Cell Cycle Genes

	Gene Name	Reported Function	Primers
Cell Cycle Progression Genes	apc	degrades securin, allowing chromosome segregation	F-ATGGAGTCATGGTGGGAGTT R-GCCAAGCCTCAGCTACAAAC
	cak	phosphorylates cdk2 to facilitate G1/S transition	F-TCTTCAAAGCCAAGCACGTA R-ATTTCTCTGAGGGCCTGGTT
	cdc20	activates apc in mitosis	F-ATGGAGCAGCCTGGAGACTA R-TGTTCCAACTGAGGGAGCTT
	cdc25	activates cdc2/cyclin B for G2/M	F-CTCTACCTGCTCGAGGGAAG R-GTCACAGTCCTTGGCATCCT
	cyclin A	G2 phase-specific	F-ATCGCCCAGACAGAGAAGAA R-GCATTTGACAAGCATCAGGA
	cyclin B	triggers mitosis	F-GCTGTGGATAGCCAGAGGTT R-GGCTTGGAAGCAGCAGTAAC
	cyclin D1	multi-phase pleiotropic roles	F-GCGTACCCTGACACCAATCT R-CTCTTCGCACTTCTGCTCCT
	cyclin E1	facilitates entry into S phase	F-CTGAGTTCCAAGCCCAAGTC R-GCTGACTGCTATCCTCGCTT
	e2f-1	DNA/chromosomal replication activation	F-TCGCAGATCGTCATCATCTC R-CAGTCTCCAGATCCAGCCTC
	hct1	activates apc in G1	F-ATGGACCAGGACTATGAGCG R-TGATCCTGTGGAAGTTCACG
	scf	substrate for c-kit tyrosine ligase	F-GCTCCAGAACAGCTAAACGG R-CCGCAGATCTCCTTGGTTT
Cell Cycle Arrest Genes	p16	inhibits cdk4	F-CGTGAACATGTTGTTGAGGC R-CGAATCTGCACCGTAGTTGA
	p21	cyclin-dependent kinase inhibitor (active in G1)	F-TCCACAGCGATATCCAGACA R-ACGAAGTCAAAGTTCCACCG
	p27	inhibits multiple targets for G1 arrest	F-TTGGGTCTCAGGCAAACTCT R-TCTTCTGTTCTGTTGGCCCT
	p53	pleiotropic: DNA repair, cell cycle pause and apoptosis	F-CTAGCATTCAGGCCCTCATC R-CAACAGATCGTCCATGCAGT
	rb	prevents DNA synthesis by binding/inhibiting e2f-1	F-GACTCCTGGCTCATGGTTGT R-ATGGCATGATCTGCACAAGA
	wee1kinase	binds and inactivates cdc2/cyclin B complex	F-CCTCCGCACAAGACCTTC R-GGAGTTTAACAGAGCCGGAA