

Supplemental Table 1. Comparison of factor occupancy and gene expression data between *Kininis et al., 2007* and other published ChIP-chip studies.

Probe ID	Gene Name	Symbol	RefSeq	Class	E2:	Kininis <i>et al.</i>						Laganieri <i>et al.</i> , 2005					Carroll <i>et al.</i> , 2005 and 2006					Cheng <i>et al.</i> , 2006					Frasor <i>et al.</i> , 2003	Gene-specific studies
						PCR-generated promoter microarray						PCR-generated promoter microarray					Affymetrix oligonucleotide tiling microarray					PCR-generated CpG island microarray					Affymetrix oligo array	Regulated by E2 or ER***
						Pol II	ER	U	E	SRC	AcH	RNA change	Pol II	ER	SRC	AcH	RNA change	Pol II	ER	SRC	AcH	RNA change	Pol II	ER	SRC	Ac-H3K9	RNA change	RNA change upon E2**
C1-1	PDZ domain containing 1	PDZK1	NM_002614	IIA		-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	up				
E1-140	Heat shock 22kDa protein 8	HSPB8	NM_014365	IIA		-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	up				
E1-66	Oviductal glycoprotein	OVGP1	NM_002557	IIA		-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	up				
E3-2	Adenylyl cyclase-associated protein 2	CAP2	NM_006366	IIA		-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	up				
G1-7	Peroxisome proliferative activated receptor alpha	PPARG	NM_005037	IIA		-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	n.d.				
H1-102	G protein-coupled receptor 133	GPR133	NM_198827	IIA		-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	n.d.				
H1-116	GREB1 protein	GREB1	NM_014668	IIA		-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	up				
H1-126	Neuroblastoma breakpoint family, member 1	NBPF15	NM_173638	IIA		-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	up				
H1-146	Tcd37 homolog / na	PRUNE	NM_021222	IIA		-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	n.d.				
H1-151	Wingless-type MMTV integration site 2	WNT16	NM_016087	IIA		-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	n.d.				
H1-168	Solute carrier family 27 (fatty acid transporter)	SLC27A2	NM_003645	IIA		-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	n.d.				
H1-64	Interleukin 20	IL20	NM_018724	IIA		-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	n.d.				
H1-79	UDP glycosyltransferase 2 family, polypeptide 1	UGT2B15	NM_001076	IIA		-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	n.d.				
J1-8	Trefoil factor 1	TFF1	NM_003225	IIA		-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	up				
J4-8	Caspase 7, apoptosis-related cysteine protease	CASP7	NM_001227	IIA		-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	up				
A1-11	Carbonic anhydrase XII	CA12	NM_001218	IIIB		-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	up				
A1-12b	c-Fos	FOS	NM_005252	IIIB		-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	up				
A1-16	WNT1 inducible signaling pathway protein 1	WISP2	NM_003881	IIIB		-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	up				
E1-118	239FB mRNA	C11orf8	NM_001584	IIIB		-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	up				
E1-145	Hypothetical protein FLJ13710	FLJ13710/TH	NM_024817	IIIB		-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	n.d.				
E1-18	Homeo box C5	HOXC5	NM_018953	IIIB		-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	up				
E1-25	Progesterone receptor	PGR	NM_000926	IIIB		-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	up				
E1-62	Growth arrest specific protein, 6	GAS6	NM_000820	IIIB		-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	n.d.				
E1-77	Melanoma differentiation associated protein 1	MDA1	NM_006850	IIIB		-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	n.d.				
E2-58	Repressor of estrogen receptor activation	REA (PHB2)	NM_007273	IIIB		-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	up				
E3-10	BH-protocadherin (brain-heart)	PCDH7	NM_032456	IIIB		-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	n.d.				
E3-118	TNF receptor-associated factor 1	TRAF1	NM_005658	IIIB		-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	n.d.				
E3-66	Keratin 15	KRT15	NM_002275	IIIB		-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	n.d.				
E4-16	Transducer of ERBB2, 1	TOB1	NM_005749	IIIB		-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	n.d.				
E6-26	Link protein (cartilage linking protein)	CRTL1 / HAP	NM_001884	IIIB		-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	n.d.				
F1-27	Transglutaminase 3 (E polypeptide, pI 4.5)	TGM3	NM_003245	IIIB		-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	n.d.				
F1-55	Bcl2	BCL2	NM_000633	IIIB		-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	up				
G1-100	ALEX1 protein	ALEX1	NM_016608	IIIB		-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	n.d.				
G1-151	Breast cancer metastasis-suppressor	BRMS1	NM_015399	IIIB		-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	up				
H1-148	Neuron navigator 3 / na	NAV3	NM_014903	IIIB		-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	n.d.				
H1-155	Coenzyme Q4 homolog (yeast) / hypoxanthine phosphoribosyltransferase 4	COQ4 / CLO1	NM_016035	IIIB		-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	n.d.				
H1-157	AHA1, activator of heat shock 90kDa class B members	AHSA1 / C14	NM_012111	IIIB		-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	n.d.				
H1-37	B-cell CLL/lymphoma 3	BCL3	NM_005178	IIIB		-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	up				
IGF1	Insulin-like growth factor 1 (somatomedin C)	IGF1	NM_000618	IIIB		-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	n.d.				
J2-9	c-myc	c-myc	NM_002467	IIIB		-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	up				
F1-31	Estrogen receptor 1	ESR1	NM_000125	IVA		++	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	dn				
G1-142	Breast carcinoma amplified sequence 1	BCAS1	NM_003657	IVA		++	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	dn				
H1-127	Chromosome 18 open reading frame 1	C18orf24	NM_145060	IVA		++	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	dn				
H1-128	ATPase family, AAA domain containing 1	ATAD4	NM_024320	IVA		++	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	dn				
E2-15	MAPK kinase 6	MAP2K6	NM_002758	IVB		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	n.d.				
E2-1b	BTG family, member 2	BTG2	NM_006763	IVB		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	dn				
E2-23	Inhibitor of DNA binding 1	ID1	NM_002165	IVB		++	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	dn				
E2-6	B-cell linker	BLNK	NM_013314	IVB		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	dn				
E3-113	Signal transducing adaptor molecule 1	STAM	NM_003473	IVB		++	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	dn				
E3-46	Fibronectin leucine rich transmembrane protein 1	FLRT2	NM_013231	IVB		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	n.d.				
E5-10	Small inducible cytokine A2 (monocyte chemoattractant protein 1)	SCYA2 / CCL1	NM_002982	IVB		++	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	n.d.				
E5-14	v-erb-b2 avian erythroblastic leukemia virus integration site 1	ERBB3	NM_001982	IVB		++	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	dn				
G1-150	BRCA1-interacting protein 1	BRIP1	NM_032043	IVB		++	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	dn				
G1-235	Nuclear receptor subfamily 4, group 1, member 1	NRA4A1	NM_002135	IVB		++	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	dn				
H1-138	Translin-associated factor X interacting protein 1	TSNAXIP1	NM_018430	IVB		+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	n.d.				
E2-2	Cyclin G2	CCNG2	NM_004354	IVB		++	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	dn				
D1-2	Cytochrome P450, Cyp1B1	CYP1B1	NM_000104	IIIA		+	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	up				
J3-9	Estrogen receptor Binding site Associated protein 1	EBAG9	NM_004215	IIIA		+	++	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	up				

\*E2 treatment for 3 hours

\*\*E2 treatment for 4 hours

\*\*\*The numbers in parentheses in column AW correspond to specific references in the "Supplemental References" (Section 4) of the Supplemental Materials.

See the supplemental text for a legend to accompany this table.

**Conclusions:**

As this tabular comparison reveals, our ERα ChIP-chip results after a 45 min. treatment with E2 generally agree with the results from Laganieri *et al.*, 2005 and Carroll *et al.*, 2005 and 2006 (81% and 65% agreement, respectively). In addition, our ChIP-chip results for Pol II after a 45 min. treatment with E2 show 53% agreement with the Pol II ChIP-chip results from Carroll *et al.*, 2005 and 2006, as well as 48% agreement with the microarray expression results after a 4 h treatment with E2 from Frasor *et al.*, 2003. The good agreement between our results and those of Laganieri *et al.*, 2005 is likely due to the similarities in the microarray platforms used. Likewise, the differences between our results and those of Carroll *et al.*, 2005 and 2006 and Frasor *et al.*, 2003 are likely due to differences in the microarray platform used and the length of E2 treatment, respectively. Direct comparisons of the Cheng *et al.*, 2006 study to the other ChIP-chip studies could not be made because many of the designated promoters were not included on their CpG island microarray and because they used a 3 hour treatment with E2. As indicated, some of the direct E2 target genes that we defined in our studies have been examined in previous gene-specific studies.

This tabular comparison highlights the fact that no previous ChIP-chip study has determined the localization of Pol II and ERα at E2 target promoters in both the absence and presence of a short (45 min.) E2 treatment. Comparisons between the -E2 and +E2 conditions in our current study allowed us to identify a set of promoters constitutively bound by ERα, a set of E2-repressed genes with low occupancy by SRC, and a set of E2-regulated genes with constitutively bound and possibly promoter-proximal paused Pol IIs. Finally, this tabular comparison also highlights the fact that no previous ChIP-chip study has determined the global localization of SRC at E2 target promoters either in the presence or absence of E2 treatment. To our knowledge, our current study is the first to examine the ligand-dependent localization of a non-DNA binding nuclear receptor cofactor on a global scale.