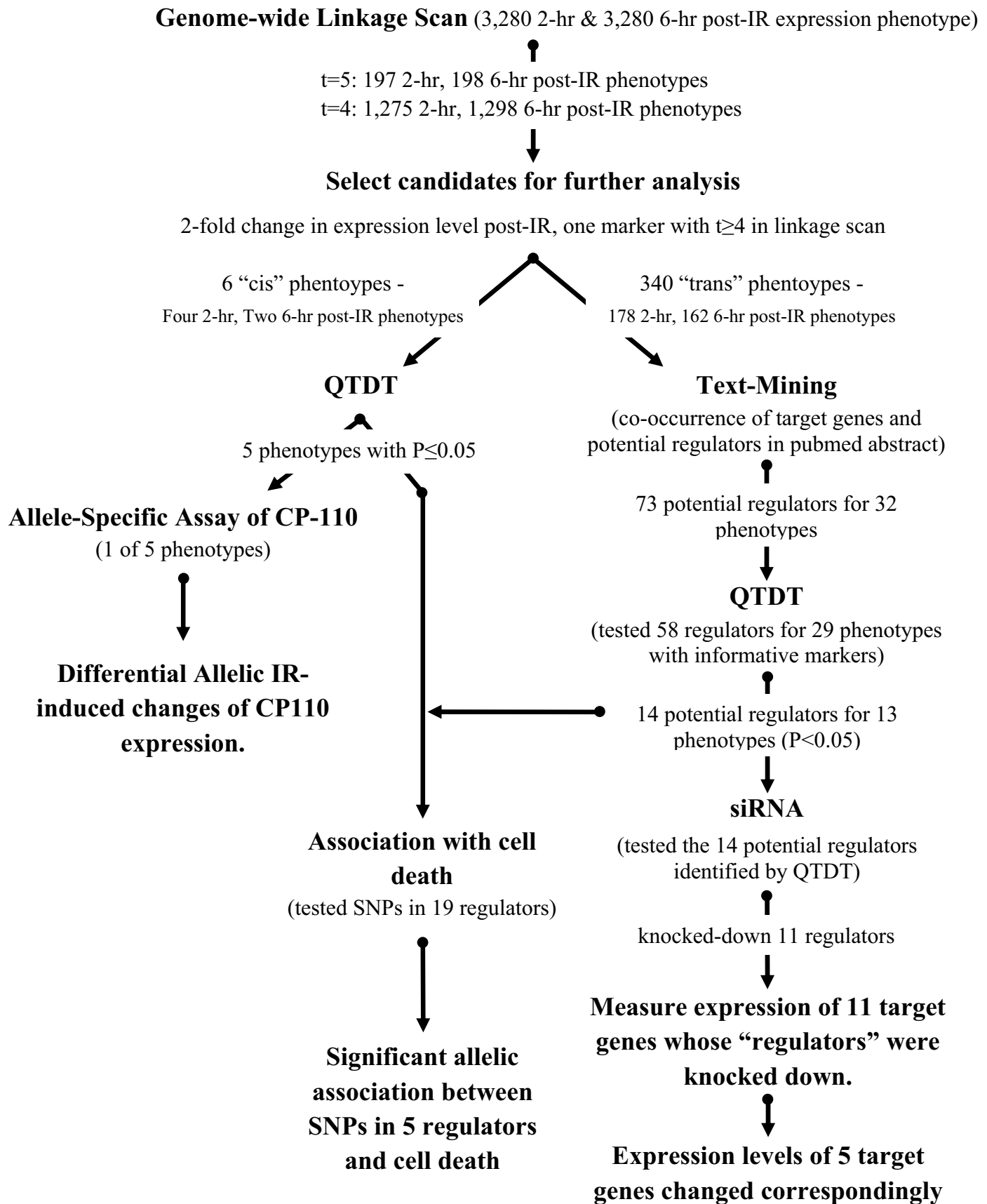


Supplementary Material

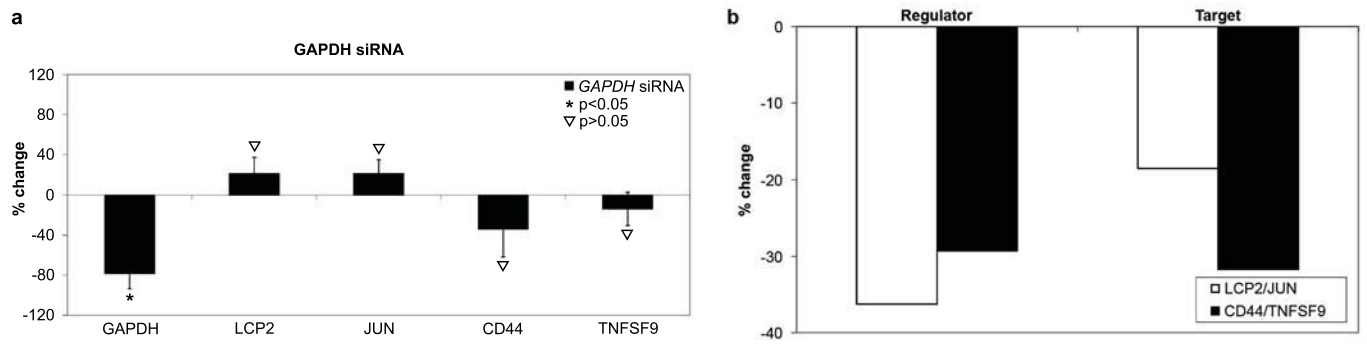
Genetic analysis of radiation-induced changes in human gene expression

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Supplementary Figure 1. Flowchart showing experimental steps



Supplementary Figure 2



Supplementary figure legend

Supplementary Figure 1. A flow chart of the manuscript. A brief summary of experimental approaches and results is presented.

Supplementary Figure 2. Knockdown experiments. (a) Effect of *GAPDH* siRNA transfection on expression of *GAPDH* and selected regulator and target genes. The changes in expression levels are represented as mean \pm s.e.m of 4 or more independent transfections. (b) Regulators of expression levels of IR-responsive genes were knocked down by indicated shRNAs. The changes in expression levels of the regulators and their corresponding target genes after knockdown of the regulators are shown. Data are represented as mean of 2 independent transfections.

Supplementary Table 1. SNPs in trans-acting regulators are significantly associated with expression levels of their target genes.

Regulator	SNP	Major allele	Target (time-point post IR)	Average Fold Change of Target Gene AA*	Average Fold Change of Target Gene AB*	Average Fold Change of Target Gene BB*	R ²	P-value
CD44	rs2553809 TC	T	TNFSF9 (2 hr)	2.8	2.3	1.9	0.25	0.005
SERPINE2	rs1377609 GA	G	ARHGDI1 (2 hr)	1.1	0.7	NA	0.16	0.03
FAS	rs10509561 TA	T	TRAF4 (6 hr)	1.8	1.5	1.3	0.16	0.03

* A represents the major allele, and B is the minor allele.

Supplementary Table 2. PCR primers for RT-PCR analysis

Primer Name	Sequence (5' to 3')
<i>ACTB</i> FOR	AAGATCATTGCTCCTCCTGAGC
<i>ACTB</i> REV	CATACTCCTGCTTGCTGATCCA
<i>ARHGDI1</i> FOR	ACAAACAAGGGACCAAGTGC
<i>ARHGDI1</i> REV	CTGGCAGACACAACACGAAG
<i>CD44</i> FOR	AGTCCCTGGATCACCGACAG
<i>CD44</i> REV	TTGGTCTCTGGTAGCAGGGATT
<i>FAS</i> FOR	CCTGCTACAAATGGCAGCTT
<i>FAS</i> REV	CTTGGGGGTATGACAAGAGC
<i>GAPDH</i> FOR	CGTGGAAGGACTCATGACCA
<i>GAPDH</i> REV	CACAGTCTTCTGGGTGGCAGT
<i>JUN</i> FOR	CCACGTTAACAGTGGGTGCC
<i>JUN</i> REV	AATGTTTGCAACTGCTGCGT
<i>LCP2</i> FOR	TGATTTGTTTTTTACAGCCAAACCT
<i>LCP2</i> REV	AACTAATGAATGCCTCTGACTGACAG
<i>SERPINE2</i> FOR	CAAAGCTTCAGCAGCAACAACCT
<i>SERPINE2</i> REV	GGAGGCGATGATCTTGCAAT
<i>SSB</i> FOR	CCTGCATCCAAACAACAGAA
<i>SSB</i> REV	CCGCAAACAAAAGTCGTTTA
<i>TNFSF9</i> FOR	CTGGTGGCCCAAATGTTCT
<i>TNFSF9</i> REV	GGTCACTGTACCAGCTCAGGG
<i>TRAF4</i> FOR	CTTCTTGGGTAGGGCAGACA
<i>TRAF4</i> REV	ATGGCTCTTGGGACATAGCA

Supplementary Table 3. siRNA oligonucleotides used in knockdown experiments

Gene Symbol	Genebank ID	siRNA ID	Location	Sequence
LCP2	NM_005565	A-012120-13	ORF	GUGGUACGUUUCUUAUAUU
LCP2	NM_005565	A-012120-14	3'-UTR	GCAAUAAUUUAAGAGGCUU
LCP2	NM_005565	A-012120-15	3'-UTR	UUAUUCUUCUUCAAUGUUU
LCP2	NM_005565	A-012120-16	3'-UTR	GUUUUAUACAUGUAAUUUG
CD44	NM_001001392	A-009999-14	ORF	CUCUGAGCAUCGGAUUUGA
CD44	NM_001001392	A-009999-15	3'-UTR	CCAUUCACCUUUUAUGUUAU
CD44	NM_001001392	A-009999-16	3'-UTR	CCUUUGAUCAGUAUAAUUU
CD44	NM_001001392	A-009999-17	3'-UTR	CYGUUAUAUCAGAGGAGUA
SERPINE2	NM_006216	A-012737-13	ORF	CCCCAUGAUUUUAUGGUAC
SERPINE2	NM_006216	A-012737-14	ORF	CUGACAUGUUUGAUUCAUC
SERPINE2	NM_006216	A-012737-15	ORF	CCAAGAAGAAUAAAGACAU
SERPINE2	NM_006216	A-012737-16	ORF	CCAUGUUUCUCAUAUCUUG
FAS	NM_152876	A-003776-14	3'-UTR	GGAUGAAAGAUUAAGAUUA
FAS	NM_152876	A-003776-15	3'-UTR	CGAAAUGUUCAAUAAUGU
FAS	NM_152876	A-003776-16	3'-UTR	UUUCUAAGAUUUAAAGAUUC
FAS	NM_152876	A-003776-17	3'-UTR	GUUUGGAAUUAUAAAAUUAU
SSB	NM_003142	A-006877-13	ORF	UUGUUGUGUUUGAUAGCAU
SSB	NM_003142	A-006877-14	ORF	GUCGUAGAUUUAAAGGAAA
SSB	NM_003142	A-006877-15	ORF	UGGUGAAAUAAAUGGAUA
SSB	NM_003142	A-006877-16	3'-UTR	GAGAUUUCUUUGAAUGUAU

Supplementary Table 4. shRNA constructs used in knockdown experiments

LCP2

TRCN0000029811 **CCGGGATCGTTCATTAGCTCCGTTTCTCGAGAAACGGAGCTAATGAACGATCTTTT**

Clone ID: NM_005565.2-937s1c1

Accession Number(s): NM_005565.3

Region: CDS

CD44

TRCN0000057566 **CCGGCCAACCTCTAATGTCAATCGTTCTCGAGAACGATTGACATTAGAGTTGGTTTTTG**

Clone ID: NM_000610.3-2215s1c1

Accession Number(s): NM_001001390.1, NM_001001389.1, NM_000610.3

Region: CDS