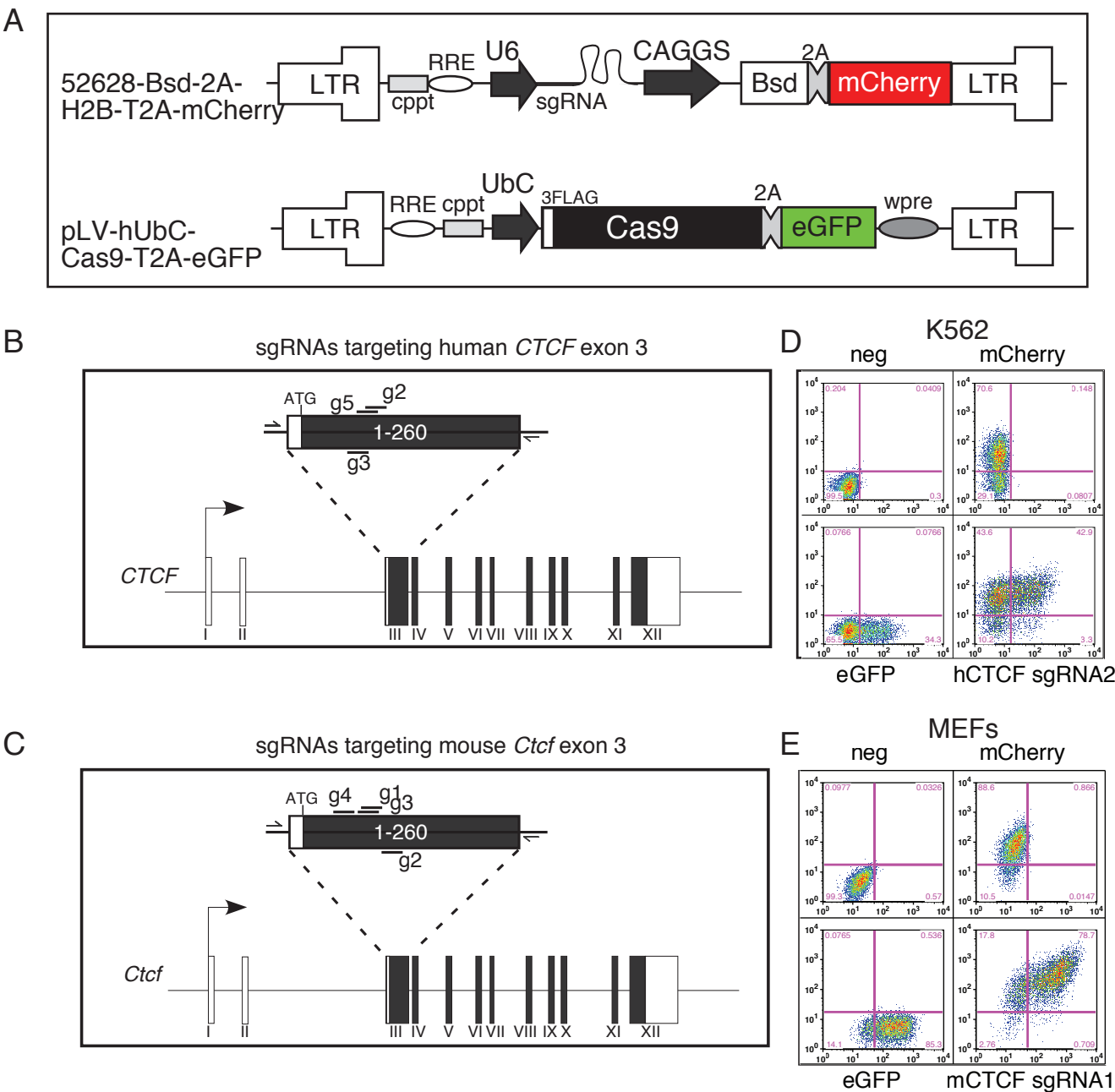
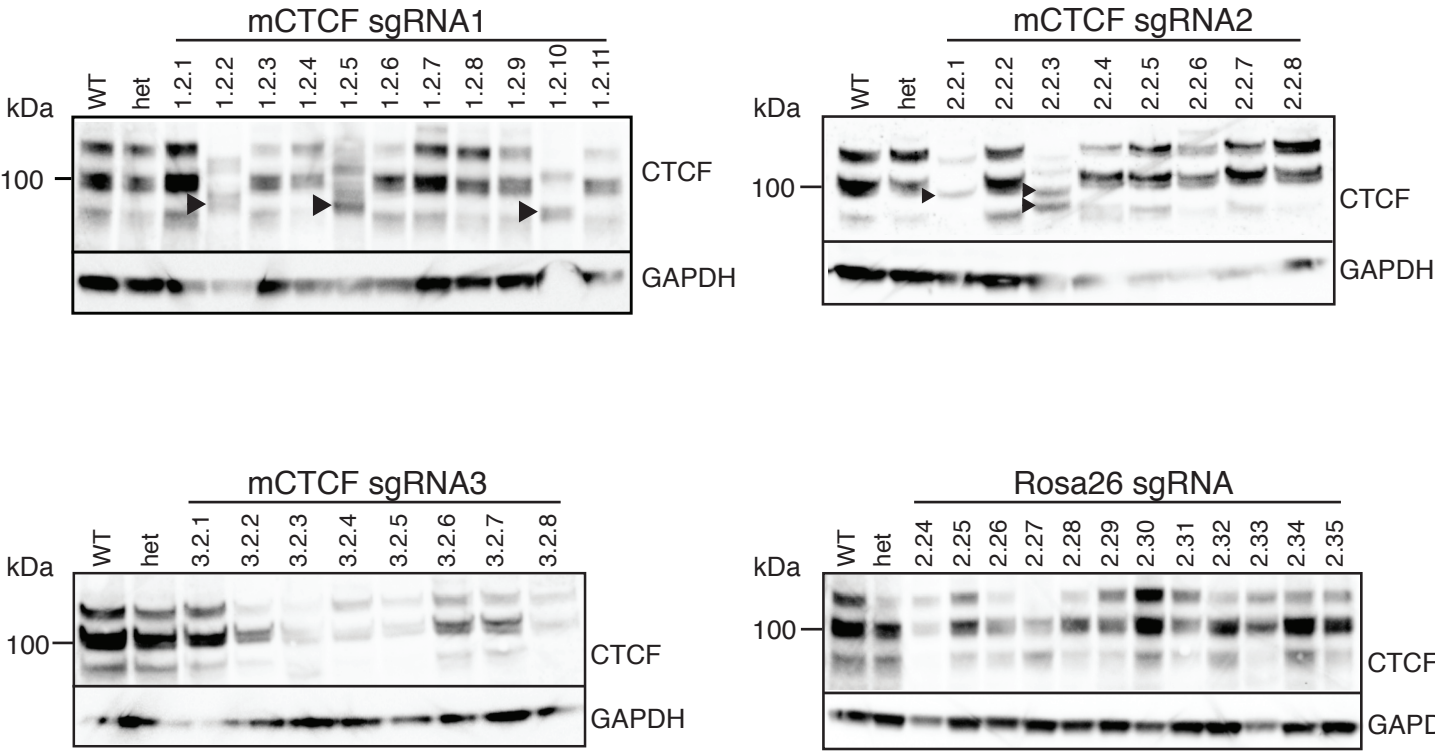
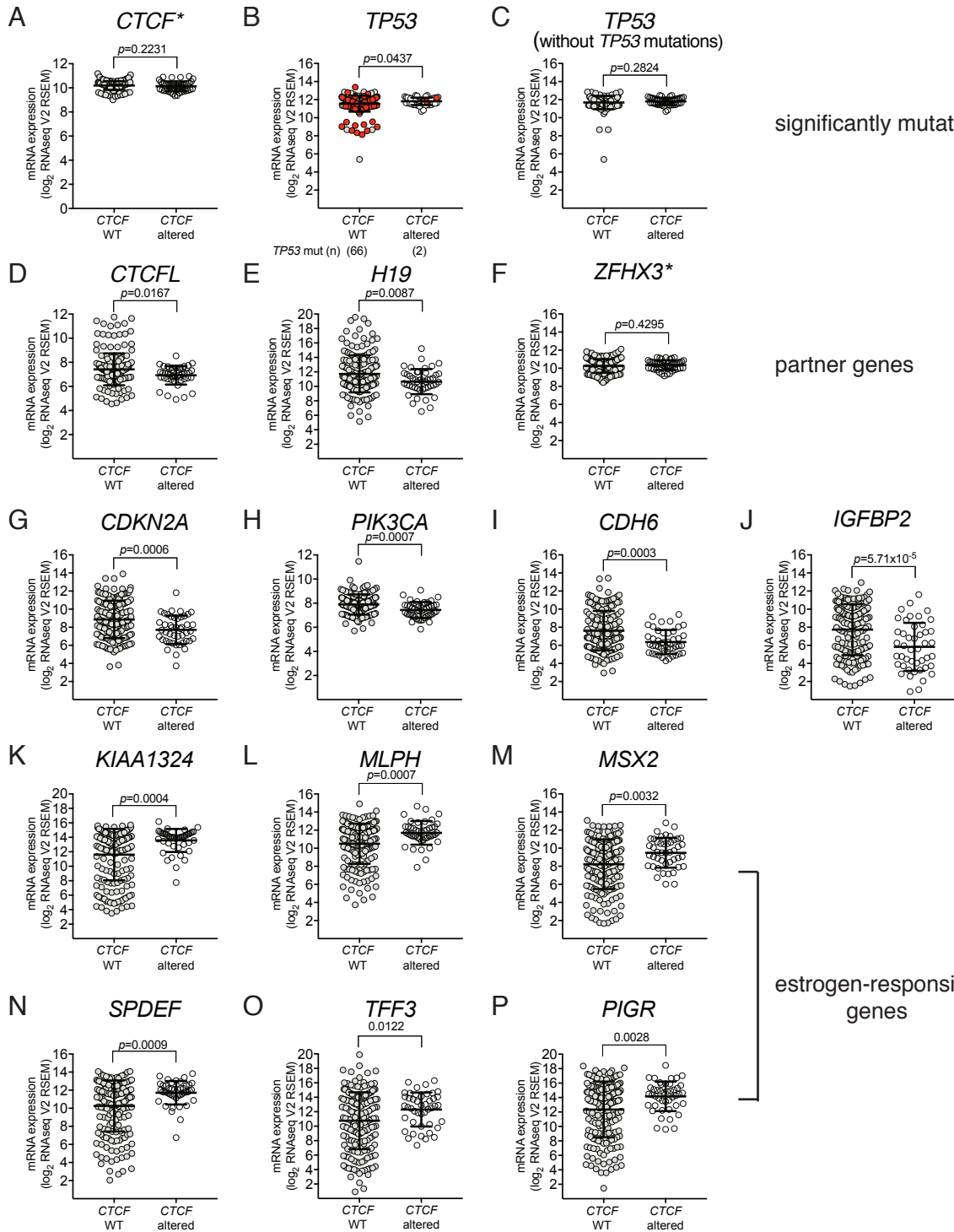


Bailey_Supplementary_Figure_1



Supplementary Figure_2





significantly mutated genes

partner genes

tumour suppressor genes

estrogen-responsive genes

Supplementary Table 1: Oligonucleotides used in this study.

Application	Name	Sequence	Purpose
CRISPR/Cas 9 sgRNA	hCTCF-gRNA2-s	accgAGGAACAGCCCATAAACATAGG	sgRNA oligo that targets human <i>CTCF</i> coding exon 3; clone into <i>BspMI</i> sites
	hCTCF-gRNA2-as	aaacCCTATGTTTATGGGCTGTTTCCT	
CRISPR/Cas 9 sgRNA	hCTCF-gRNA3-s	accgAACCTGTAAAGTTATAATCTGGG	sgRNA oligo that targets human <i>CTCF</i> coding exon 3; clone into <i>BspMI</i> sites
	hCTCF-gRNA3-as	aaacCCCAGATTATAACTTTACAGGTT	
CRISPR/Cas 9 sgRNA	hCTCF-gRNA5-s	accgAACTTTACAGGTTGTAAATATGG	sgRNA that targets human <i>CTCF</i> coding exon 3; clone into <i>BspMI</i> sites
	hCTCF-gRNA5-as	aaacCCATATTTACAACCTGTAAAGTT	
PCR	hCTCF-T7E1-5'	AATAAAGGCAGGGGAAATGG	655 bp in human <i>CTCF</i> ; confirmation of gene editing using T7 endonuclease I
	hCTCF-T7E1-3'	ACGCAGTTTGCTCTTTTGG	
CRISPR/Cas 9 sgRNA	AAVS1-gRNA-s	accgACCCACAGTGGGGCCACTA	sgRNA that targets AAV integration site AAVS1; clone into <i>BspMI</i> sites
	AAVS1-gRNA-as	aaacTAGTGGCCCCACTGTGGGGT	
PCR	AAVS1-T7E1-5'	AGGTTCTGGGAGAGGGTAGC	668 bp in human AAVS1; confirmation of gene editing using T7 endonuclease I
	AAVS1-T7E1-3'	CTGGACAACCCCAAAGTACC	
CRISPR/Cas 9 sgRNA	mCTCF-gRNA1-s	accgAACCTGCAAGGTTATGATCT	sgRNA that targets mouse <i>CTCF</i> coding exon 3; clone into <i>BspMI</i> sites
	mCTCF-gRNA1-as	aaacAGATCATAACCTTGCAGGTT	
CRISPR/Cas 9 sgRNA	mCTCF-gRNA2-s	accgGAGGAACAGCCCATTAACAT	sgRNA that targets mouse <i>CTCF</i> coding exon 3; clone into <i>BspMI</i> sites
	mCTCF-gRNA2-as	aaacATGTTAATGGGCTGTTCCCTC	
CRISPR/Cas 9 sgRNA	mCTCF-gRNA3-s	accgCAACCTGCAAGGTTATGATC	sgRNA that targets mouse <i>CTCF</i> coding exon 3; clone into <i>BspMI</i> sites
	mCTCF-gRNA3-as	aaacGATCATAACCTTGCAGGTTG	
CRISPR/Cas 9 sgRNA	mCTCF-gRNA4-s	accgTCCACTGCAGCCTCTGCTTC	sgRNA that targets mouse <i>CTCF</i> coding exon 3; clone into <i>BspMI</i> sites
	mCTCF-gRNA4-as	aaacGAAGCAGAGGCTGCAGTGGA	
PCR	mCTCF-T7E1-5'	TGCCTGTGGGTTCTAAGTGC	641 bp in mouse <i>CTCF</i> coding exon 3; confirmation of gene editing using T7 endonuclease I
	mCTCF-T7E1-3'	TGAAATCCTTCAGGCAAAGG	
CRISPR/Cas 9 sgRNA	Rosa26-gRNA-s	accgACTCCAGTCTTTCTAGAAGA	sgRNA that targets mouse <i>Rosa26</i> . Clone into <i>BspMI</i> sites
	Rosa26-gRNA-as	aaacTCTTCTAGAAAGACTGGAGT	
PCR	Rosa26-T7E1-5'	CGTGCAAGTTGAGTCCATCCGCC	749 bp in mouse <i>Rosa26</i> ; confirmation of gene editing using T7 endonuclease I
	Rosa26-T7E1-3'	ACTCCGAGGCGGATCACAAGCA	
<i>CTCF</i> ^{+/−} mouse genotyping	CTCFwt-5'	TGGGCTCTATGGCTTCTGAG	Detects wildtype allele 519 bp and knockout allele 348 bp in mouse <i>CTCF</i>
	CTCFwt-3'	CATGCCATCCTACTGGTGTG	
	CTCF(0)-3'	CTCACGCCTGAGATGATCC	