Supplementary Table 1.

Genes within the gemcitabine/AraC transport, metabolism and target pathway.

HUGO Name	Gene Name	Chromosomal Location
DCK	**Deoxycytidine kinase**	**4q13.3-q21.1**
CMPK	**Cytidylate kinase**	**1p32**
CDA	**Cytidine deaminase**	**1p36.2-p35**
DCTD	**dCMP deaminase**	**4q35.1**
RRM1	**Ribonucleotide reductase M1**	**11p15.5**
RRM2	**Ribonucleotide reductase M2**	**2p25-p24**
RRM2B	**Ribonucleotide reductase M2B (TP53 inducible)**	**8q23.1**
SLC28A1	**Solute carrier family 28 member 1**	**15q25-26**
SLC28A2	**Solute carrier family 28 member 2**	**15q15**
SLC28A3	**Solute carrier family 28 member 3**	**9q22.2**
SLC29A1	**Solute carrier family 29 member 1**	**6q21.1-p21.2**
SLC29A2	**Solute carrier family 29 member 2**	**11q13**
NT5C1A	**5′-nucleotidase, Cytosolic IA**	**1p34.3-p33**
NT5C1B	**5′-nucleotidase, Cytosolic IB**	**2p24.2**
NT5C2	**5′-nucleotidase, Cytosolic II**	**10q24.32-q24.33**
NT5C3	**5′-nucleotidase, Cytosolic III**	**7p14.3**
NT5C	**5′-nucleotidase, cytosolic**	**17q25.1**

Supplementary Table 2. **Top three pathway networks for candidate genes.**

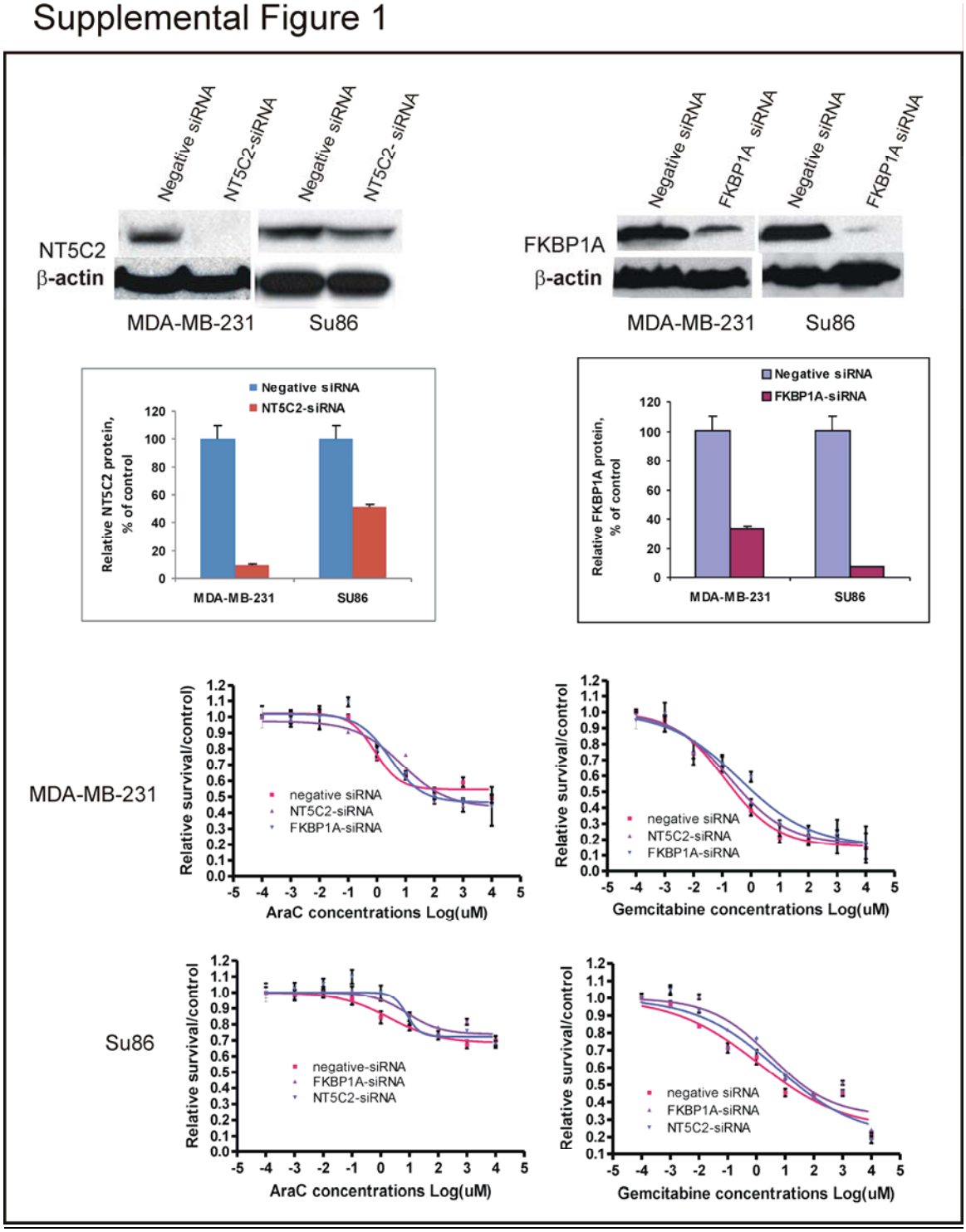
Gemcitabine

Gene	ProbeSet ID	P-value	ChromLocation	Gene Description	RefSeq Transcript ID
Cancer, Cell Death, Reproductive System Disease					
ARHGEF12	201334_s_at	7.67E-06	chr11q23.3	Rho guanine nucleotide exchange factor (GEF) 12	NM_152910 /// NM_178009
CABLES1	225532_at	3.45E-05	chr8q21.2	Cdk5 and Abl enzyme substrate 1	NM_001006109 /// NM_020187
ESR2	211118_x_at	3.61E-07	chr14q23.2	estrogen receptor 2 (ER beta)	NM_003496
GNLY	205495_s_at	2.17E-06	chr5q21	granulysin	NM_001042539 /// NM_002383
GNLY	37145_at	3.47E-06	chr4q34	granulysin	NM_030797
H2AFX	212525_s_at	2.82E-05	chr1p31.1	H2A histone family, member X	NM_005116 /// NM_203327
LAMA3	203726_s_at	2.04E-09	chr4q32.1	laminin, alpha 3	NM_004475
MAP4K4	206571_s_at	2.57E-06	chr2q11.2-q12	mitogen-activated protein kinase kinase kinase kinase 4	NM_014615
MAP4K4	218181_s_at	5.29E-06	chr2q11.2-q12	mitogen-activated protein kinase kinase kinase kinase 4	NM_005702
MAZ	207824_s_at	6.06E-05	chr16p11.2	MYC-associated zinc finger protein	NM_002105
MGMT	204880_at	1.30E-06	chr10q26	O-6-methylguanine-DNA methyltransferase	NM_002719 /// NM_178586 /// NM_178587 /// NM_178588
PPP2R5C	213305_s_at	3.04E-06	chr1q24.1	protein phosphatase 2, regulatory subunit B (B56), gamma isoform	NM_001079874 /// NM_006113
PPP2R5C	1554365_a_at	6.74E-06	chr14q32	protein phosphatase 2, regulatory subunit B (B56), gamma isoform	NM_014520
TLE4	233575_s_at	3.11E-06	chr7q21.1	transducin-like enhancer of split 4 (E(sp1) homolog, Drosophila)	NM_138375
TRAK2	202124_s_at	5.08E-06	chr9q21.31	amyotrophic lateral sclerosis 2	NM_013286
TRRAP	202642_s_at	8.85E-06	chr2q33	transformation/transcription domain-associated protein	NM_175907
U2AF2	218382_s_at	3.05E-06	chr7q21.2-q22.1	U2 (RNU2) small nuclear RNA auxiliary factor 2	XM_028217 /// XM_944210
VAV3	218807_at	4.51E-07	chr6p21.3	vav 3 oncogene	NM_022917 /// NM_130793 /// NM_139235
Cellular Development,Cellular Growth and Proliferation					
BLMH	202179_at	2.78E-05	chr17q11.2	bleomycin hydrolase	NM_012417 /// NM_181671
FKBP5	204560_at	4.12E-08	chr6p21.3-p21.2	FK506 binding protein 5	NM_018380
FKBP5	224856_at	4.15E-08	chr6p21.3-p21.2	FK506 binding protein 5	NM_006820
IFI44	214453_s_at	3.51E-05	chr10q26.11	interferon-induced protein 44	NM_005277 /// NM_201591 /// NM_201592
MFN2	216205_s_at	2.91E-05	chr1p36.22	mitofusin 2	NM_014966 /// NM_138614 /// NM_138615
MYBBP1A	219098_at	5.65E-06	chr17p13.3	MYB binding protein (P160) 1a	NM_006417
MYBBP1A	233803_s_at	3.72E-05	chr17p13.3	MYB binding protein (P160) 1a	NM_014874
SF3B4	209044_x_at	8.29E-07	chr13q14.3	splicing factor 3b, subunit 4, 49kDa	NM_006557 /// NM_181872
SLC23A2	211572_s_at	1.22E-05	chr16q21	solute carrier family 23 (nucleobase transporters), member 2	NM_152437
SLC23A2	209237_s_at	1.38E-05	chr1q12-q21	solute carrier family 23 (nucleobase transporters), member 2	NM_004117
SRI	208921_s_at	2.43E-05	chr20p13	sorcin	NM_004117

AraC

Gene	ProbeSet ID	P-value	ChromLocation	Gene Description	RefSeq Transcript ID
Cancer, Cell Death, Reproductive System Disease					
APH1A	1554417_s_at	7.87E-04	chr1p36.13-q31.3	anterior pharynx defective 1 homolog A (C. elegans)	NM_001077628 /// NM_016022
DAPK1	203139_at	5.42E-04	chr9q34.1	death-associated protein kinase 1	NM_004938
FRAT2	209864_at	3.43E-04	chr10q24.1	frequently rearranged in advanced T-cell lymphomas 2	NM_012083
GCAT	205164_at	1.39E-04	chr22q13.1	glycine C-acetyltransferase (2-amino-3-ketobutyrate coenzyme A ligase)	NM_014291
HBXIP	202299_s_at	4.48E-04	chr1p13.3	hepatitis B virus x interacting protein	NM_006402
LRIG1	211596_s_at	8.87E-05	chr3p14	leucine-rich repeats and immunoglobulin-like domains 1	NM_015541
MAP4K4	206571_s_at	1.74E-04	chr2q11.2-q12	mitogen-activated protein kinase kinase kinase kinase 4	NM_004834 /// NM_145686 /// NM_145687
MAP4K4	222547_at	3.98E-04	chr2q11.2-q12	mitogen-activated protein kinase kinase kinase kinase 4	NM_004834 /// NM_145686 /// NM_145687
PTPN13	204201_s_at	7.35E-04	chr4q21.3	protein tyrosine phosphatase, non-receptor type 13	NM_006264 /// NM_080683 /// NM_080684 /// NM_080685
ROBO1	213194_at	1.26E-04	chr3p12	roundabout, axon guidance receptor, homolog 1	NM_002941 /// NM_133631
SCC-112	212140_at	5.45E-04	chr4p14	SCC-112 protein	NM_015200
SH3BGRL	201311_s_at	2.18E-04	chrXq13.3	SH3 domain binding glutamic acid-rich protein like	NM_003022
SPG20	212526_at	2.70E-04	chr13q13.3	spastic paraplegia 20, spartin (Troyer syndrome)	NM_015087
TLE4	233575_s_at	1.77E-04	chr9q21.31	transducin-like enhancer of split 4 (Drosophila)	NM_007005
TPMT	203672_x_at	1.72E-05	chr6p22.3	thiopurine S-methyltransferase	NM_000367
Cell Signaling, DNA Replication, Recombination, and Repair, Nucleic Acid Metabolism					
ADRBK2	204183_s_at	1.80E-04	chr22q11|22q12.1	adrenergic, beta, receptor kinase 2	NM_005160
ARL2BP	202092_s_at	8.20E-06	chr16q13	ADP-ribosylation factor-like 2 binding protein	NM_012106
EPB41	207793_s_at	9.27E-04	chr1p33-p32	erythrocyte membrane protein band 4.1	NM_004437 /// NM_203342 /// NM_203343
ESR2	211118_x_at	3.40E-04	chr14q23.2	estrogen receptor 2 (ER beta)	NM_001040275 /// NM_001040276 /// NM_001437
INPP5F	203607_at	8.35E-05	chr10q26.11	inositol polyphosphate-5-phosphatase F	NM_014937 /// NM_198330 /// NM_198331
LIPA	201847_at	8.57E-04	chr10q23.2-q23.3	lipase A, lysosomal acid, cholesterol esterase	NM_000235
MARCKS	201668_x_at	2.95E-04	chr6q22.2	myristoylated alanine-rich protein kinase C substrate	NM_002356
MGMT	204880_at	2.21E-04	chr10q26	O-6-methylguanine-DNA methyltransferase	NM_002412
PDCD10	210907_s_at	7.86E-04	chr3q26.1	programmed cell death 10	NM_007217 /// NM_145859 /// NM_145860
RAB3B	205924_at	9.77E-04	chr1p32-p31	RAB3B, member RAS oncogene family	NM_002867
TRRAP	202642_s_at	1.26E-04	chr7q21.2-q22.1	transformation/transcription domain-associated protein	NM_003496
Post-Translational Modification, Cell Morphology, Connective Tissue Development and Function					
ABCF1	200045_at	9.33E-04	chr6p21.33	ATP-binding cassette, sub-family F (GCN20), member 1	NM_001025091 /// NM_001090
ATRN	211852_s_at	2.35E-04	chr20p13	attractin	NM_139321 /// NM_139322
HELZ	203674_at	1.12E-05	chr17q24.2	helicase with zinc finger	NM_014877
ITGB3BP	205176_s_at	1.53E-04	chr1p31.3	integrin beta 3 binding protein (beta3-endonexin)	NM_014288
MYBBP1A	219098_at	9.24E-06	chr17p13.3	MYB binding protein (P160) 1a	NM_014520
MYBBP1A	233803_s_at	2.97E-04	chr17p13.3	MYB binding protein (P160) 1a	NM_014520
NDUFS4	209303_at	2.01E-05	chr5q11.1	NADH dehydrogenase (ubiquinone) Fe-S protein 4	NM_002495
SNX3	208781_x_at	3.85E-04	chr6q21	sorting nexin 3	NM_003795
SNX3	210648_x_at	6.78E-04	chr6q21	sorting nexin 3	NM_003795
TRAK2	202125_s_at	3.37E-04	chr2q33	amyotrophic lateral sclerosis 2	NM_015049
YLPM1	212787_at	2.46E-05	chr14q24.3	YLP motif containing 1	NM_019589 /// XM_930487 /// XM_940570

Supplemental Figure 1



Supplementary Figure 1. Lack of effect of knockdown of genes that did not show an association with IC_{50} values for gemcitabine or AraC. (A) Western blot analyses showing significantly decreased levels of NT5C2 and FKBP1A protein in MDA-MB-231 and SU86 cell lines. Error bars represent SEM values for 3 experiments. (B) SU86 and MDA-MB-231 AraC cytotoxicity. (C) SU86 and MDA-MB-231 gemcitabine cytotoxicity.