

Modeling the role of microRNA-449a in  
the regulation of the G2/M cell cycle  
checkpoint in prostate LNCaP cells  
under ionizing radiation  
*S3 file*

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## List of stable states of the model in section Model validation

IR	ATM	ATR	Mdm2	p53-MAIN	p53-INP1	p53-Arrest	Wip1	p53-Killer	p21	14-3-3s	miR-449a	c-Myc	Cdc25ABC	RB	E2F1	Cdc2-CycB	Sirt-1	Proliferation	G2-M-Arrest	G2-M-Apoptosis
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Figure 1: Wild type case

IR	ATM	ATR	Mdm2	p53-MAIN	p53-INP1	p53-Arrest	Wip1	p53-Killer	p21	14-3-3s	miR-449a	c-Myc	Cdc25ABC	RB	E2F1	Cdc2-CycB	Sirt-1	Proliferation	G2-M-Arrest	G2-M-Apoptosis
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Figure 2: Knockout (KO) of miR-449a

IR	ATM	ATR	Mdm2	p53-MAIN	p53-INP1	p53-Arrest	Wip1	p53-Killer	p21	14-3-3s	miR-449a	c-Myc	Cdc25ABC	RB	E2F1	Cdc2-CycB	Sirt-1	Proliferation	G2-M-Arrest	G2-M-Apoptosis
1		1		1	1	1	1	1	1	1	1			1					1	1
1	1	1		1	1			1	1	1	1			1					1	1

Figure 3: Ectopic expression (E1) of miR-449a, Inhibits proliferation and induce G2/M-Arrest and apoptosis

IR	ATM	ATR	Mdm2	p53-MAIN	p53-INP1	p53-Arrest	Wip1	p53-Killer	p21	14-3-3s	miR-449a	c-Myc	Cdc25ABC	RB	E2F1	Cdc2-CycB	Sirt-1	Proliferation	G2-M-Arrest	G2-M-Apoptosis
			1									1	1		1	1	1	1		
1		1		1	1	1	1		1	1	1			1					1	1
1	1	1		1	1			1	1	1	1			1					1	1

Figure 4: Negative correlation between c-Myc and miR-449a in response to IR

IR	ATM	ATR	Mdm2	p53-MAIN	p53-INP1	p53-Arrest	Wip1	p53-Killer	p21	14-3-3s	miR-449a	c-Myc	Cdc25ABC	RB	E2F1	Cdc2-CycB	Sirt-1	Proliferation	G2-M-Arrest	G2-M-Apoptosis
			1										1		1	1	1	1		
1		1		1	1	1	1		1	1	1			1					1	1
1	1	1		1	1			1	1	1	1			1					1	1

Figure 5: Knockout (KO) of c-Myc induce G2/M-Arrest and Apoptosis