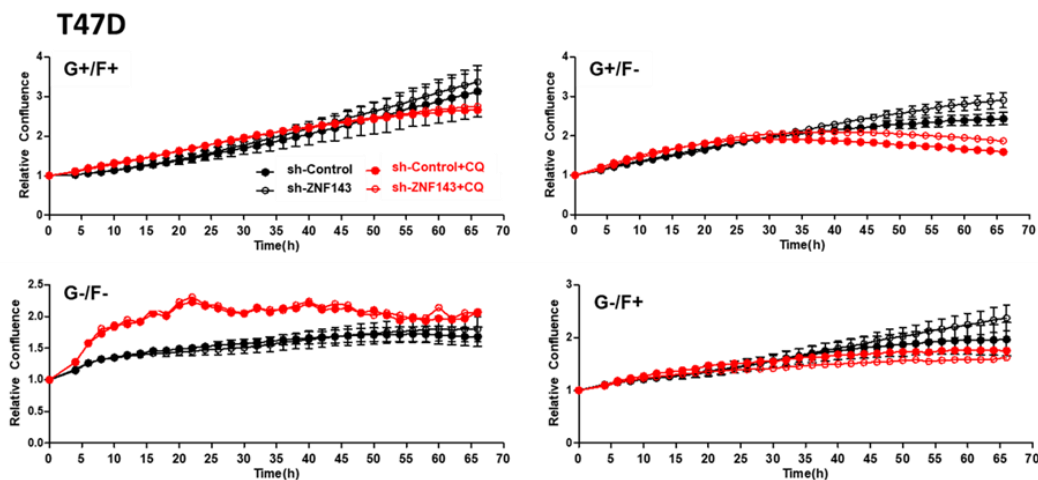


1 Article

2 **A role of ZNF143 on cell survival through the**  
 3 **NAD(P)H quinone dehydrogenase 1-p53-Beclin1 axis**  
 4 **under metabolic stress in breast cancer cells**

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*Paek AR et al Supplementary Fig. S1*

8 **Supplementary Figure S1.** Cells were plated on 96-well plates and grown for 24 h. The cells  
 9 were then maintained in four different conditions in terms of FBS and glucose, and cell  
 10 survival or growth was monitored by capturing images every 2 h over 4 days. Cells were  
 11 maintained in the presence of 10  $\mu$ M chloroquine. Relative confluency is shown in the  
 12 graphs. Data are expressed as means  $\pm$  S. E. of at least three independent experiments.  
 13 Statistical significance was assessed using paired Student's t-tests (\* $p < 0.05$  and \*\* $p < 0.005$ ).  
 14 Results shown are representative of at least three independent experiments.

15

16 **Supplementary Table S1.** Primers for PCR

Gene	Primers (5'-3')	Reference	Product (bp)
p53-F	CCCCTCCTGGCCCCTGTCATCTTC	NM001126118.1	265bp
p53-R	GCAGCGCCTCACAACTCCGTCAT		
ZNF143-F	CAGCATTCCATACTGCCTCA	NM003442	141bp
ZNF143-R	GAGATGGCTGTTCTCCAAGC		
NQO1-F	ATTTTGCTCCAAGCAGCCTC	NM000903.2	141bp
NQO1-R	GGTTGTCAGTTGGGATGGACT		
GAPDH-F	GGGTGTGAACCATGAGAAGT	NM33197.1	136bp
GAPDH-R	GACTGTGGTCATGAGTCCT		
PTGR1-F	CGCCAAAAAGCTCTGAAGGAC	NM001146108.1	152bp
PTGR1-R	CATGCTTTCACCTATTGTCTTCCCC		
KYNU-F	GTCTCATGTAGAGGAGCGGG	NM003937.2	139bp
KYNU-R	AGGAACTGGAGCCACTCGAA		

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18

**Supplementary Table S2.** Altered proteins by ZNF143 knockdown in MCF7 cells

Gene Symbol	Description
GSTP1	Glutathione S-transferase P [OS=Homo sapiens]
LDHB	L-lactate dehydrogenase B chain [OS=Homo sapiens]
S100A6	protein S100-A6 [OS=Homo sapiens]
ALDH1A1	Retinal dehydrogenase 1 [OS=Homo sapiens]
GFPT2	Glutamine--fructose-6-phosphate aminotransferase [isomerizing] 2 [OS=Homo sapiens]
AKR1C3	Aldo-keto reductase family 1 member C3 [OS=Homo sapiens]
FBXO17	F-box only protein 17 [OS=Homo sapiens]
TOP1MT	DNA topoisomerase I, mitochondrial [OS=Homo sapiens]
AKR1C1	aldo-keto reductase family 1 member C1 [OS=Homo sapiens]
BAG2	BAG family molecular chaperone regulator 2 [OS=Homo sapiens]
VN1R5	Vomer nasal type-1 receptor 5 [OS=Homo sapiens]
RAB19	Isoform 2 of Ras-related protein Rab-19 [OS=Homo sapiens]
SCIN	ADSEVERIN [OS=Homo sapiens]
C15orf26; CFAP161	Isoform 2 of Cilia- and flagella-associated protein 161 [OS=Homo sapiens]
IFNK	Interferon kappa [OS=Homo sapiens]
HBA2; HBA1	Hemoglobin subunit alpha [OS=Homo sapiens]
MAN1A1	Mannosyl-oligosaccharide 1,2-alpha-mannosidase IA [OS=Homo sapiens]
NQO1	NAD(P)H dehydrogenase [quinone] 1 [OS=Homo sapiens]
TF	Serotransferrin [OS=Homo sapiens]
ADAMTS19	A disintegrin and metalloproteinase with thrombospondin motifs 19 [OS=Homo sapiens]
KYNU	kynureninase [OS=Homo sapiens]
ALB	Serum albumin [OS=Homo sapiens]
AK1	Adenylate kinase isoenzyme 1 [OS=Homo sapiens]
LACTB	Serine beta-lactamase-like protein LACTB, mitochondrial [OS=Homo sapiens]
LXN	Latexin [OS=Homo sapiens]
ANXA1	annexin A1 [OS=Homo sapiens]
SBF1	Isoform 4 of Myotubularin-related protein 5 [OS=Homo sapiens]
TMOD2	Tropomodulin-2 [OS=Homo sapiens]
APOA1	Apolipoprotein A-I [OS=Homo sapiens]
UTP23	rRNA-processing protein UTP23 homolog [OS=Homo sapiens]
AFP	Alpha-fetoprotein [OS=Homo sapiens]
PTGR1	Prostaglandin reductase 1 [OS=Homo sapiens]
FKBP11	Peptidyl-prolyl cis-trans isomerase FKBP11 [OS=Homo sapiens]
MYO1B	Unconventional myosin-Ib [OS=Homo sapiens]
PLOD2	Isoform 2 of Procollagen-lysine,2-oxoglutarate 5-dioxygenase 2 [OS=Homo sapiens]
GNA13	Guanine nucleotide-binding protein subunit alpha-13 [OS=Homo sapiens]
CD44	CD44 antigen [OS=Homo sapiens]
SCARB1	Scavenger receptor class B member 1 [OS=Homo sapiens]
CCDC37; CFAP100	Isoform 2 of Cilia- and flagella-associated protein 100 [OS=Homo sapiens]
SFXN5	Sideroflexin-5 [OS=Homo sapiens]

MPI	mannose-6-phosphate isomerase [OS=Homo sapiens]
CKM	Creatine kinase M-type [OS=Homo sapiens]
SP3	transcription factor Sp3 [OS=Homo sapiens]
AUP1	Ancient ubiquitous protein 1 [OS=Homo sapiens]
CLDN3	Claudin-3 [OS=Homo sapiens]
RCN1	Reticulocalbin-1 [OS=Homo sapiens]
PPIF	Peptidyl-prolyl cis-trans isomerase F, mitochondrial [OS=Homo sapiens]
GNA11	guanine nucleotide-binding protein subunit alpha-11 [OS=Homo sapiens]
ATP8	ATP synthase protein 8 [OS=Homo sapiens]
FABP5	Fatty acid-binding protein, epidermal [OS=Homo sapiens]
NAT1	Arylamine N-acetyltransferase 1 [OS=Homo sapiens]
FBXO3	F-box only protein 3 [OS=Homo sapiens]
AHSG	Alpha-2-HS-glycoprotein [OS=Homo sapiens]
A2M	alpha-2-macroglobulin [OS=Homo sapiens]
CCDC175	Coiled-coil domain-containing protein 175 [OS=Homo sapiens]
MDN1	Midasin [OS=Homo sapiens]
PTRHD1	Putative peptidyl-tRNA hydrolase PTRHD1 [OS=Homo sapiens]
HEBP1	Heme-binding protein 1 [OS=Homo sapiens]
ITIH4	Inter-alpha-trypsin inhibitor heavy chain H4 [OS=Homo sapiens]
CBX1	Chromobox protein homolog 1 [OS=Homo sapiens]
DYNLT1	Dynein light chain Tctex-type 1 [OS=Homo sapiens]
LTF	Lactotransferrin [OS=Homo sapiens]
HMGN3	High mobility group nucleosome-binding domain-containing protein 3 [OS=Homo sapiens]
CYB5R1	NADH-cytochrome b5 reductase 1 [OS=Homo sapiens]
MYO5A	Isoform 3 of Unconventional myosin-Va [OS=Homo sapiens]
WDR45B; WDR45L	WD repeat domain phosphoinositide-interacting protein 3 [OS=Homo sapiens]
NCOA6	Nuclear receptor coactivator 6 [OS=Homo sapiens]
CBX2	Chromobox protein homolog 2 [OS=Homo sapiens]
C1orf198	Uncharacterized protein C1orf198 [OS=Homo sapiens]
CRELD1	Isoform 2 of Cysteine-rich with EGF-like domain protein 1 [OS=Homo sapiens]
DTL	Denticleless protein homolog [OS=Homo sapiens]
FLNB	Filamin-B [OS=Homo sapiens]
KLRG2	killer cell lectin-like receptor subfamily G member 2 [OS=Homo sapiens]
C17orf104; MEIOC	Meiosis-specific coiled-coil domain-containing protein MEIOC [OS=Homo sapiens]
NEBL	Isoform 2 of Nebulette [OS=Homo sapiens]
CTSL2; CTSV	Cathepsin L2 [OS=Homo sapiens]
ARL3	ADP-ribosylation factor-like protein 3 [OS=Homo sapiens]
PLS3	Plastin-3 [OS=Homo sapiens]
C6orf211; ARMT1	protein-glutamate O-methyltransferase [OS=Homo sapiens]
RAB31	ras-related protein rab-31 [OS=Homo sapiens]
SSFA2	Sperm-specific antigen 2 [OS=Homo sapiens]
FAM102A	Protein FAM102A [OS=Homo sapiens]
RILPL1	RILP-like protein 1 [OS=Homo sapiens]

NPDC1	Neural proliferation differentiation and control protein 1 [OS=Homo sapiens]
IDH3A	Isoform 2 of Isocitrate dehydrogenase [NAD] subunit alpha, mitochondrial [OS=Homo sapiens]
CALU	Isoform 4 of Calumenin [OS=Homo sapiens]
SERPINA3	Alpha-1-antichymotrypsin [OS=Homo sapiens]
PFN3	Profilin-3 [OS=Homo sapiens]
HOMER3	homer protein homolog 3 [OS=Homo sapiens]
LGALS1	Galectin-1 [OS=Homo sapiens]
SLC39A7	Zinc transporter SLC39A7 [OS=Homo sapiens]
TBL1XR1	F-box-like/WD repeat-containing protein TBL1XR1 [OS=Homo sapiens]
B4GALT1	Beta-1,4-galactosyltransferase 1 [OS=Homo sapiens]
ABL1	Isoform IB of Tyrosine-protein kinase ABL1 [OS=Homo sapiens]
CRIP2	Cysteine-rich protein 2 [OS=Homo sapiens]
GSKIP	GSK3-beta interaction protein [OS=Homo sapiens]
CTSD	Cathepsin D [OS=Homo sapiens]
CRAT	Carnitine O-acetyltransferase [OS=Homo sapiens]
MGLL	monoglyceride lipase [OS=Homo sapiens]
IRF2BP2	Isoform 2 of Interferon regulatory factor 2-binding protein 2 [OS=Homo sapiens]
IFT140	Intraflagellar transport protein 140 homolog [OS=Homo sapiens]
EPB41L2	band 4.1-like protein 2 [OS=Homo sapiens]
SLC25A24	Calcium-binding mitochondrial carrier protein SCaMC-1 [OS=Homo sapiens]
SDSL	serine dehydratase-like [OS=Homo sapiens]
RALGAPA2	Ral GTPase-activating protein subunit alpha-2 [OS=Homo sapiens]
BMP2K	BMP-2-inducible protein kinase [OS=Homo sapiens]
SORT1	Sortilin [OS=Homo sapiens]
TNRC6B	Trinucleotide repeat-containing gene 6B protein [OS=Homo sapiens]
LOC550643; LINC01420; NBDY	negative regulator of P-body association [OS=Homo sapiens]
GREB1	Protein GREB1 [OS=Homo sapiens]
NT5C2	Cytosolic purine 5'-nucleotidase [OS=Homo sapiens]
ZNHIT2	Zinc finger HIT domain-containing protein 2 [OS=Homo sapiens]
AGR2	Anterior gradient protein 2 homolog [OS=Homo sapiens]
CALU	Isoform 3 of Calumenin [OS=Homo sapiens]
ZRSR1	U2 small nuclear ribonucleoprotein auxiliary factor 35 kDa subunit-related protein 1 [OS=Homo sapiens]
SLITRK6	SLIT and NTRK-like protein 6 [OS=Homo sapiens]
EML2	Isoform 3 of Echinoderm microtubule-associated protein-like 2 [OS=Homo sapiens]
CHRDL1	Isoform 4 of Chordin-like protein 1 [OS=Homo sapiens]
CTSB	Cathepsin B [OS=Homo sapiens]
CLIC3	Chloride intracellular channel protein 3 [OS=Homo sapiens]
ULK1	Serine/threonine-protein kinase ULK1 [OS=Homo sapiens]
RAB6C	Ras-related protein Rab-6C [OS=Homo sapiens]
LEPREL4; P3H4	synaptonemal complex protein SC65 [OS=Homo sapiens]
BNIP3	BCL2/adenovirus E1B 19 kDa protein-interacting protein 3 [OS=Homo sapiens]

RPS6KA3	Ribosomal protein S6 kinase alpha-3 [OS=Homo sapiens]
ARMCX2	Armadillo repeat-containing X-linked protein 2 [OS=Homo sapiens]
EPS8L1	Epidermal growth factor receptor kinase substrate 8-like protein 1 [OS=Homo sapiens]
NINJ1	ninjurin-1 [OS=Homo sapiens]
ANXA6	annexin A6 [OS=Homo sapiens]
RAET1G	Retinoic acid early transcript 1G protein [OS=Homo sapiens]
NCEH1	Isoform 2 of Neutral cholesterol ester hydrolase 1 [OS=Homo sapiens]
PDXDC1; LOC102724985	Pyridoxal-dependent decarboxylase domain-containing protein 1 [OS=Homo sapiens]
TMEM120A	Transmembrane protein 120A [OS=Homo sapiens]
GLT8D1	Glycosyltransferase 8 domain-containing protein 1 [OS=Homo sapiens]
SLC3A2	Isoform 4 of 4F2 cell-surface antigen heavy chain [OS=Homo sapiens]
DAP	Death-associated protein 1 [OS=Homo sapiens]
ARFGAP3	ADP-ribosylation factor GTPase-activating protein 3 [OS=Homo sapiens]
DAAM1	Disheveled-associated activator of morphogenesis 1 [OS=Homo sapiens]
CKAP4	Cytoskeleton-associated protein 4 [OS=Homo sapiens]
ASMTL	N-acetylserotonin O-methyltransferase-like protein [OS=Homo sapiens]
LMCD1	LIM and cysteine-rich domains protein 1 [OS=Homo sapiens]
SLC7A5	large neutral amino acids transporter small subunit 1 [OS=Homo sapiens]
SCD	acyl-CoA desaturase [OS=Homo sapiens]
CHMP4C	Charged multivesicular body protein 4c [OS=Homo sapiens]
ACSL1	Long-chain-fatty-acid--CoA ligase 1 [OS=Homo sapiens]
ITGA5	Integrin alpha-5 [OS=Homo sapiens]
SLC2A1	Solute carrier family 2, facilitated glucose transporter member 1 [OS=Homo sapiens]
EVL	Isoform 1 of Ena/VASP-like protein [OS=Homo sapiens]
CBFA2T3	Protein CBFA2T3 [OS=Homo sapiens]
FAM114A1	Protein Noxp20 [OS=Homo sapiens]
ZNF185	zinc finger protein 185 [OS=Homo sapiens]
CA2	Carbonic anhydrase 2 [OS=Homo sapiens]
TIMP1	Metalloproteinase inhibitor 1 [OS=Homo sapiens]
CALML5	Calmodulin-like protein 5 [OS=Homo sapiens]
ARMCX1	Armadillo repeat-containing X-linked protein 1 [OS=Homo sapiens]
SH3BGRL	SH3 domain-binding glutamic acid-rich-like protein [OS=Homo sapiens]
HSPB8	Heat shock protein beta-8 [OS=Homo sapiens]
EMP2	Epithelial membrane protein 2 [OS=Homo sapiens]
LRRC6	protein tilB homolog [OS=Homo sapiens]
ABAT	4-aminobutyrate aminotransferase, mitochondrial [OS=Homo sapiens]
CA8	carbonic anhydrase-related protein [OS=Homo sapiens]
FOSL2	Fos-related antigen 2 [OS=Homo sapiens]
KIAA1324	UPF0577 protein KIAA1324 [OS=Homo sapiens]
ARMCX3	Armadillo repeat-containing X-linked protein 3 [OS=Homo sapiens]
ASS1	Argininosuccinate synthase [OS=Homo sapiens]
MUC1	Isoform 2 of Mucin-1 [OS=Homo sapiens]

CRABP1	Cellular retinoic acid-binding protein 1 [OS=Homo sapiens]
SUSD2	Sushi domain-containing protein 2 [OS=Homo sapiens]
GOLM1	Golgi membrane protein 1 [OS=Homo sapiens]
LYPD3	Ly6/PLAUR domain-containing protein 3 [OS=Homo sapiens]
ASPH	Aspartyl/Asparaginyl beta-hydroxylase [OS=Homo sapiens]
TFF3	Trefoil factor 3 [OS=Homo sapiens]
TFF1	Trefoil factor 1 [OS=Homo sapiens]
ADIRF; C10orf116	Adipogenesis regulatory factor [OS=Homo sapiens]
VIM	Vimentin [OS=Homo sapiens]
SLC26A2	sulfate transporter [OS=Homo sapiens]
MUC5B	Mucin-5B [OS=Homo sapiens]

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