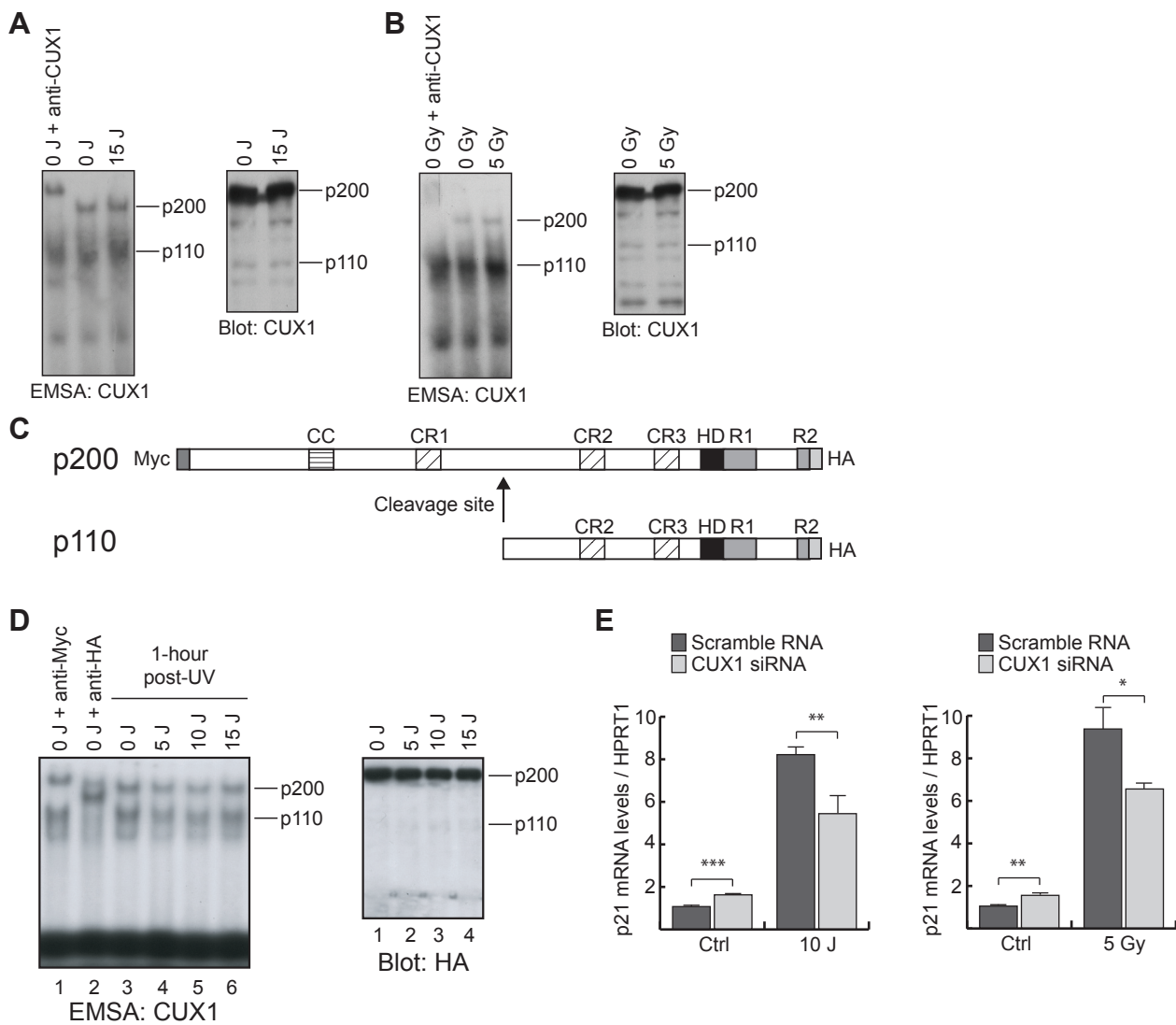


Supplementary Figure 1 - Clonogenic efficiency of MCF7s and MEFs

A 500 MCF7 cells treated with either a CUX1 specific siRNA or a scrambled control were plated for 10 days prior to fixation and staining.

B 5000 MEF cells from Cux1 knockout mice or Cux1 wild-type littermates were plated for 10 days prior to fixation and staining.



Supplementary Figure 2 –

CUX1 DNA Binding Activity and Effect of CUX1 Knockdown on p21 mRNA Expression After DNA Damage.

A Nuclear protein extracts were prepared from HS578T cells exposed to 15 J UV or left untreated. Left: DNA binding by endogenous CUX1 was assessed by Electrophoretic Mobility Shift Assay (EMSA) using double-stranded oligonucleotides containing a CUX1 consensus binding site. Right: Western blot showing equal levels CUX1 protein.

B Nuclear protein extracts were prepared from HS578T cells exposed to 5 Gy IR or left untreated. Left: DNA binding by endogenous CUX1 was assessed by EMSA as in **A**. Right: Western blot showing equal levels CUX1 protein.

C Schematic representation of recombinant CUX1 protein is shown. The full length p200 isoform is tagged at both the N-terminus (Myc tag) and C-Terminus (HA tag). p200 is cleaved at the indicated site into the p110 isoform.

D Nuclear protein extracts were prepared from NIH 3T3 cells stably expressing the p200 CUX1 recombinant protein described in **C**. Left: DNA binding by recombinant CUX1 was assessed by EMSA as in **A**. Right: Western blot showing equal levels of recombinant CUX1 proteins.

E MCF7 cells were transfected with CUX1-specific siRNA or scrambled control. Left: Cells were then exposed to 10 J of UV or left untreated. Right: Cells were exposed to 5 Gy IR or left untreated. p21 mRNA levels were measured by qPCR and normalized to HPRT1. *: P value <0.05, ** < 0.01, *** <0.001.

Supplementary Table 1 - Primers for qPCR analysis

Human cDNA	Forward primer	Reverse Primer
ATM	CAGCGCAAAGAATCTGGGG	GCACAAAGTAGGGTGGGAAAGC
ATR	TGAAAGGGCATTCCAAAGCG	CAATAGATAACGGCAGTCTGTAC
BRCA1	GCAGAGAGTCAGACCCCTTCAATGG	GCCCAGGTTTCAAGTTTCCTTTTC
CCNG1	GACAAGCCTGAGAAGGTAACCTGTG	GTGTGACTCCTCAATAGCATTTTC
CDKN1A	ATGGTGGCAGTAGAGGCTATGGAC	TGGAAGGTGTTTGGGGTCAGAC
CHEK1	CAGGTCTTTCTTATGGGATACCAG	TGGGGTGCCAAGTAACTGACTATT
CHEK2	GCTATTGGTTCAGCAAGAGAGGC	TCAGGCGTTTATCCCCACC
CUX1	TGAACGACCCCAACAATGTGG	GGCTTTTGCTGATACGCTCG
FANCD2	CGACTGAAACAGGGAGAACACAGC	GCACACTGGAAACTGGGAATGC
HPRT1	AACACTTCGTGGGGTCTTTTC	CTTTGCTTCTTGGTCAGGC
MDM2	CCATTGAACCTTGTGTGATTG	GGCAGGGCTTATTCCTTTTC
NBS1	AATGGAACAGTGAGGAATGGAGG	CAAGATTTGGAAGGTGAGAGTGATG
RAD17	TAGACCCTGACAGCGGAGATGAAG	CACTGGCACTATTCTGACTCAAAGG
RPA1	TTTCAGCCAGTAACCAGTCTTTTC	TCCAATCACATCCACGGAG
RPA2	GCCTGTTTTCAITTCCTTCTTTGG	TTCTTTTCTCTGCCCTGGAG
RPA3	AAATCTGCCCATAGACACCCG	TTTTCCAGCCTCCCTACGAAGC
SMC1L1	GGAAACCTTAGCAAACCTGCC	GCCCTGAACCAGACACTATCCAC
TOPBP1	GTGCTTCATCGTCTACCTTG	TGCTCCCTCAACAATGCCAG
TP53	CTACCTCCGCCATAAAAACTC	CCCACAACAAAACACCAGTGC
TP53BP1	TGGCAACCCCGTGAAAATC	CCACCACATCAAATACCCCTAAAG
GAPDH	TCCACCACCTGTTGCTGTA	ACCACAGTCCATGCCATCAC
ACTB	GAAGTCCCTTGCCATCCTAAAAG	ATGCTATCACCTCCCTGTGTG
UBC	CAAGACAAGGAAGGCATCCCTC	ATCCCACCTCTAAGACGGAGCAC
Mouse cDNA	Forward primer	Reverse Primer
ATM	CAGCAGCACCTCTGATTCTTACAAC	ACCTTAGCCTTAGGACCTGACTGG
ATR	AGGACACTCCAAAGCACCCTG	GCAGCCCTGTACTCTATTTCCG
BRCA1	CTGATGACCTGCTGGATGATGTTG	TGGAGTCGCTCTTCTGACGATT
CCNG1	AAGTCTTTCTGCCACTCTGACCTG	CCTTGATTTGAATGCTTCTCTGG
CDKN1A	CAGTGTGAATACCTGGGTGTC	CGTGAGACGCTTACAATCTGAGTG
CHEK1	AACAGGGCTTTCTTGTGGG	GGCATTGGTAAGATTTGTCCGC
CHEK2	CAGGAAAAGAAGTCCGGTGACCC	ATTGGAGCGTGGGAAGGAAGC
CUX1	CAGCGCTTATTTGGGGAGACC	TGGAACCAGTTGATGACGGTG
FANCD2	GGACCTTGTAGAATTCAGGGAATC	CAGGATGCTTTGTTGCTATCAGC
HPRT1	TTGGGCTTCTCACTGCTTTTC	ATCGCTAATCACGACGCTGG
MDM2	TGGAACCCAGGAAGAGTG	AACCACCAGGAACACGGAG
NBS1	CAAGTGAAGGTTGAAAAGCAGGAG	TTGACCACGACTCTGTCTGAAGTTC
RAD17	GGGACACTTACTTGTTCAGCCTG	TGTATTCCAATCACCACCGAGG
RPA1	GAGTGTGCTTTCCAGTGGTGG	AACAGACCCCTTGATTCCAGGC
RPA2	AACTCTGGTCATCAGGCTTATTGG	GCAGGCAAGTGCTTACTACTGTG
RPA3	CTGGGAAAAGATTCACTCCAC	ACAGAGCAGGGTTCGCTTG
SMC1L1	AGTGTGCTTCAGCGGATTGC	TCTGTTCAAATGCTGCTTGG
TOPBP1	ATGCTGGAATCCCCTCCTTG	GTGGTTGTGTATGGCTCACTTCAG
TRP53	TGAGGTTCTGTTTGTGCCTG	GGGTGAAATACTCTCCATCAAGTGG
TRP53BP1	GGGTTTTCTCATTTGGTGGTAC	GTTGGGTGGGTTCAITTTGTGTAC
GAPDH	TCCACCACCTGTTGCTGTA	ACCACAGTCCATGCCATCAC
ACTB	TATTGGCAACGAGCGTTCC	GGCATAGAGGTCTTTACGGATGTC
UBC	CGCACCTGTGACACTACAACATC	CCCAAGAACAAGCACAAGGAGG
Human genomic	Forward primer	Reverse Primer
ATM	TGGGCTCTGGAATCATACGGC	TAACGCTCACGAGTGCTCACCAC
ATR	ACTCTGCTGTTCTCAAGCCTGG	TCGCTGGACTGTCATAGTTCTCAC
BRCA1	CAGAAAGACCAAGCGTCTC	CAATAAGCCGCAACTGGAAG
CCNG1	GATTGGCCGGACTTCTCAC	GGGACTCGTAGGCAAGAGGA
CDKN1A	CAGACAACCTCACTCGTCAAATCCTC	AATCTCCCTACACCCTACACTACC
CHEK1	GCCGCCGACATTGACA	CATGCCCTCCCTCACTAATC
CHEK2	CCCTGAGACTGAGGTTCTTGG	CCACCCTAACTTTCCACGGC
FANCD2	GTGGAGCAATGGTCGTAGTCTCTC	ATGAGGAAGCCAAGGTTCCG
MDM2	GGTGCTGTCGGGTCA	ACTGCAGTTTCCGAACGTGT
NBS1	ACCTGGTGGTTGGAAAAGGAAC	CAAACGCACGAAACTACATAACTGG
RAD17	GAGAAACGACCCGAAATGCTC	TGGTGGATGCCTCACTCCTTAG
RPA1	CCATCCTTACTTGACCCTGTCTG	CATTGGAGAGTTGAAATAGCCTGG

RPA2	CGGCGTGCTCAGGTTT	TCATAGGCAAGAGGGCGTAG
RPA3	GGCAAGAGGGAAGGCGAGACA	GGCGGGAGTCGGCACT
SMC1L1	CAACAAACTTGCTCCTGCG	GCATAATCCTGCTGTGACTTCTGTC
TOPBP1	GCAGCAGAAGAGCGGAAATGTC	GCAAAGCCCTAAACCCAAAGG
TP53	CAGCCCGAACGCAAAG	CTTGTCATGGCGACTGTCC
TP53BP1	GCCCGCCACTCAAGAAATCC	TTCACGCCCTCTCAAGGTCC
GAPDH	TTTTCCCTTCTTGACTCACCC	GTGCCTTTCATTCCATCCAGC
ACTB	AAGGCAACTTTCGGAACGGC	CCAAAACCTCCCTCCTCCTTTC
UBC	AAAAGAGGCGGAAACCCAC	CTCCCTGTTGGCATCAAGTAGG