

## Supplementary Materials

**Table S1.** The list of the selected genes, together with their functional categories and primer sequences.

Gene#	RefSeqID	FxnCat	GeneName	Forward	Reverse
1	NM_033379	cyclin-dependent protein kinase activity	CDC2; cell division cycle 2_G1 to S and G2 to M	aatggaaccaggaagcctagc	agaaatcgtttggctgatcat
2	NM_001798	cyclin-dependent protein kinase activity	CDK2; cyclin-dependent kinase 2	agactttggactagccagagc	gcagcccaggaggattcag
3	NM_014326	calmodulin regulated protein kinase activity	DAPK2; death-associated protein kinase 2	gctcactttgatctcaagcca	aaatccggcgtcccaaaaat
4	NM_001348	calmodulin regulated protein kinase activity	DAPK3; death-associated protein kinase 3	ggaggacgtggaggaccatta	ttggctgcgtactccttgc
5	NM_003330	glutathione-disulfide reductase activity	TXNRD1; thioredoxin reductase 1	ctaaggaggcagccaatag	gtatgcaaccacattcacaca
6	NM_002423	metalloendopeptidase activity	matrix metalloproteinase 7 (matrilysin uterine)	gaaacacgctggctcatgc	aggaatgccatacccaaga
7	NM_057749	cyclin-dependent protein kinase regulator activity	cyclin E2	tgcttacgtcactgatgtgc	ccaggagatgattgtacaggac
8	NM_032989	structural constituent of ribosome	BCL2-antagonist of cell death	atgagtgcagagtttggac	gatccaccaggactggaaga
9	NM_000389	cyclin-dependent protein kinase inhibitor activity	cyclin-dependent kinase inhibitor 1A (p21 Cip1)	gagactctcagggtcgaacag	cttctgtggcggtattagg
10	NM_001924	DNA repair	growth arrest and DNA-damage-inducible 45 alpha	tggtgacgaatccattcatc	acttcagtgaatttggctcagt
11	NM_004064	transforming growth factor beta receptor_cytoplasmic mediator activity	CDKN1B; cyclin-dependent kinase inhibitor 1B (p27_Kip1)	ACAAAAGAGCCAACAGAACAG	AGGATGTCCATTCCATGAAG
12	NM_000633	humoral immune response	BCL2; B-cell CLL/lymphoma 2	ggacaacatcgccctgtgg	agccaggagaaatcaaacagag
13	NM_007297	DNA binding	BRCA1; breast cancer 1_early onset	GAAGACTGCTCAGGGCTATC	TTTCTGCTGGAGCTTTATC
14	NM_005228	protein serine/threonine kinase activity	EGFR; epidermal growth factor receptor	tgtgcaactggagagcatc	gcttgatcacacttttggcag
15	NM_001964	transcription factor activity	EGR1; early growth response 1	cctgaccgagagcttttcc	cggccagtataggtgatggg
16	NM_002133	heme oxygenase (decycling) activity	HMOX1; heme oxygenase (decycling) 1	gagggtgatagaagagccaa	tgaggggctctgctccttg
17	NM_002592	leading strand elongation	proliferating cell nuclear antigen	ACTAAAATGCGCCGCAAT	TCTCCTGGTTTGGTGCTCAA
18	NM_032991	cysteine-type peptidase activity	CASP3_caspase 3_apoptosis-related cysteine peptidase	CTGGACTGTGGCATTGAGACA	TCGGCCTCCACTGGTATTTT
19	NM_000963	prostaglandin-endoperoxide synthase activity	PTGS2; prostaglandin-endoperoxide synthase 2	ctagagccctcctcctgtg	ggggatcaggatgaatttctt
20	NM_000546	nuclease activity	TP53; tumor protein p53 (Li-Fraumeni syndrome)	gtgcttccacgacggtga	ggctcagcgttagatctg
21	NM_005427	transcription factor activity	TP73; tumor protein p73	tgctgtttacaagaagcgg	gctggagcagactgtcctc
22	NM_000660	transforming growth factor beta receptor binding	TGFB1; transforming growth factor_beta 1	TACTACGCCAAGGAGGTCAC	GGAGCTCTGATGTGTGAAG
23	NM_000594	tumor necrosis factor receptor binding	TNF; tumor necrosis factor (TNF superfamily_member 2)	tgtagcaaacctcaagctga	cctctgatggcaccaccag
24	NM_003844	death receptor activity	TNFRSF10A; tumor necrosis factor receptor superfamily_member 10a	atgggaacatagcccttggg	caaatgttgaagcattgtgt
25	NM_003842	death receptor activity	TNFRSF10B; tumor necrosis factor receptor superfamily_member 10b	tgctccagaggatgtcaag	ggtcacgctcctccaca
26	NM_001066	tumor necrosis factor receptor activity	TNFRSF1B; tumor necrosis factor receptor superfamily_member 1B	cccagggtgcatctacacc	tggtacagaagactttgcatgt
27	NM_003327	tumor necrosis factor receptor activity	TNFRSF4; tumor necrosis factor receptor superfamily_member 4	ccgggcttcaaacgacg	cagactgtcctgtgtggc
28	NM_001455	transcription factor activity	FOXO3A; forkhead box O3A	ggctggaagaactccatccg	cagggttgatgatccaccaag
29	NM_004104	fatty acid metabolism	FASN; fatty acid synthase	cagattcactccgaggaacac	gccctctgaagtcgaagaaga
30	NM_001749	calpain activity	CAPNS1; calpain_small subunit 1	cgacgactcagatgaaagt	gggtccagtcaggaatacat
31	NM_001239	cyclin-dependent protein kinase activity	CCNH; cyclin H	tcactgtgcattttggcct	gtgcttctctgtccaagag
32	NM_001240	transcription from Pol II promoter	CCNT1; cyclin T1	tcacacagttccctggaaattc	gatggagacaagtatgtctacc
33	NM_001241	transcription from Pol II promoter	CCNT2; cyclin T2	gatcaccattgaacaccaca	ggttgaagatgcagactgttg
34	NM_003592	protein binding	CUL1; cullin 1	accacagagatcgggtttg	ccagtcagcaatcctattca
35	NM_001168	receptor activity	BIRC5; baculoviral IAP repeat-containing 5 (survivin)	ctggcccagtggttctctg	ggctcttctctgccagttc
36	NM_013366	ubiquitin-dependent protein catabolism	APC2; anaphase-promoting complex subunit 2	CTGTCATCCTGTCCAGTGAG	TGGCTTGGTCTGAAAATAC
37	NM_013367	ubiquitin-dependent protein catabolism	APC4; anaphase-promoting complex subunit 4	cagtagaaagcagtggtctaca	agagcttctccaaggacgag
38	NM_053056	cyclin-dependent protein kinase regulator activity	CCND1; cyclin D1 (PRAD1; parathyroid adenomatosis 1)	aggaacagaagtgcaggag	ccacgaacatgcaagtggc
39	NM_002388	chromatin binding	MCM3; MCM3 minichromosome maintenance deficient 3	GCCAGGACATCTCCAGTTAC	TGGCTTTTCTCCTCTTCATC

Table S1. Cont.

Gene#	RefSeqID	FxnCat	GeneName	Forward	Reverse
40	NM_006739	chromatin binding	MCM5; minichromosome maintenance deficient 5_ cell division cycle 46	gtgctccaggacatccagg	gatgatgccaggatcttcac
41	NM_004507	DNA repair	HUS1; HUS1 checkpoint homolog (S. pombe)	gggccagatcctgatgttagt	gggtgcttcagaggctaag
42	NM_133341	DNA repair	RAD17; RAD17 homolog (S. pombe)	gaagtgcataaacagcctcca	tgacagcacagcatctgattt
43	NM_000077	transcription factor activity	CDKN2A; cyclin-dependent kinase inhibitor 2A	cgacttcagggtgcccacatt	ctcaaatcctctggagggacc
44	NM_078487	transcription factor activity	CDKN2B; cyclin-dependent kinase inhibitor 2B	acggagtcaaccgtttcgg	gcatctaggttccagccc
45	NM_003334	ubiquitin activating enzyme activity	UBE1; ubiquitin-activating enzyme E1	tgtcactgcctacactggac	gacagaactcaccactcgc
46	NM_007313	protein-tyrosine kinase activity	ABL1; v-abl Abelson murine leukemia viral oncogene homolog 1	gcttcttggtcgtgagagt	aggagacgtagagcttgcca
47	NM_001826	cyclin-dependent protein kinase activity	CKS1B; CDC28 protein kinase regulatory subunit 1B	agagcgcacatgctgcacaaa	accagcttggctatgctctg
48	NM_001827	cyclin-dependent protein kinase activity	CKS2; CDC28 protein kinase regulatory subunit 2	aggagtgaggagacttggtg	ttggaagaggtcgtctaaagaga
49	NM_000059	single-stranded DNA binding	BRCA2; breast cancer 2_ early onset	caccaccaccccttagttcta	tgacttgcagcttcttctgatt
50	NM_005983	ubiquitin-dependent protein catabolism	SKP2; S-phase kinase-associated protein 2 (p45)	gtttgtaagaggtggtatcgcc	agcaaccgaccagtcacatc
51	NM_030655	DNA helicase activity	DDX11; DEAD/H (Asp-Glu-Ala-Asp/His) box polypeptide 11	cttcacacctattccatccagg	caaagtacggagccaagaga
52	NM_005192	Protein tyrosine/serine/threonine phosphatase activity	CDKN3; cyclin-dependent kinase inhibitor 3	actgctatggaggactggga	ctcgcaggctgtctatggc
53	NM_001069	control	tubulin beta 2A	AGACCGCATCATGAACACCTT	GGAGTAGGTTTCATCTGTGTTTCC
54	NM_001101	control	Beta-Actin	aaccgcgagaagatgaccc	atcacgatgccagtgttacg
55	NM_000194	control	HPRT	actggcaaaacaatgcagact	caacacttctgtgggtcct
56	NM_002639	control	serpin peptidase inhibitor clade B (ovalbumin) member 5	CCAAACCAGTGCAGATGATGAA	GGATGAACATGCTGAGATGCTTATT
57		negative control	empty		
58		negative control	empty		
59		negative control	empty		
60		negative control	empty		
61		negative control	empty		
62		negative control	empty		
63		negative control	empty		
64		negative control	empty		