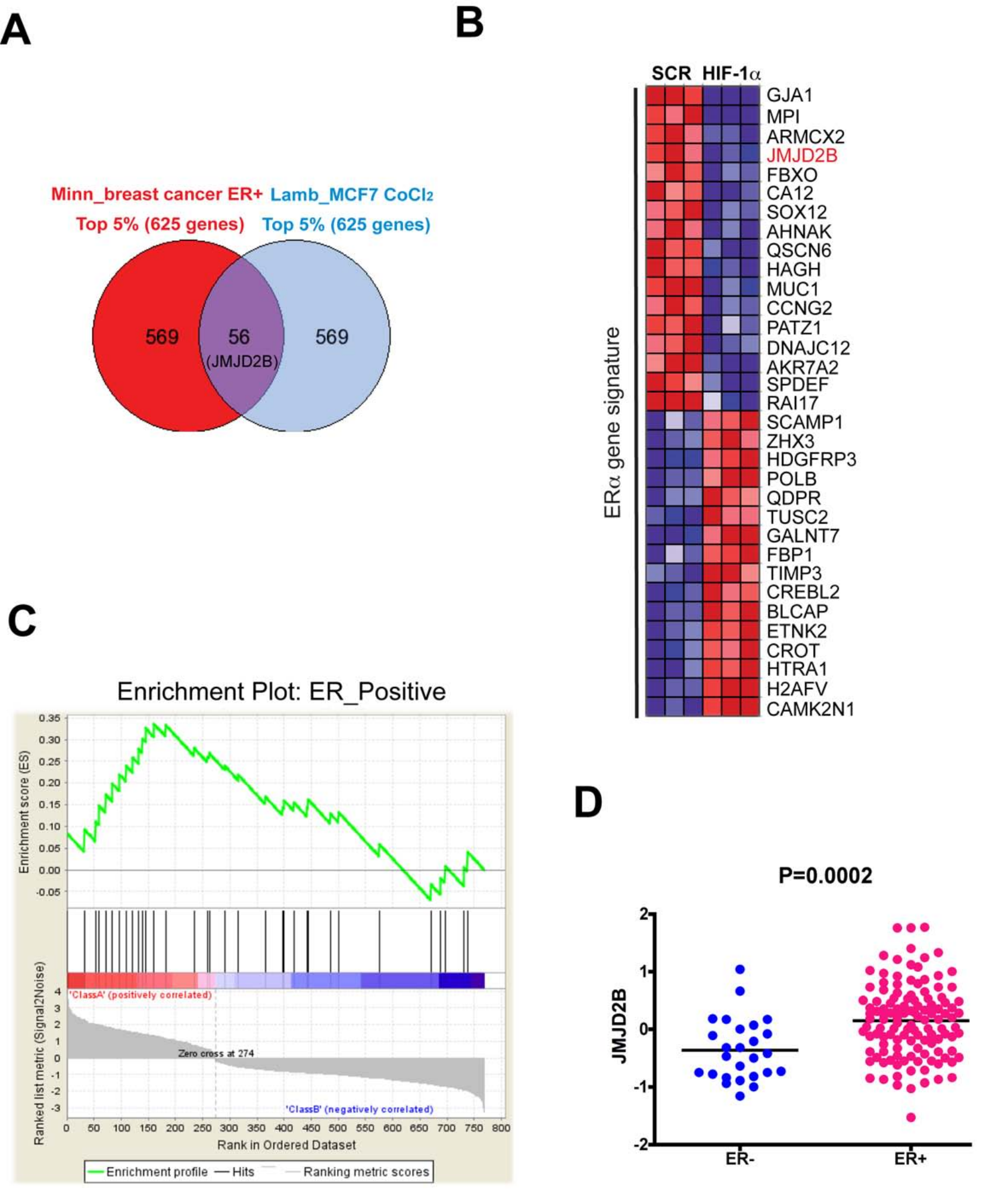
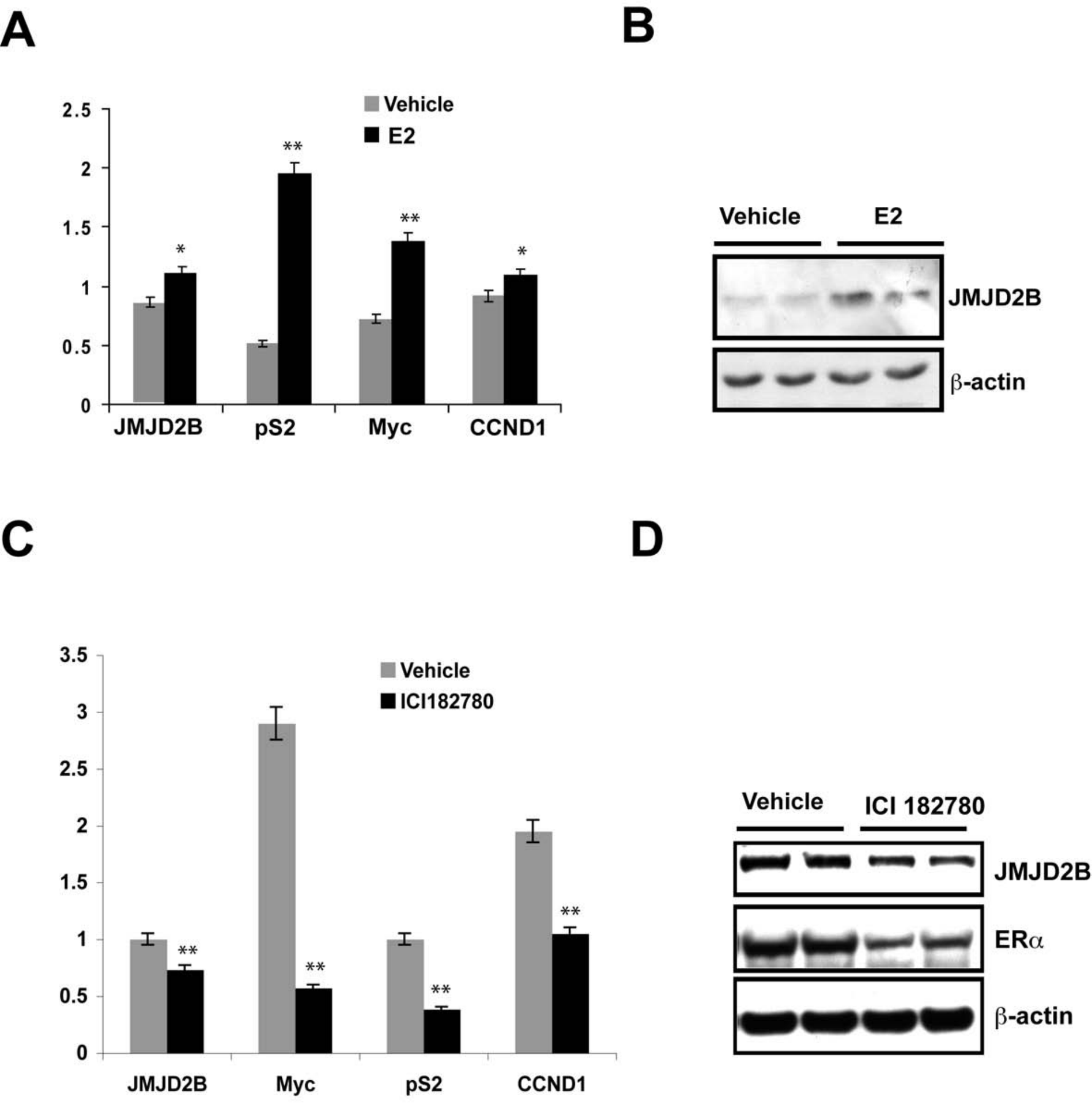
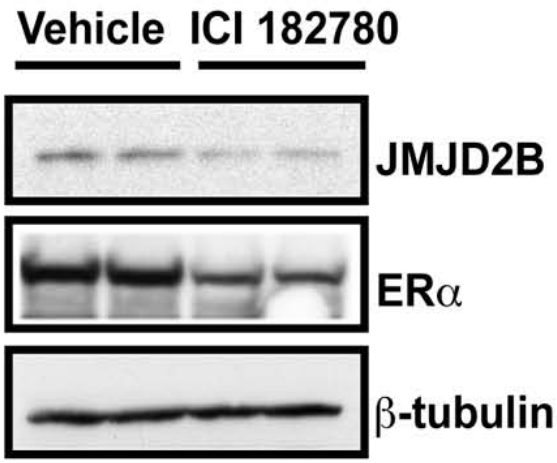
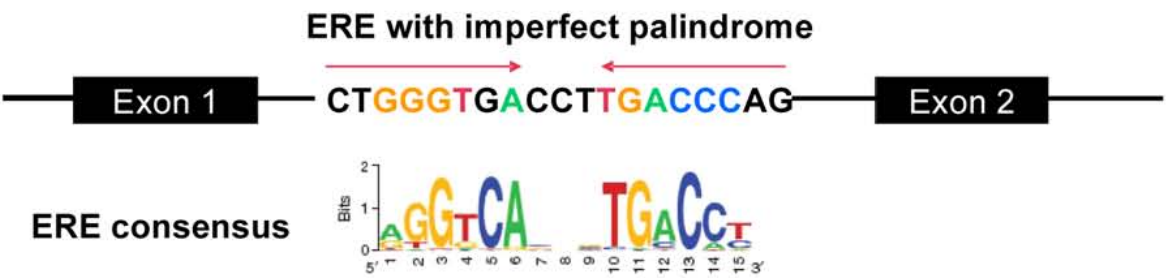

A
Minn_breast cancer ER+
Top 5% (625 genes)
Lamb_MCF7 CoCl2
Top 5% (625 genes)
569
56
(JMJD2B)
569
B
SCR
HIF-1α
ERα gene signature
GJA1
MPI
ARMCX2
JMJD2B
FBXO
CA12
SOX12
AHNAK
QSCN6
HAGH
MUC1
CCNG2
PATZ1
DNAJC12
AKR7A2
SPDEF
RAI17
SCAMP1
ZHX3
HDGFRP3
POLB
QDPR
TUSC2
GALNT7
FBP1
TIMP3
CREBL2
BLCAP
ETNK2
CROT
HTRA1
H2AFV
CAMK2N1
C
Enrichment Plot: ER_Positive
Enrichment score (ES)
Ranked list metric (Signal2Noise)
'ClassA' (positively correlated)
Zero cross at 274
'ClassB' (negatively correlated)
Rank in Ordered Dataset
Enrichment profile
Hits
Ranking metric scores
D
P=0.0002
JMJD2B
ER-
ER+


A
Vehicle
E2
2.5
2
1.5
1
0.5
0
*
**
**
*
JMJD2B
pS2
Myc
CCND1
B
Vehicle
E2
JMJD2B
β-actin
C
Vehicle
ICI182780
3.5
3
2.5
2
1.5
1
0.5
0
**
**
**
**
JMJD2B
Myc
pS2
CCND1
D
Vehicle
ICI 182780
JMJD2B
ERα
β-actin

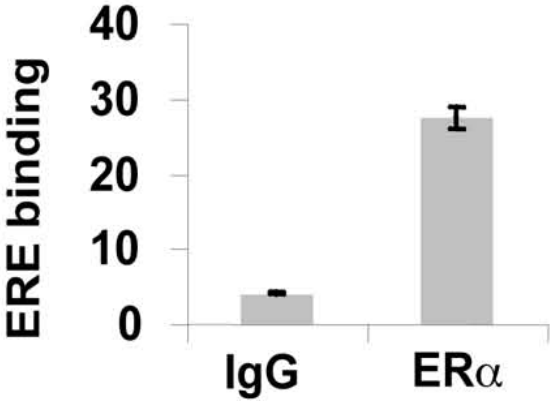
A

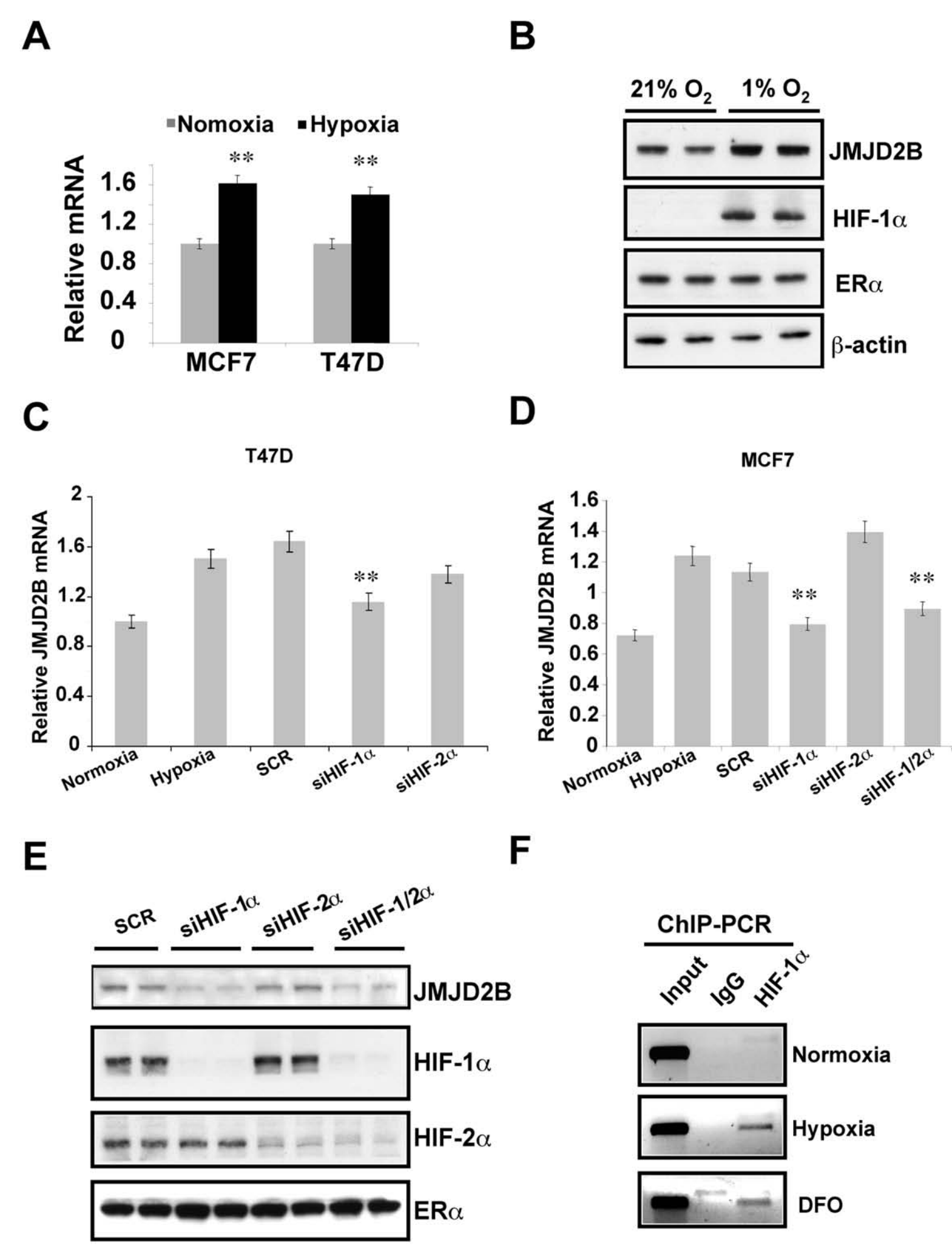

Vehicle
ICI 182780
JMJD2B
ERα
β-tubulin

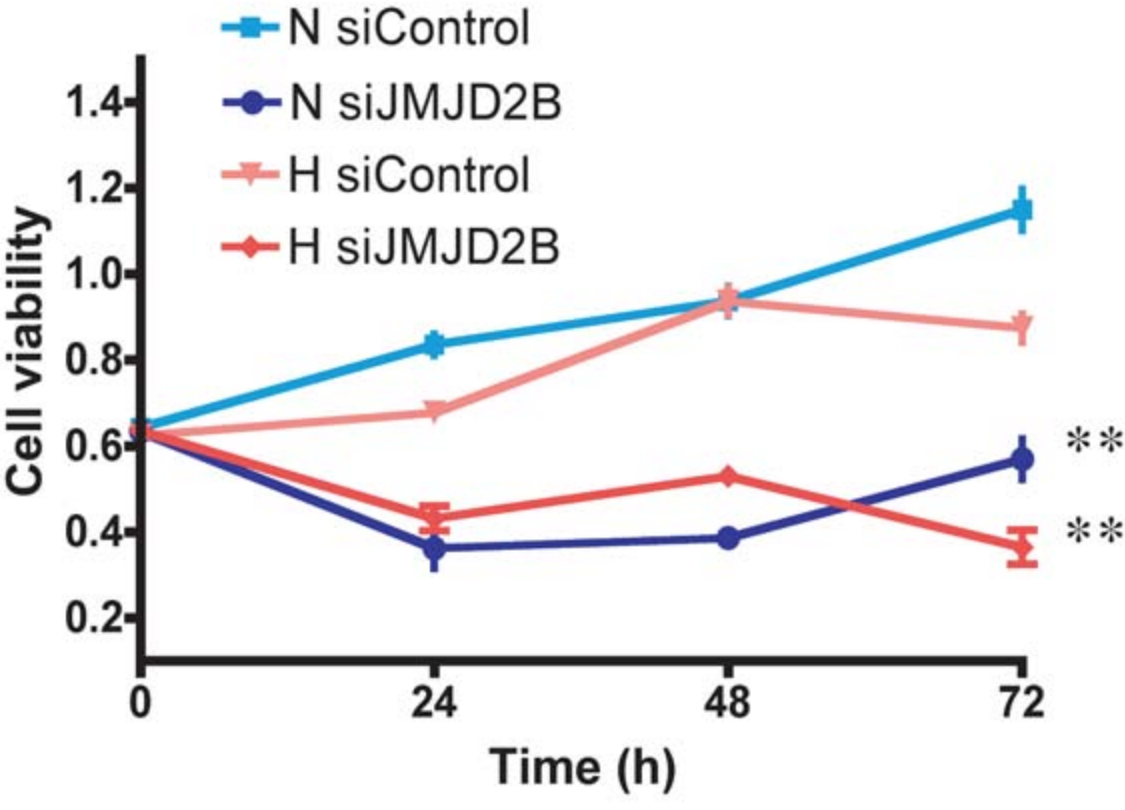
B

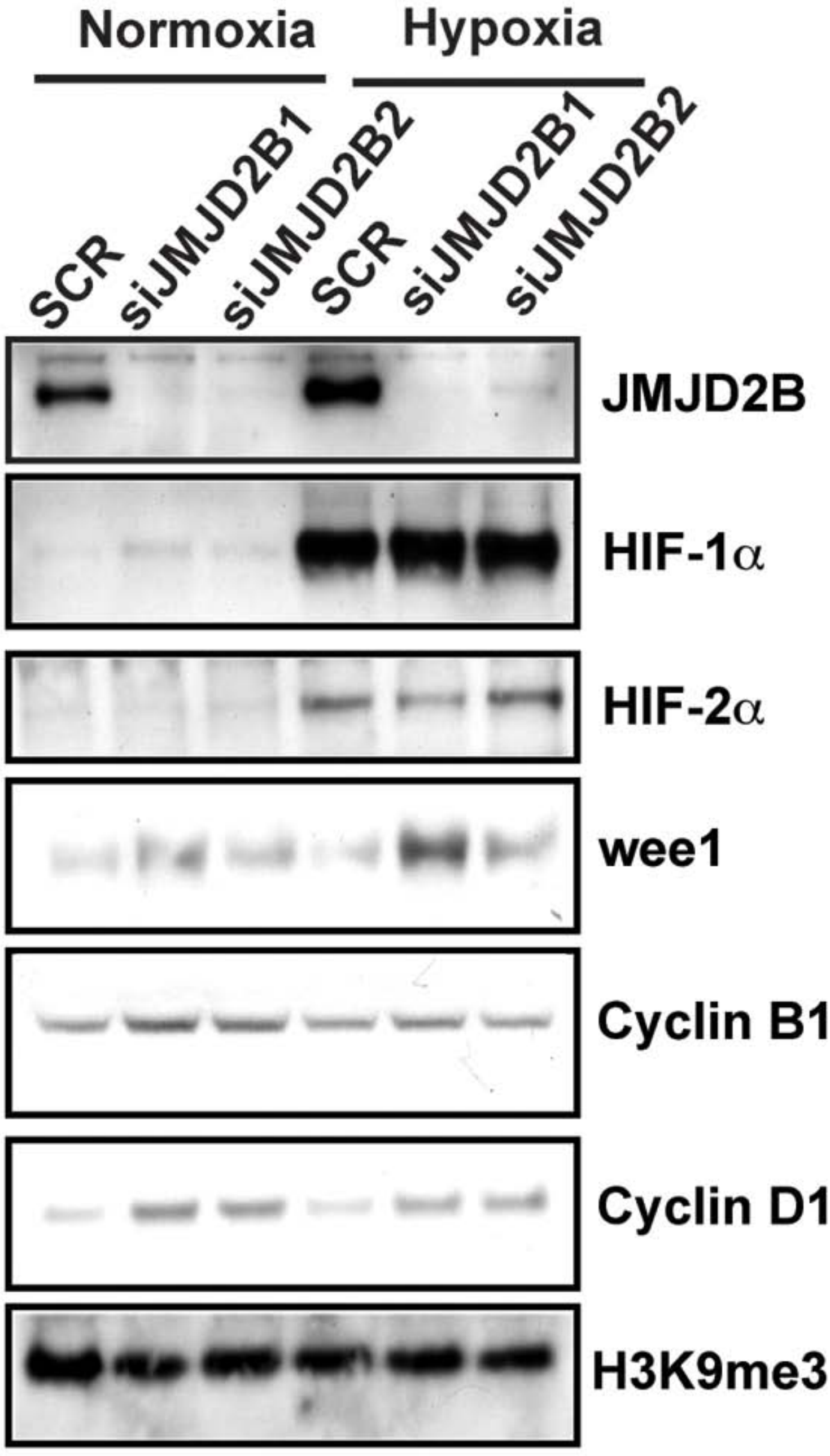

ERE with imperfect palindrome
Exon 1
CTGGGTGACCTTGACCCAG
Exon 2
ERE consensus
Bits

C


ERE binding
40
30
20
10
0
IgG
ERα


A
Nomoxia
Hypoxia
Relative mRNA
1.6
1.2
0.8
0.4
0
**
**
MCF7
T47D
B
21% O2
1% O2
JMJD2B
HIF-1α
ERα
β-actin
C
T47D
Relative JMJD2B mRNA
2
1.6
1.2
0.8
0.4
0
**
Normoxia
Hypoxia
SCR
siHIF-1α
siHIF-2α
D
MCF7
Relative JMJD2B mRNA
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
**
**
Normoxia
Hypoxia
SCR
siHIF-1α
siHIF-2α
siHIF-1/2α
E
SCR
siHIF-1α
siHIF-2α
siHIF-1/2α
JMJD2B
HIF-1α
HIF-2α
ERα
F
ChIP-PCR
Input
IgG
HIF-1α
Normoxia
Hypoxia
DFO


N siControl
N siJMJD2B
H siControl
H siJMJD2B
Cell viability
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0
24
48
72
Time (h)
**
**


Normoxia
Hypoxia
SCR
siJMJD2B1
siJMJD2B2
SCR
siJMJD2B1
siJMJD2B2
JMJD2B
HIF-1α
HIF-2α
wee1
Cyclin B1
Cyclin D1
H3K9me3