

Supplementary Table S1. Transcription Factors containing homeoboxes differentially expressed in breast cancer subtypes.

Gene symbol	Gene Name	p value[#]
ADNP	activity-dependent neuroprotector homeobox	$p=6.51e^{-11}$
ALX1	cartilage paired-class homeoprotein 1	$p=3.77e^{-05}$
BARX1	BarH-like homeobox 1	$p=0.0416$
BARX2	BARX homeobox 2	$p=3.62e^{-04}$
CDX2	caudal type homeobox 2	$p=0.0467$
CDX4	caudal type homeobox 4	$p=0.00262$
CRX	cone-rod homeobox containing gene	$p=0.0363$
CUX1	cut-like homeobox 1	$p=1.3e^{-07}$
CUX2	cut-like homeobox 2	$p=1.66e^{-04}$
DLX3	distal-less homeobox 3	$p=4.18e^{-05}$
DLX4	distal-less homeobox 4	$p=3.78e^{-07}$
DLX5	distal-less homeobox 5	$p=1.98e^{-14}$
DLX6	distal-less homeobox 6	$p=2.79e^{-08}$
EMX2	empty spiracles homeobox 2	$p=1.51e^{-04}$
EN1	engrailed homeobox 1	$p=4.65e^{-50}$
EN2	engrailed homeobox 2	$p=5.67e^{-05}$
EVX1	even-skipped homeobox 1	$p=7.42e^{-05}$
GBX2	gastrulation brain homeobox 2	$p=5.24e^{-05}$
GCLC	glutamate-cysteine ligase, catalytic subunit	$p=9.33e^{-04}$
GSC	goosecoid homeobox	$p=5.11e^{-08}$
HESX1	HESX homeobox 1	$p=2.51e^{-04}$
HHEX	hematopoietically expressed homeobox	$p=1.6e^{-11}$
HLX	H2.0-like homeobox	$p=1.02e^{-14}$
HNF1A	HNF1 homeobox A	$p=1.45e^{-04}$
HOMEZ	homeobox and leucine zipper encoding	$p=4.53e^{-13}$
HOPX	HOP homeobox	$p=1.52e^{-06}$
HOXA3	homeobox A3	$p=0.0111$
HOXA4	homeobox A4	$p=1.38e^{-21}$
HOXA5	homeobox A5	$p=8.04e^{-12}$
HOXA7	homeobox A7	$p=4.04e^{-12}$
HOXB13	homeobox B13	$p=0.00288$
HOXB2	homeobox B2	$p=2.54e^{-23}$

HOXB3	homeobox B3	p=0.0013
HOXB5	homeobox B5	p=7.3e ⁻⁰⁵
HOXB6	homeobox B6	p=5.4e ⁻⁰⁷
HOXB8	homeobox B8	p=0.00194
HOXB9	homeobox B9	p=0.00332
HOXC10	homeobox C10	p=1.61e ⁻⁰⁷
HOXC11	homeobox C11	p=2.41 ⁻⁰⁴
HOXC13	homeobox C13	p=4.3e ⁻¹¹
HOXC8	homeobox C8	p=0.00291
HOXC9	homeobox C9	p=1.61e ⁻⁰⁷
HOXD1	homeobox D1	p=0.00637
HOXD13	homeobox D13	p=0.0229
HOXD3	homeobox D3	p=0.027
HOXD8	homeobox D8	p=3.97e ⁻⁰⁹
HOXD9	homeobox D9	p=1.66 ⁻⁰⁴
IRX1	iroquois homeobox 1	p=1.15e ⁻¹¹
IRX2	iroquois homeobox 2	p=3.7e ⁻⁰⁷
IRX3	iroquois homeobox 3	p=8.97e ⁻¹⁸
IRX4	iroquois homeobox 4	p=1.63e ⁻⁰⁵
IRX5	iroquois homeobox 5	p=1.28e ⁻¹⁵
IRX6	iroquois homeobox 6	p=0.0434
LASS2	LAG1 homolog, ceramide synthase 2	p=1.25e ⁻²³
LASS4	LAG1 homolog, ceramide synthase 4	p=3.14e ⁻¹⁵
LBX1	LIM homeobox 1	p=0.00544
LHX1	LIM homeobox 1	p=0.00542
LHX2	LIM homeobox 2	p=4.65e ⁻⁰⁸
LHX6	LIM homeobox 6	p=6.08e ⁻¹⁰
LMX1A	LIM homeobox transcription factor 1, alpha	p=0.0216
MEIS1	Meis homeobox 1	p=0.0129
MEIS2	Meis homeobox 2	p=5.43e ⁻¹¹
MEIS3	Meis homeobox 3; Meis homeobox 3 pseudogene 2	p=3.41e ⁻⁰⁴
MEOX1	mesenchyme homeobox 1	p=1.39e ⁻⁰⁹
MEOX2	mesenchyme homeobox 2	p=5.18e ⁻⁰⁹
MIXL1	Mix1 homeobox-like 1 (<i>Xenopus laevis</i>)	p=0.0368
MNX1	motor neuron and pancreas homeobox 1	p=0.1
MSX2	msh homeobox 2	p=2.04e ⁻⁰⁹
NANOG	Nanog homeobox pseudogene 8; Nanog	p=0.0055

	homeobox	
NKX2.3	NK2 homeobox 3	p=0.00476
NKX2.5	NK2 homeobox 5	p=5.94e ⁻⁰⁹
NKX3.1	NK3 homeobox 1	p=0.00374
NKX6.1	NK6 homeobox 1	p=0.0353
ONECUT2	one cut homeobox 2	p=9.76e ⁻⁰⁵
OTP	orthopedia homeobox	p=0.00464
OTX1	orthodenticle homeobox 1	p=7.85e ⁻⁰⁵
OTX2	orthodenticle homeobox 2	p=0.0561
PBX1	pre-B-cell leukemia homeobox 1	p=6.32e ⁻²⁰
PBX3	pre-B-cell leukemia homeobox 3	p=4.42e ⁻⁰⁷
PBX4	pre-B-cell leukemia homeobox 4	p=3.39e ⁻¹³
PHOX2A	paired-like homeobox 2a	p=3.62e ⁻³
PHOX2B	paired-like homeobox 2b	p=1.56e ⁻⁰⁴
PHTF1	putative homeodomain transcription factor 1	p=1.18e ⁻⁰⁸
PITX1	paired-like homeodomain 1	p=1.06 ⁻⁰⁴
PITX3	paired-like homeodomain 3	p=3.18e ⁻⁰⁶
PKNOX2	Pbx/knotted 1 homeobox 2	p=0.0233
POU2F1	POU class 2 homeobox 1	p=0.00603
POU2F2	POU class 2 homeobox 2	p=2.02e ⁻⁰⁷
POU3F2	POU class 3 homeobox 2	p=3.53e ⁻⁰⁶
POU3F4	POU class 3 homeobox 4	p=7.78e ⁻⁰⁴
POU4F1	POU class 4 homeobox 1	p=2.19e ⁻⁰⁹
POU5F1	POU class 5 homeobox 1	p=9.64e ⁻¹²
PROP1	PROP paired-like homeobox 1	p=5.42e ⁻¹⁶
PROX1	prospero homeobox 1	1.73e ⁻⁰⁸
PRRX1	paired related homeobox 1	p=1.12e ⁻⁰⁶
PRRX2	paired related homeobox 2	p=0.00114
RAX	retina and anterior neural fold homeobox	p=0.00368
RHOXF1	Rhox homeobox family, member 1	p=6.03e ⁻⁰⁹
SATB1	SATB homeobox 1	p=4.79e ⁻¹⁰
SHOX	short stature homeobox	p=0.00296
SHOX2	short stature homeobox 2	p=7.17e ⁻⁰⁹
SIX1	SIX homeobox 1	p=9.78e ⁻⁰⁷
SIX3	SIX homeobox 3	p=2.5e ⁻⁰⁵
SIX4	SIX homeobox 4	p=7.88e ⁻⁰⁵
SIX6	SIX homeobox 6	p=.66e ⁻⁰⁴

TGIF1	TGFB-induced factor homeobox 1	$p=4.47e^{-08}$
TGIF2	TGFB-induced factor homeobox 2	$p=8.61e^{-05}$
TLX1	T-cell leukemia homeobox 1	$p=2.55e^{-05}$
TSHZ1	teashirt zinc finger homeobox 1	$p=2.38e^{-16}$
VENTX	VENT homeobox homolog (<i>Xenopus laevis</i>)	$p=4.82e^{-10}$
VSX1	visual system homeobox 1	$p=8.81e^{-26}$
ZFH2	zinc finger homeobox 2	$p=1.36e^{-05}$
ZHX1	zinc fingers and homeoboxes 1	$p=2.59e^{-05}$
ZHX3	zinc fingers and homeoboxes 3	$p=0.00664$

P < 0.05 Probability of expression in any breast cancer subtype.