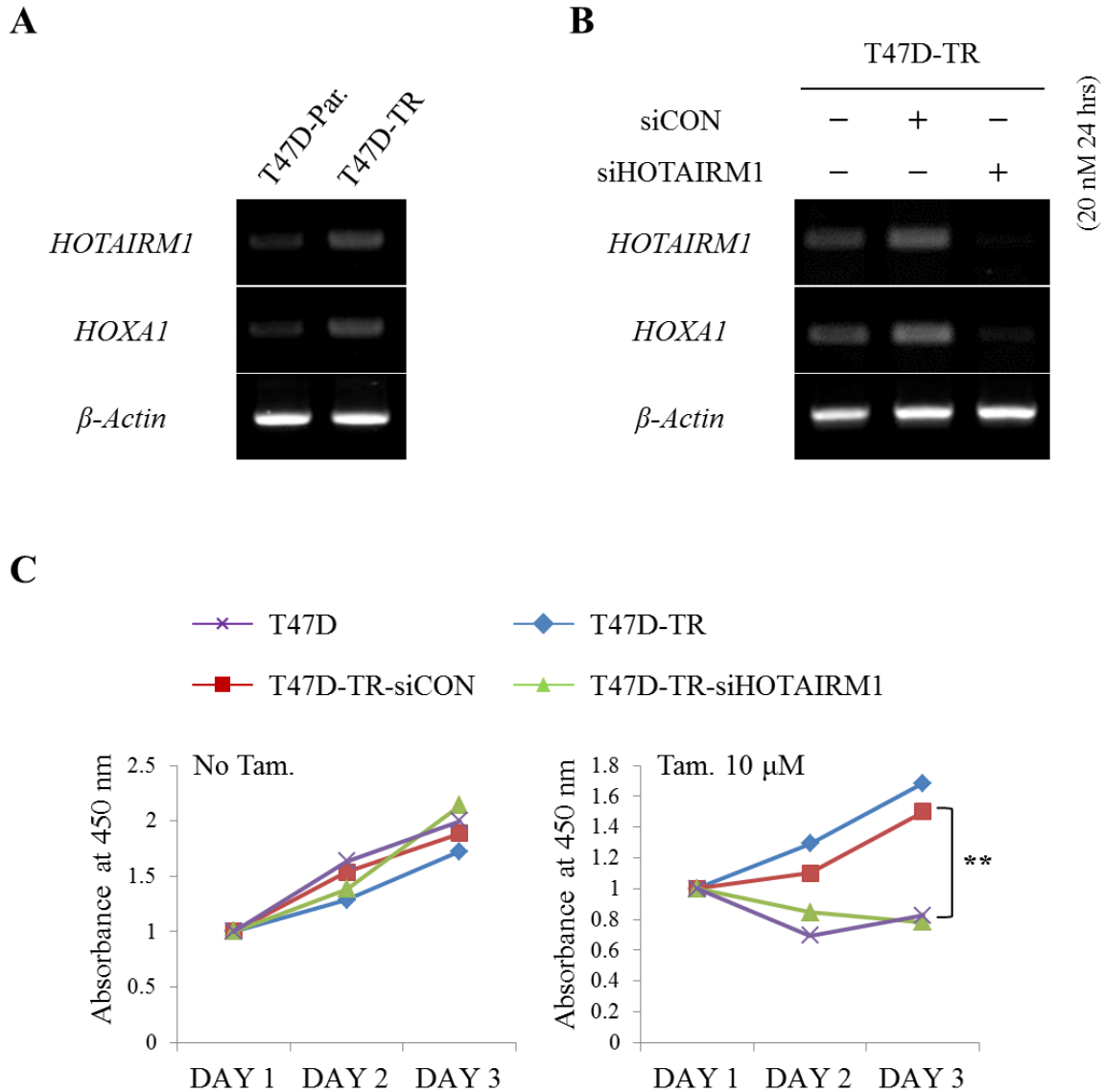


Supplementary Information

The LncRNA HOTAIRM1 Promotes Tamoxifen Resistance by Mediating HOXA1 Expression in ER+ Breast Cancer Cells

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

Supplementary Figure S1. HOTAIRM1 is associated with tamoxifen resistance in T47D cells.

(A) RT-PCR analysis of HOTAIRM1 in T47D and tamoxifen-resistant T47D (T47D-TR) cells.

(B) RT-PCR analysis of HOTAIRM1 and neighboring *HOXA1* in T47D-TR cells transiently transfected with pooled siHOTAIRM1 for 24 hours. β -Actin was used as an internal control.

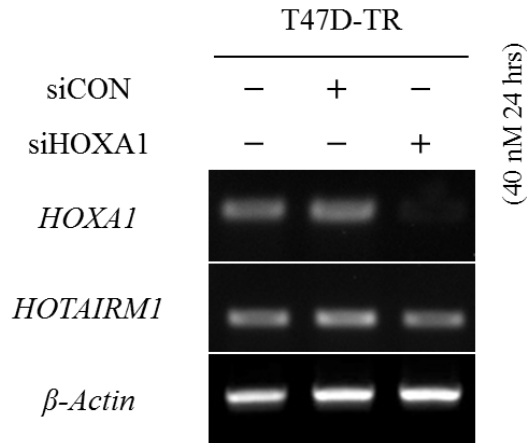
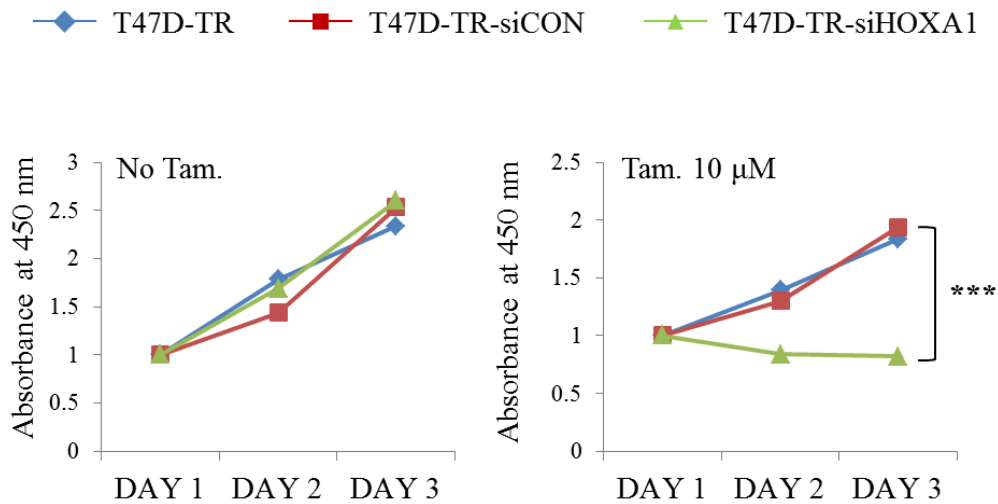
(C) Cell viability of cells treated with siHOTAIRM1 in the absence (No Tam.– left panel) and presence of 10 μ M tamoxifen (Tam.– right panel) at days 1, 2, and 3. All experiments were performed in triplicate. *** $p < 0.001$ compared with siCON by Student's *t*-test.

HOTAIRM1: corr. mRNA

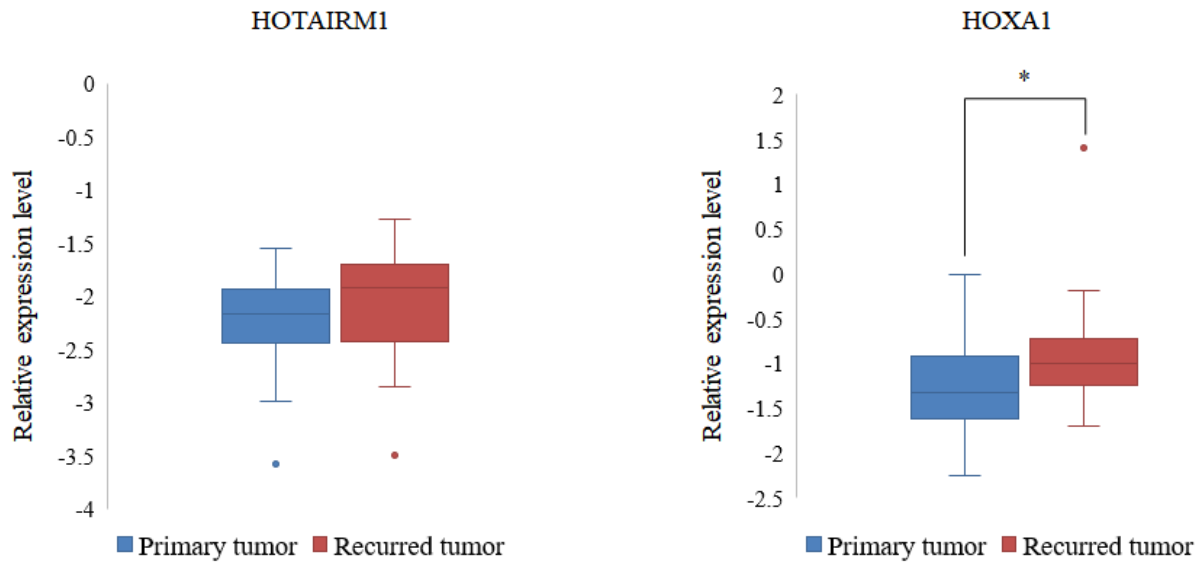
Cancer	Position/Annotation	Gene Symbol	Correlation	P-value	Plot
TCGA-BRCA	ENSG00000233429.5	HOXA1	0.719	5.65e-131	
TCGA-BRCA	ENSG00000233429.5	HOXA3	0.684	0	
TCGA-BRCA	ENSG00000233429.5	HOXA4	0.645	0	
TCGA-BRCA	ENSG00000233429.5	HOXA2	0.637	3.88e-94	
TCGA-BRCA	ENSG00000233429.5	HOXA5	0.618	2.25e-87	
TCGA-BRCA	ENSG00000233429.5	BOC	0.585	0	
TCGA-BRCA	ENSG00000233429.5	HOXA7	0.578	0	
TCGA-BRCA	ENSG00000233429.5	PLAGL1	0.576	0	
TCGA-BRCA	ENSG00000233429.5	DMD	0.57	0	
TCGA-BRCA	ENSG00000233429.5	KLHL29	0.57	0	

Showing 1 to 10 of 524 entries

Supplementary Figure S2. Positive correlation between HOTAIRM1 and anterior HOXA cluster genes in breast cancer tissues retrieved from TANRIC.

A**B**

Supplementary Figure S3. HOTAIRM1 promotes tamoxifen resistance by regulating HOXA1 expression in T47D cells. (A) RT-PCR of HOTAIRM1 and *HOXA1* in T47D-TR cells transiently transfected with siHOXA1 for 24 hours. β -Actin was used as an internal control. (B) Cell viability curve of cells treated with siHOXA1 or control siCON in the absence (No Tam.– left panel) and presence of 10 μ M tamoxifen (Tam.– right panel) at days 1, 2, and 3. All experiments were performed in triplicate. *** $p < 0.001$ compared with siCON by Student's t -test.



Supplementary Figure S4. Box plot of HOTAIRM1 and HOXA1 expressions in primary ER+ breast tumors and recurred tumors following tamoxifen mono-therapy for 5 years. Data were retrieved from GSE1379, a publicly available gene expression profiling data from 60 paired patients. * $p < 0.05$ compared with primary tumor by Student's t -test.

Supplementary Table 1. List of siRNA sequences.

Primers	Sense (5'-3')	Antisense (5'-3')
HOTAIRM1-1	CCGUUCA AUGAAAGAUGAAU	UUCAUCUUUCAUUGAACGGU
HOTAIRM1-2	AGAAACUCCGUGUUACUCAUUU	AAUGAGUAACACGGAGUUUCUU
HOTAIRM1-3	GUUUCUGUAGGCACUUUAUU	AUAAAGUGCCUACAGAAACU
HOTAIRM1-4	CCUCUAUUACCAAUUUAAAU	UUUAAAUUGGUAUAGAGGU
HOXA1	GAGGAAUCCUCAGAGAAGUU	ACUUCUCUGAGGAUCCUCU
Control	CCUCGUGCCGUCCAUCAGGUAGU	CUACCUGAUGGAACGGCACGAGGU