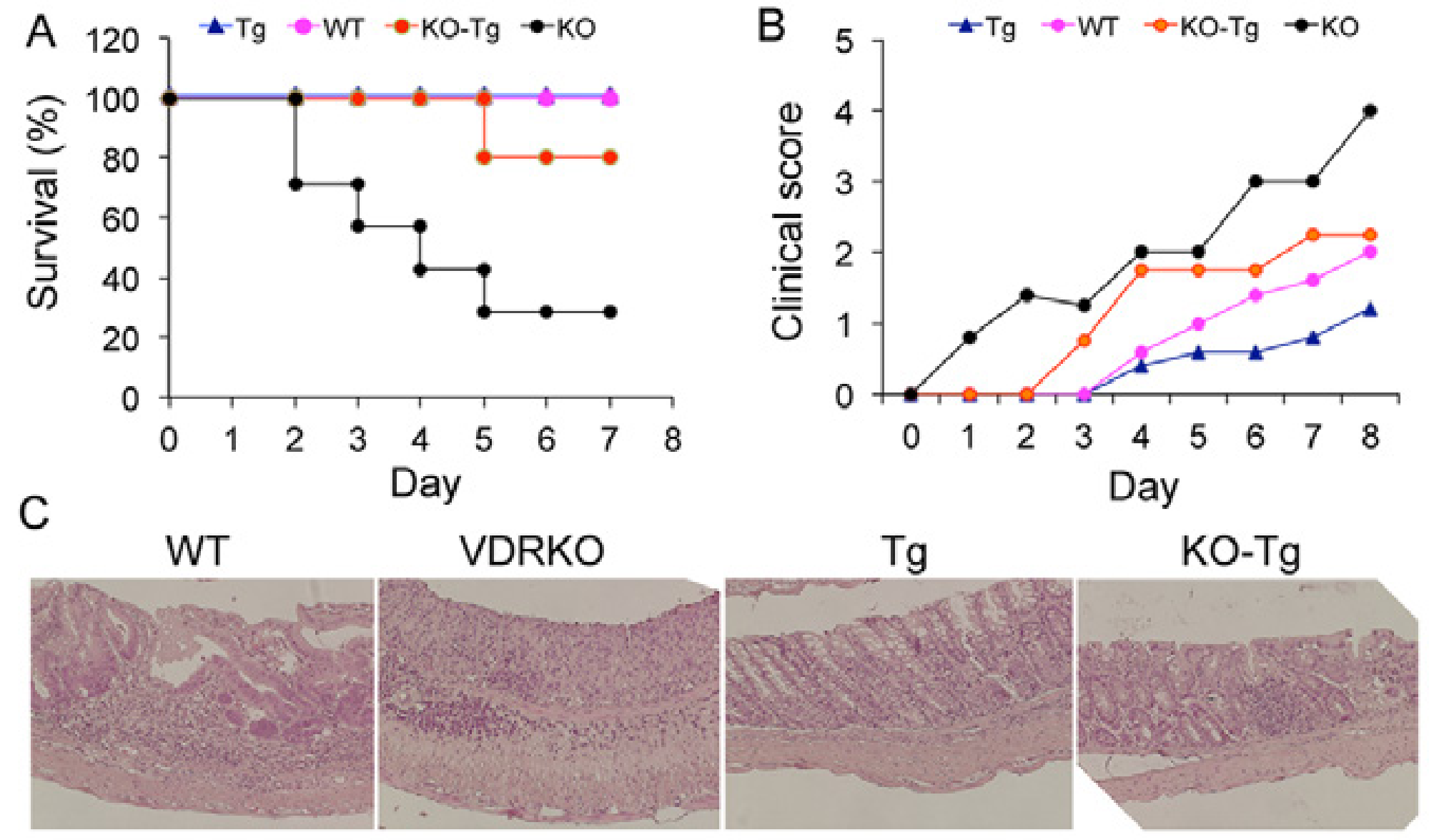
Supplementary Figure legends

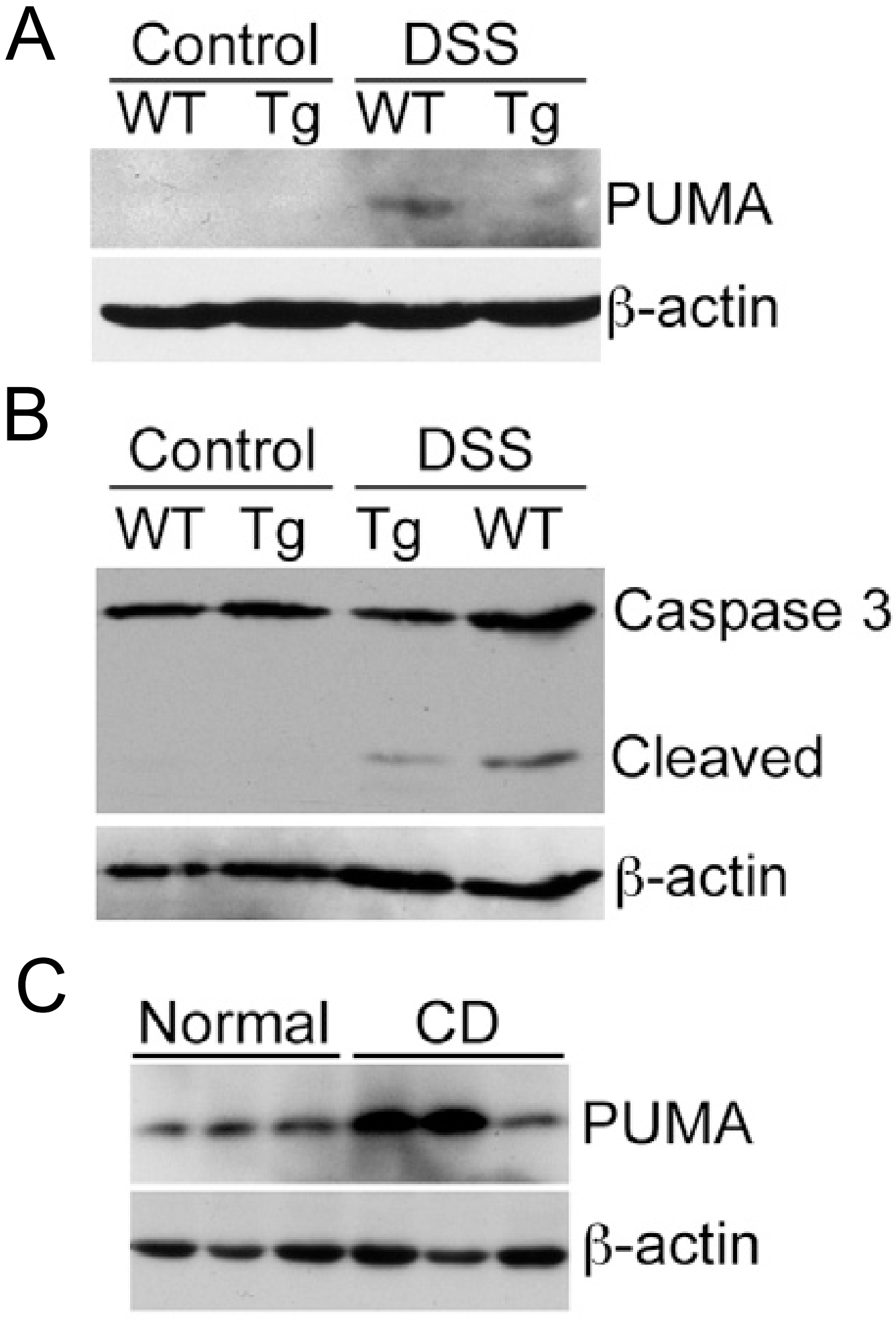
Figure S1. TNBS colitis model: Reconstituted hVDR transgene in gut epithelial cells corrects severe colitis in VDR-null mice. Whole colon "Swiss roll" H&E histology of WT, VDRKO, Tg and KO-Tg mice on day 6 after TNBS treatment. *Arrows* indicate severe ulceration and complete depletion of crypts in the distal colon of VDRKO mice, which are not seen in KO-Tg mice.

Figure S2. DSS colitis model: Reconstituted hVDR transgene in gut epithelial cells corrects severe colitis in VDR-null mice. WT, VDRKO, Tg, and KO-Tg mice treated with 2.5% DSS in drinking water. (A) Survival curves; (B) Clinical score; (C) H&E histology of distal colons from the four genotypes of mice. Not the severe ulceration and crypt depletion in VDRKO mice, which are not seen in KO-Tg mice.

Figure S3. PUMA and caspase-3 in DSS treated mice and in human CD biopsies. (A and B) Western analyses of colonic mucosal lysates from untreated controls and DSS-treated WT and Tg mice. The data show that PUMA induction (A) and caspase 3 activation (B) were attenuated in Tg mice. (C) Western blot showing increased PUMA expression in the biopsies from CD patients.


WT
KO
Tg
KO-Tg


A
Tg
WT
KO-Tg
KO
Survival (%)
120
100
80
60
40
20
0
0 1 2 3 4 5 6 7 8
Day
B
Tg
WT
KO-Tg
KO
Clinical score
5
4
3
2
1
0
0 1 2 3 4 5 6 7 8
Day
C
WT
VDRKO
Tg
KO-Tg


A
Control
DSS
WT
Tg
WT
Tg
PUMA
β-actin
B
Control
DSS
WT
Tg
Tg
WT
Caspase 3
Cleaved
β-actin
C
Normal
CD
PUMA
β-actin

Supplementary Table 1. Primers used in the study

PCR Primers	**Forward (5'-3')**	**Reverse (5'-3')**
mGAPDH	GGGTGTGAACCACGAGAAATATG	TGTGAGGGAGATGCTCAGTGTTG
mTNF-alpha	TCAGCCTCTTCTCATTCCTG	CAGGCTTGTCACTCGAATTT
mINFgamma	GCGTCATTGAATCACACCTG	TGAGCTCATTGAATGCTTGG
mIL-6	CCTCTCTGCAAGAGACTTCCA	AGAATTGCCATTGCACAACTCT
mIL-1beta	CCAAAAGATGAAGGGCTGCT	ACAGAGGATGGGCTCTTCTT
mIL-12p35	CATCGATGAGCTGATGCAGT	CAGATAGCCCATCACCCTGT
mIL-13	CAGCATGGTATGGAGTGTGG	TGGGCTACTTCGATTTTGGT
mMIP-1	CTTCTCTGTACCATGACACTCTGC	CCTCCAAGACTCTCAGGCATTC
mMIP-2	CCCAGACAGAAGTCATAGCCA	AGTGAACTCTCAGACAGCGA
mMCP-1	GTGCAGAGAGCCAGACGGGA	GGCATCACAGTCCGAGTCACA
mZO-1	CCACCTCTGTCCAGCTCTTC	CACCGGAGTGATGGTTTTCT
mOccludin1	CCTCCAATGGCAAAGTGAAT	CTCCCCACCTGTCGTGTAGT
mClaudin-2	TATGTTGGTGCCAGCATTGT	TCATGCCCACCACAGAGATA
mClaudin-5	GCTCTCAGAGTCCGTTGACC	CTGCCCTTTCAGGTTAGCAG
mClaudin-1	GATGTGGATGGCTGTCATTG	CGTGGTGTTGGGTAAGAGGT
ChIP primers		
PUMA κB	CATGTAAGTGATGTCATATGTC	CTTCCTGGTCTTTTCCAAACT

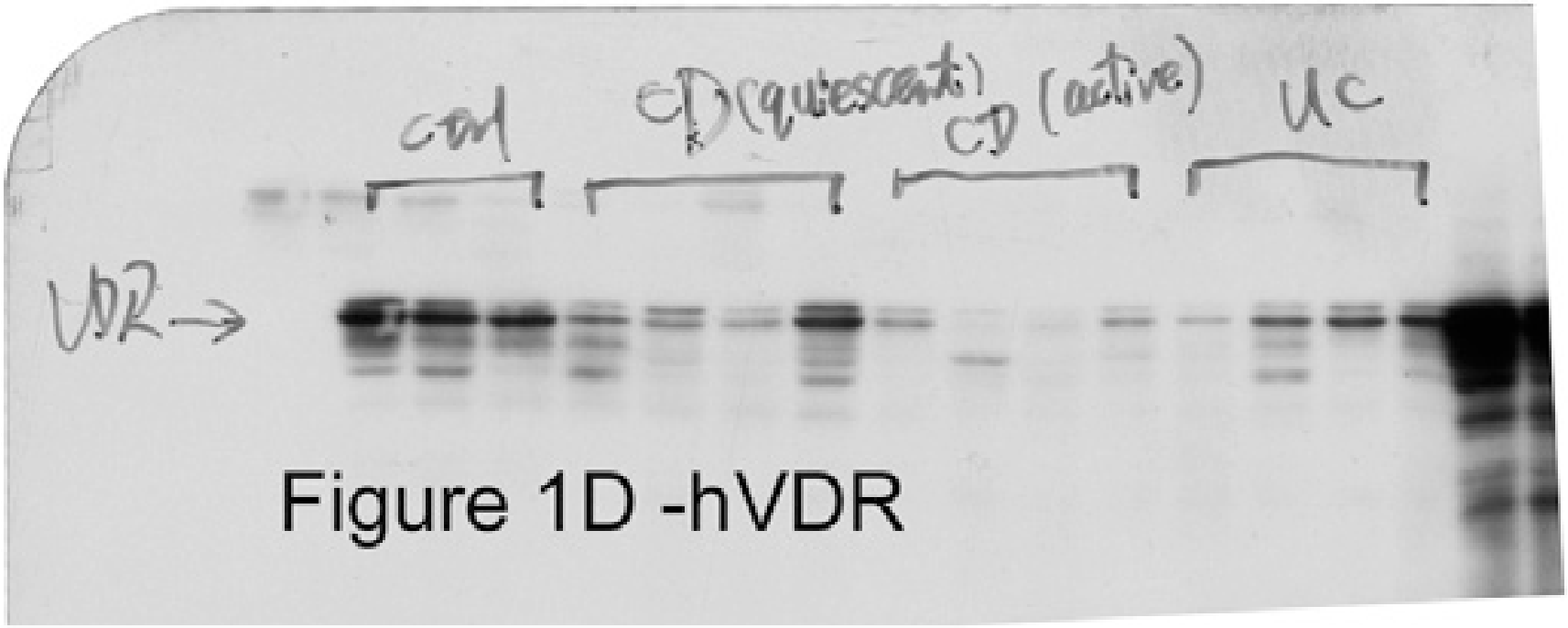


Figure 1D -hVDR

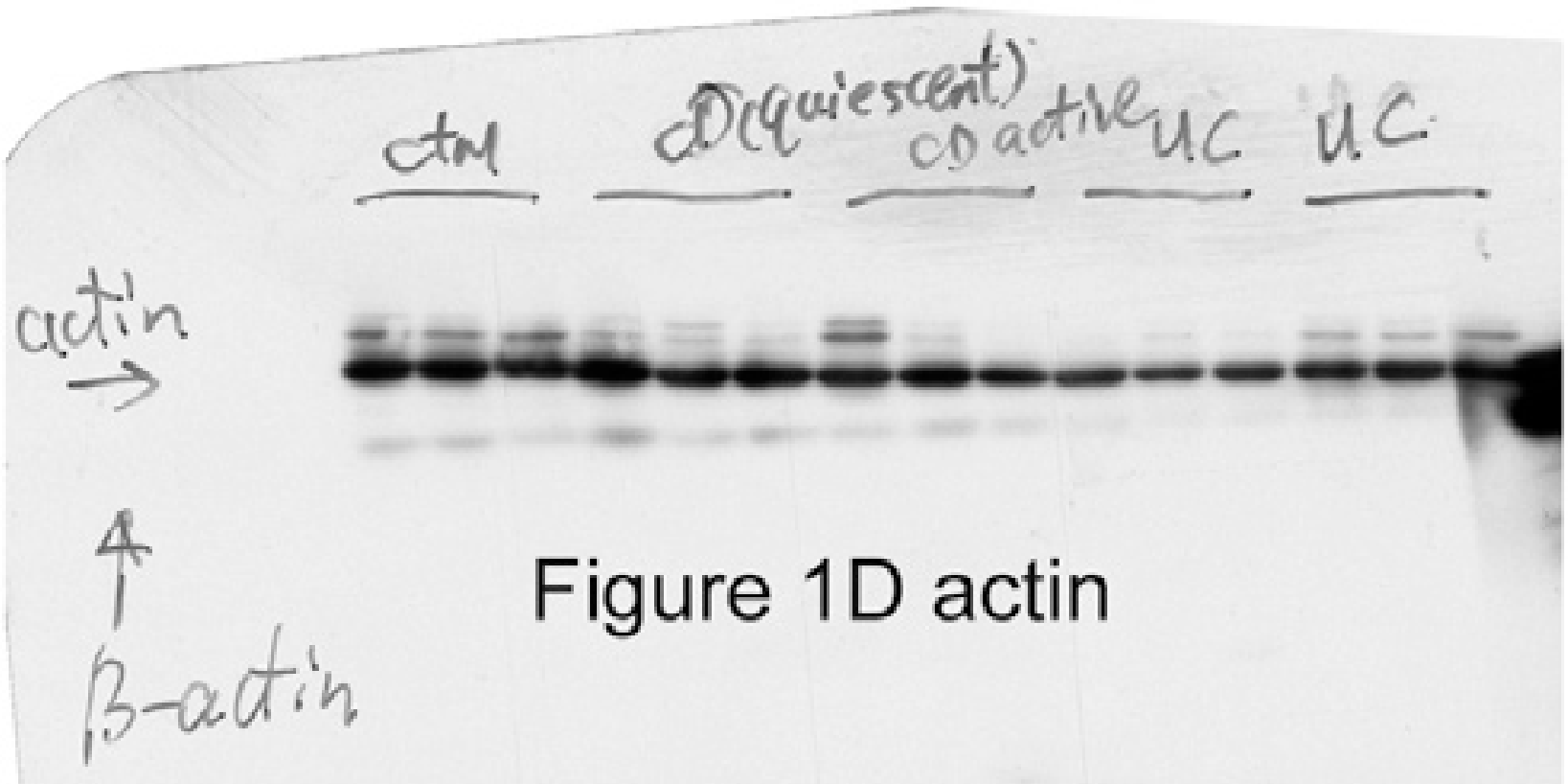
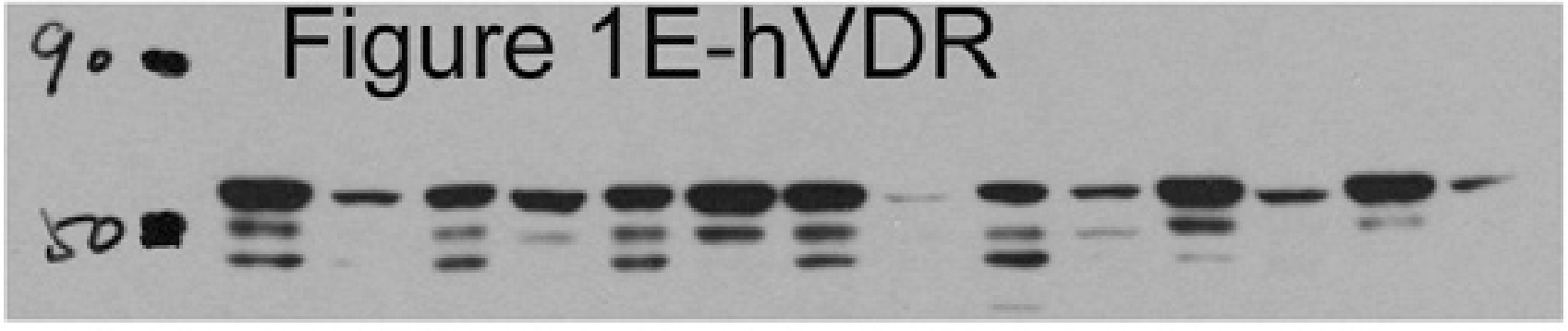
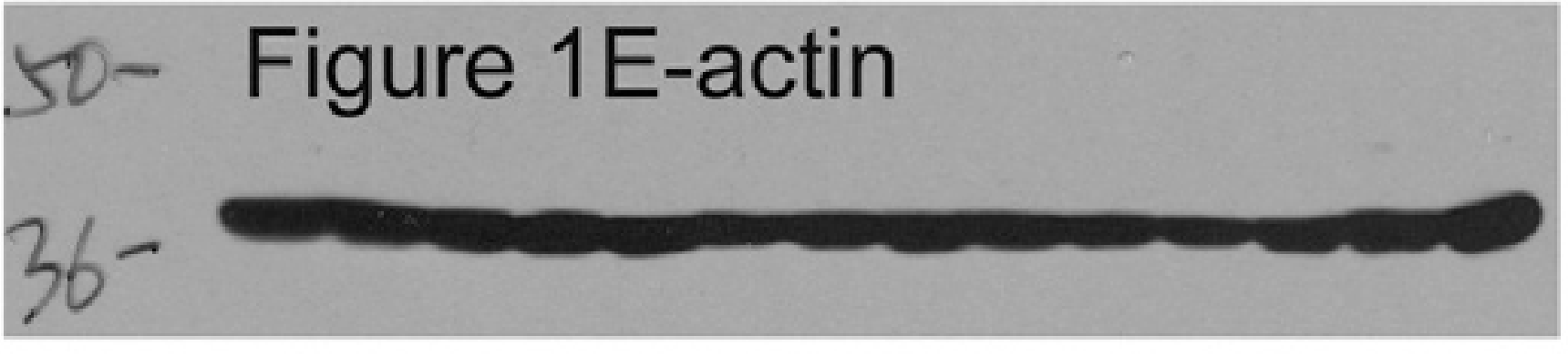


Figure 1D actin


90
50
Figure 1E-hVDR


50
36
Figure 1E-actin

Villin-14. Intestine & colon

No. 1-11 are small intestine
No. 12-14 are colon

V.4

Figure 2B-Flag

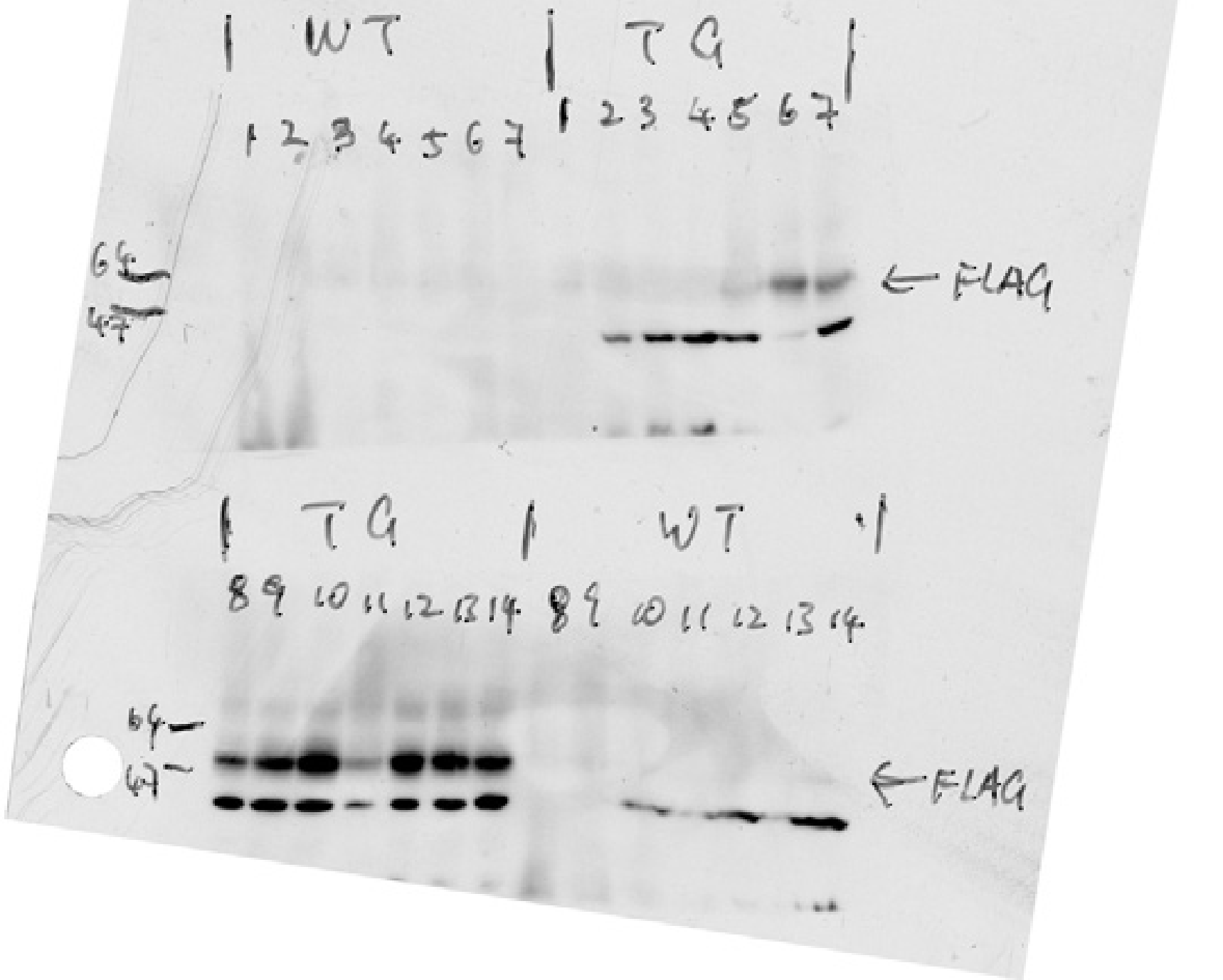
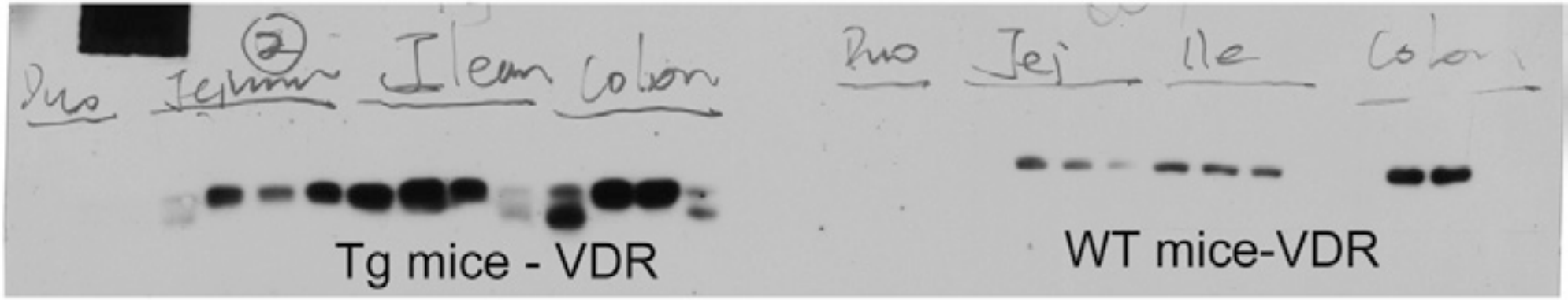


Figure 2E VDR and actin Western blots



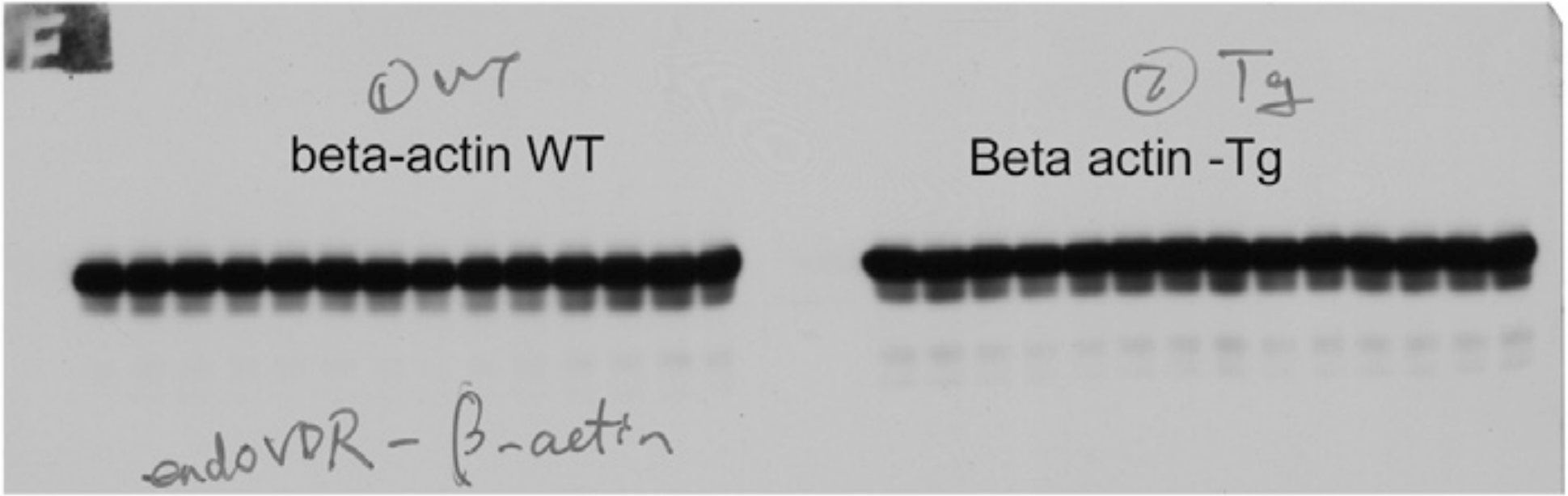


Figure 6A

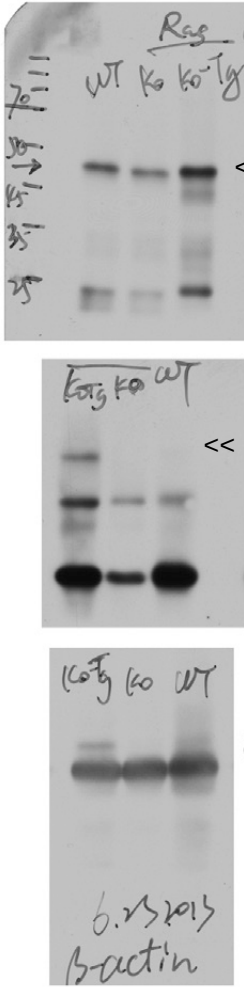
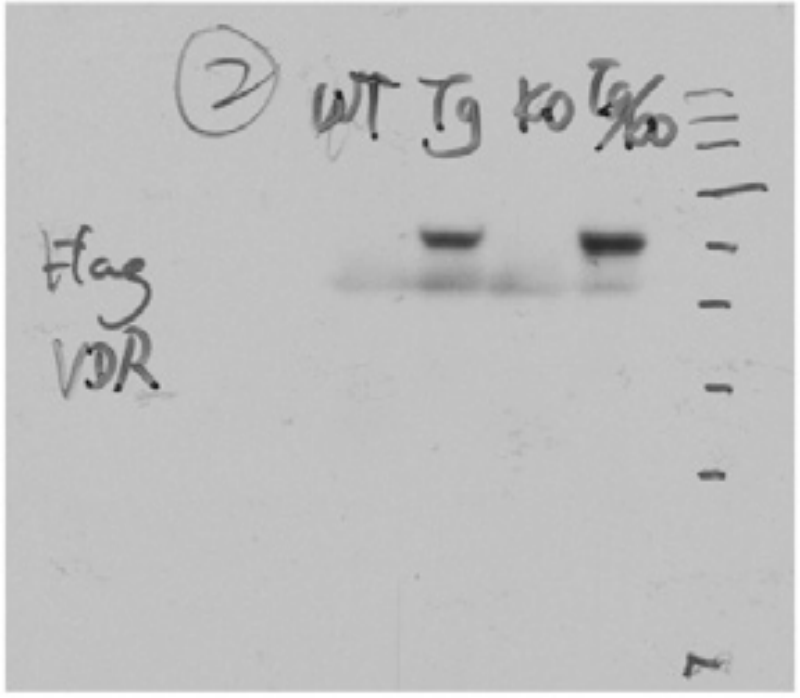
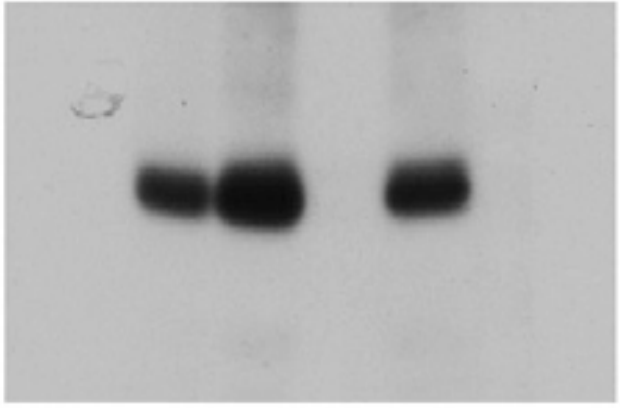

Rag
WT
Ko
Ko-Tg
<< VDR
Flag
WT
<< Flag
Ko-Tg
Ko
WT
actin
6.25.2013
B-actin

Figure 7A

Anti-Flag



Anti-VDR



Anti-actin

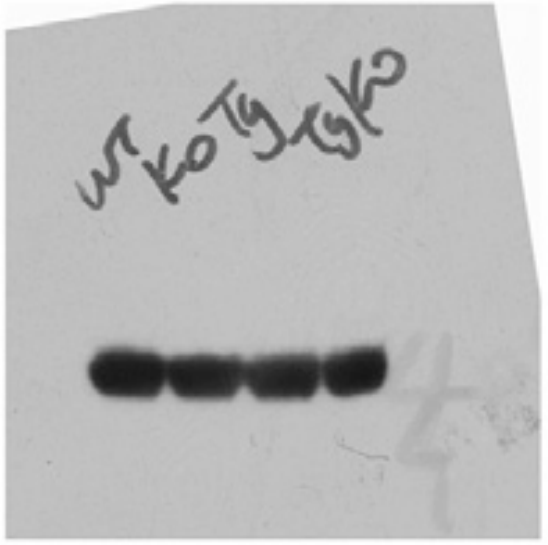
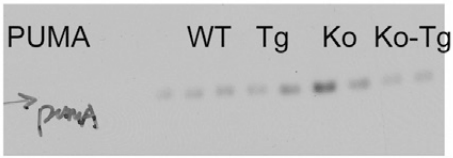
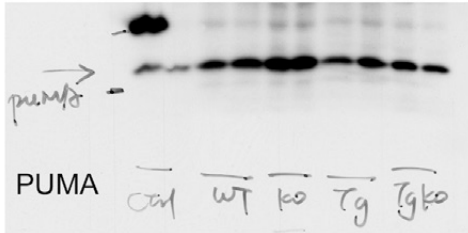


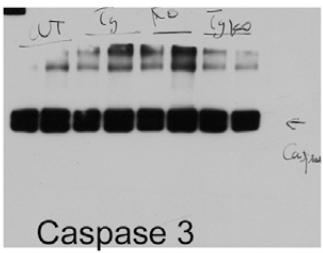
Figure 8C

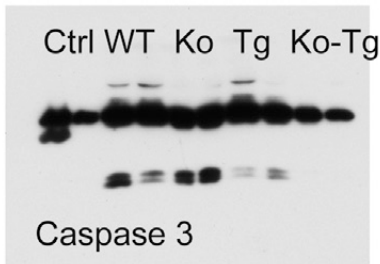
Control blots

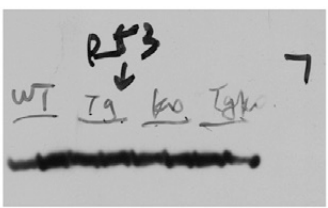
TNBS blots

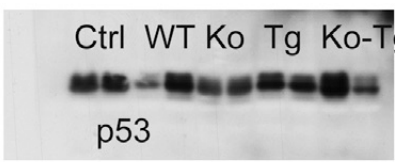


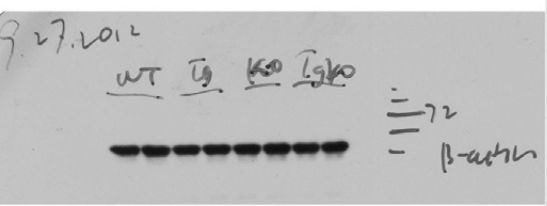












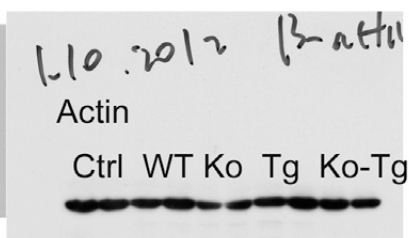
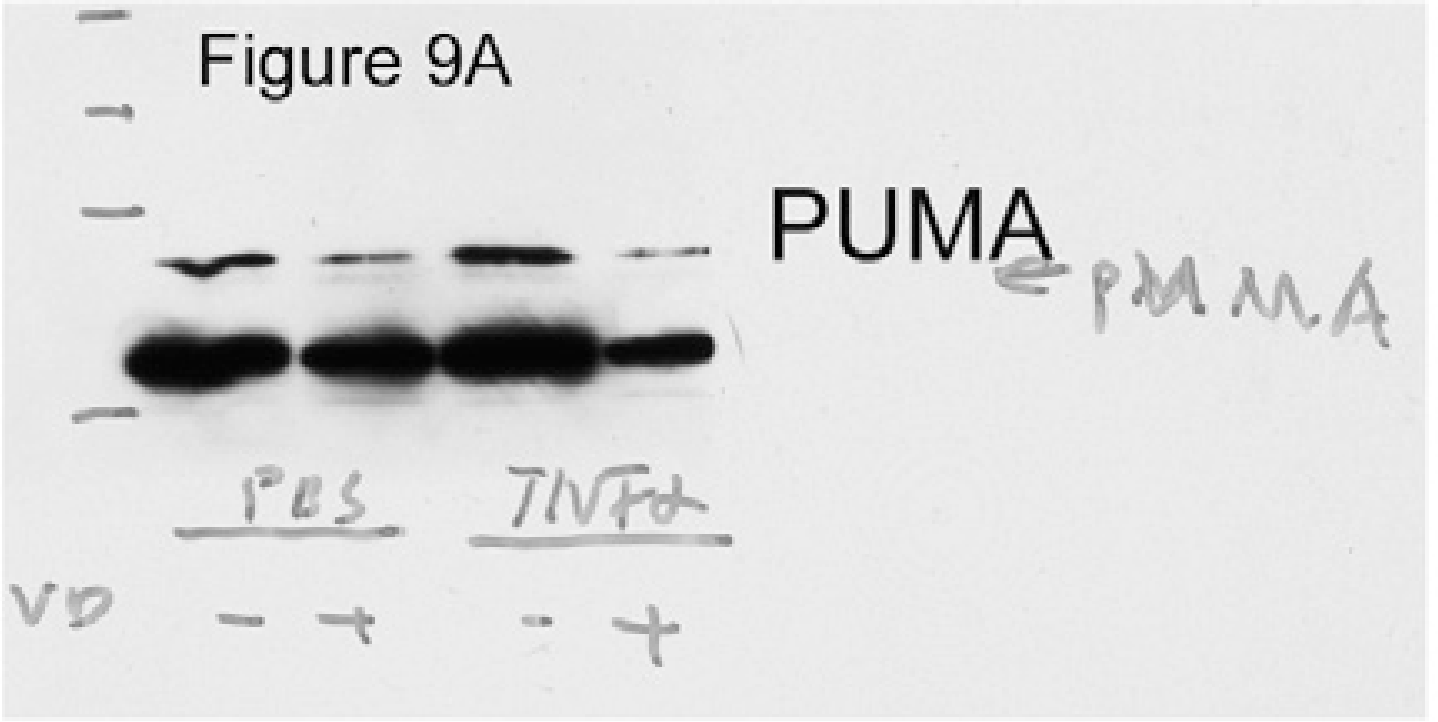
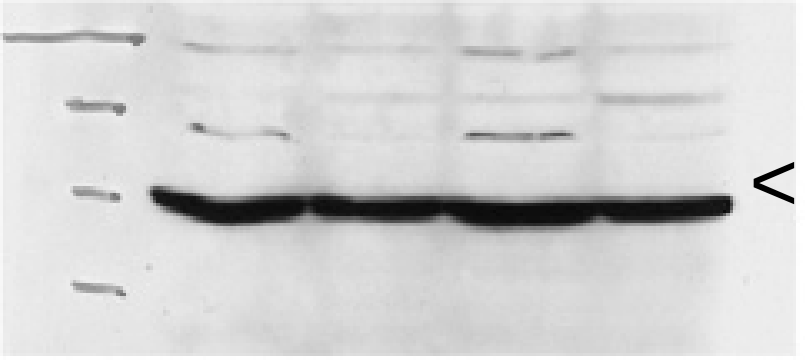


Figure 9A





Control TNFα

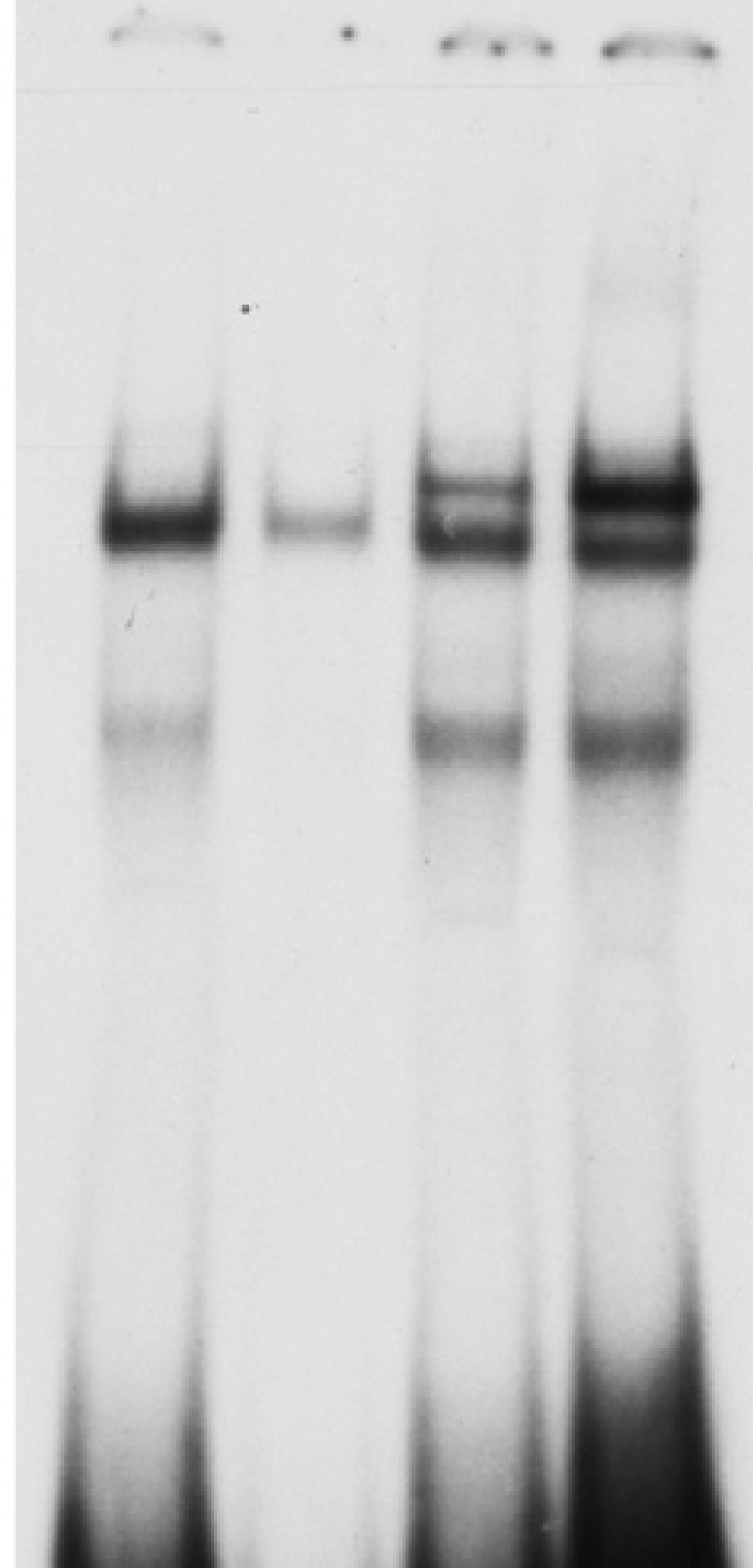
VD EtOH VD EtOH

for NFκB

in PUMA

promotor

Figure 9D



P: TNFα

stimulation

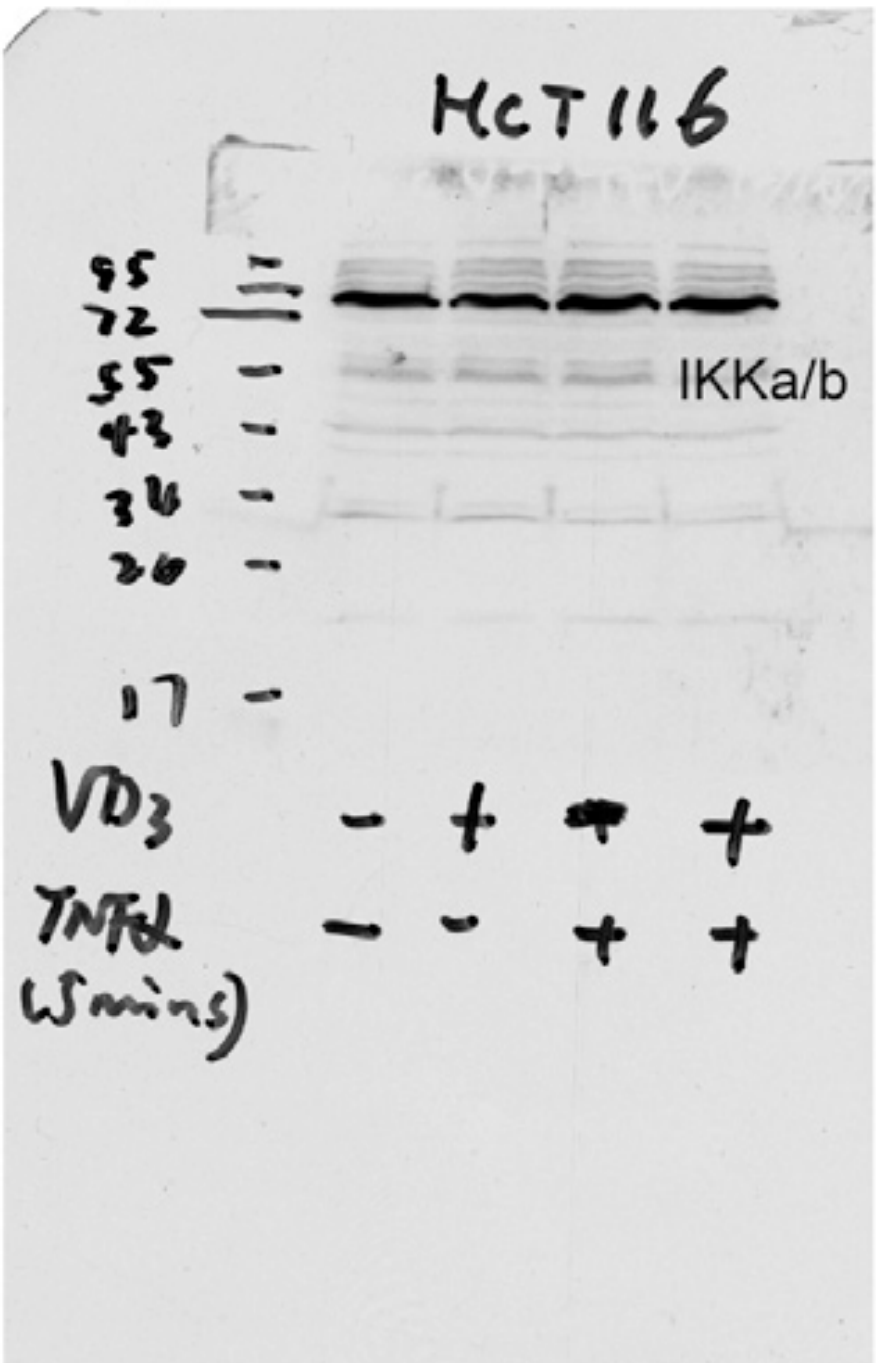
in HCT116

HCT116

hTNFα 3hr

VD 0/N

Figure 9G


HCT116
95
72
55
43
34
26
17
IKKa/b
VD3
TNFα
(5mins)

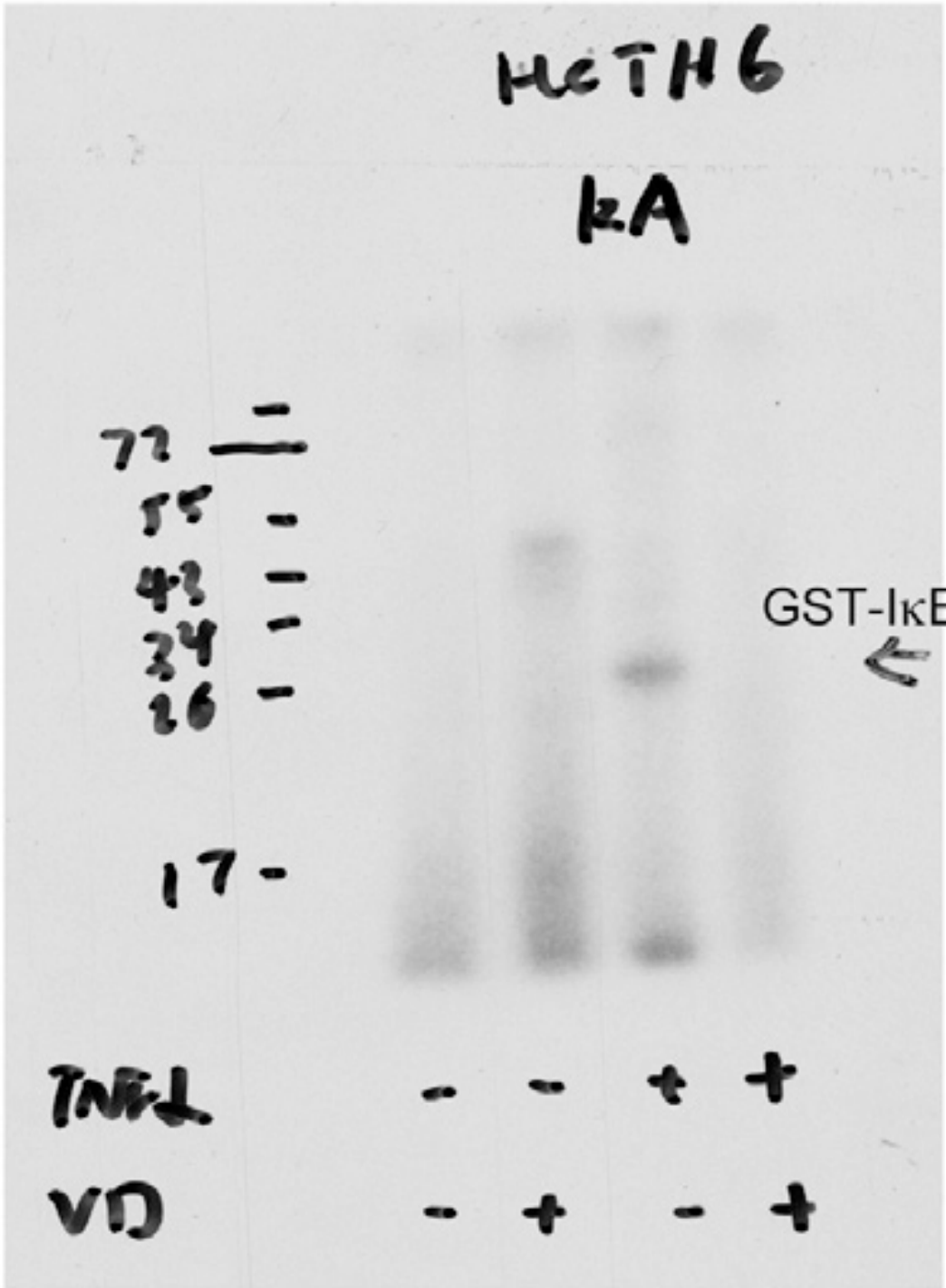

HCTH6
kA
72
55
43
34
26
17
GST-IκBα
TNFα
VD

Figure 9H

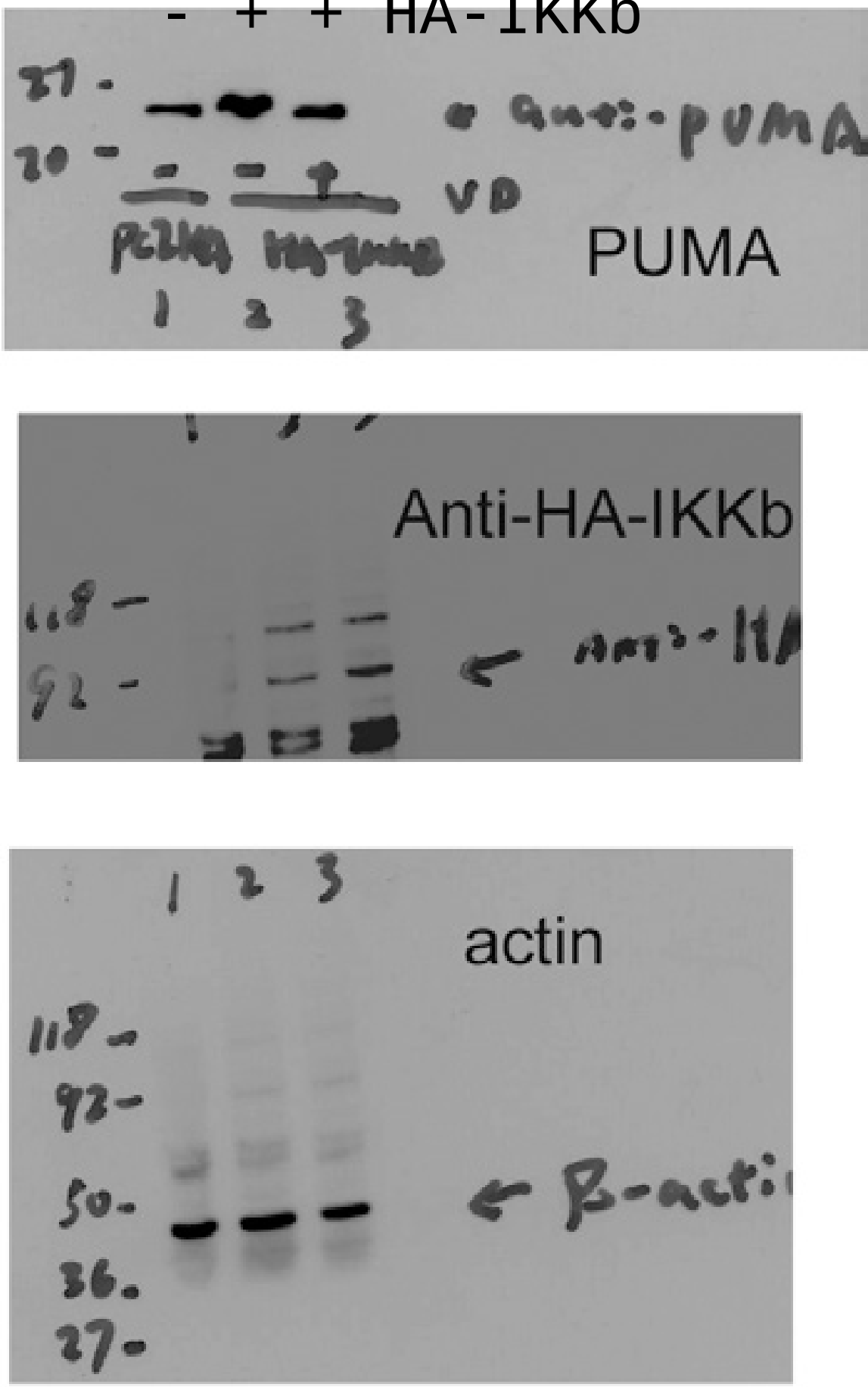
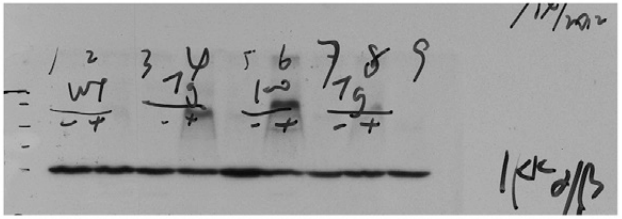
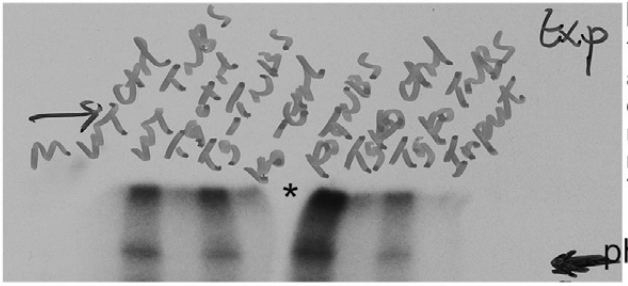


Figure 9I

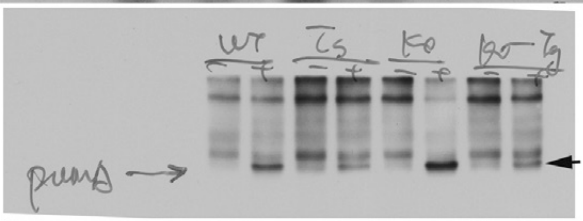


IKKa/b

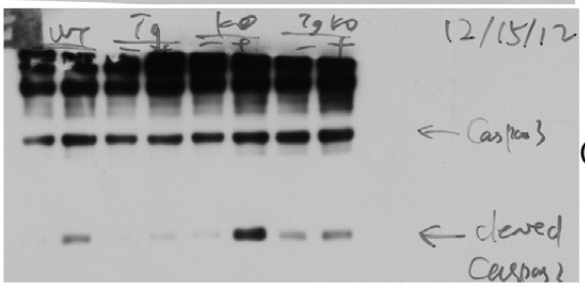


IKK kinase assay

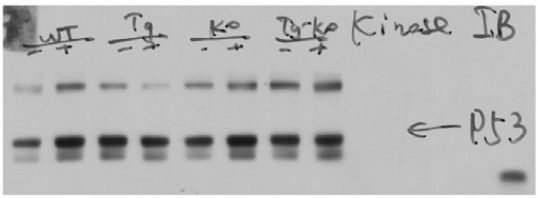
This is not a Western blot. It is autoradiography. During gel drying the gel cracked, resulting in a break in the middle, marked by an asterisk. This does not affect the result.



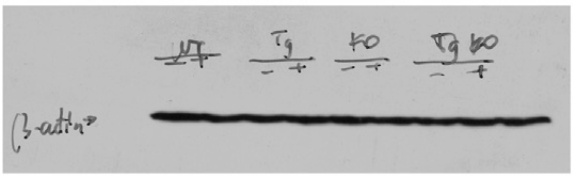
PUMA



Caspase 3



p53



b-actin