ADDITIONAL FILE

Table 1 Stable states and pRB response for single and multiple knockdowns of network proteins. Green rows demonstrate the stable states obtained for knockdown simulations, which are the same as MOCK (unperturbed) case. Grey rows indicate the knockdown simulations, for which there are two stable states. pRB1 in red shows that the corresponding knockdown simulations result in pRB=1 (i.e. there is G1/S transition).

Knockdowns	Gene	Min	Max	Stable State(s)
MOCK	-	-	-	1 Stable state
	The second secon	K4;CyclinD1 ERBB1_2;E		RB1; ERalpha; AKT1; CDK6; MYC; EGF; ERBB1; ERBB2; ERBB3;
AKT1	AKT1 MEK1 ; CD ERBB1_2 ;	•	0 ; CDK2 ; CyclinE1 ; pl	1 Stable state RB1 ; ERalpha ; CDK6 ; MYC ; EGF ; ERBB1 ; ERBB2 ; ERBB3 ; ERBB2_3 ;
MEK1	MEK1 CDK4 ; Cyc ERBB1_2 ;		0 ; CyclinE1 ; pRB1 ; El	1 Stable state Ralpha ; AKT1 ; CDK6 ; MYC ; EGF ; ERBB1 ; ERBB2 ; ERBB3 ; ERBB2_3 ;
CDK2	CDK2 MEK1 ; CD ERBB1_2 ;		0 ; CyclinE1 ; pRB1 ; El	1 Stable state Ralpha ; AKT1 ; CDK6 ; MYC ; EGF ; ERBB1 ; ERBB2 ; ERBB3 ; ERBB2_3 ;
CDK4	CDK4 MEK1 ; Cyc ERBB1_3	0 dinD1 ; CDK2	0 ; CyclinE1 ; ERalpha	1 Stable state ; AKT1 ; CDK6 ; MYC ; EGF ; ERBB1 ; ERBB2 ; ERBB3 ; ERBB2_3 ; ERBB1_2 ;
p21		0 K4 ; CyclinD1 ERBB1_2 ; E		1 Stable state RB1 ; ERalpha ; AKT1 ; CDK6 ; MYC ; EGF ; ERBB1 ; ERBB2 ; ERBB3 ;
p27		0 K4;CyclinD1 ERBB1_2;E		1 Stable state RB1 ; ERalpha ; AKT1 ; CDK6 ; MYC ; EGF ; ERBB1 ; ERBB2 ; ERBB3 ;
CycD1	CyclinD1 MEK1 ; CD	0 K2 ; CyclinE1	0 ;ERalpha;AKT1;M`	1 Stable state YC; EGF; ERBB1; ERBB2; ERBB3; ERBB2_3; ERBB1_2; ERBB1_3
ERBB2_3		0 0 K4 ; CyclinD1	0 0 ; CDK2 ; CyclinE1 ; p	1 Stable state RB1 ; ERalpha ; AKT1 ; CDK6 ; MYC ; IGF1R ; EGF ; ERBB1
ERBB1_3	ERBB1_3 ERBB1 ERBB3 p21; p27;	0 0 0 EGF ; ERBB2	0 0 0	2 Stable states

	MEK1; CDK	4; CyclinD1	CDK2; CyclinE1;	pRB1; ERalpha; AKT1; CDK6; MYC; IGF1R; EGF; ERBB2
ERBB1	ERBB1	0	0	1 Stable state
	MEK1; CDK	4; CyclinD1	CDK2; CyclinE1;	pRB1; ERalpha; AKT1; CDK6; MYC; EGF; ERBB2; ERBB3; ERBB2_3
ERBB1_2	ERBB1_2	0	0	2 Stable states
	ERBB1	0	0	
	ERBB2	0	0	
	p21; p27; E			
	MEK1; CDK	4; CyclinD1	; CDK2 ; CyclinE1 ;	pRB1 ; ERalpha ; AKT1 ; CDK6 ; MYC ; IGF1R ; EGF ; ERBB3
IGF1R	IGF1R	0	0	1 Stable state
				pRB1; ERalpha; AKT1; CDK6; MYC; EGF; ERBB1; ERBB2; ERBB3;
	ERBB2_3 ; E	ERBB1_2 ; EF		
CDK6	CDK6	0	0	1 Stable state
		4; CyclinD1	CDK2 ; CyclinE1 ;	ERalpha; AKT1; MYC; EGF; ERBB1; ERBB2; ERBB3; ERBB2_3; ERBB1_2;
	ERBB1_3			
ERa	ERalpha	0	0	1 Stable state
	MEK1 · CDK	2 · CyclinE1 ·	AKT1 · MYC · FGF	; ERBB1; ERBB2; ERBB3; ERBB2 3; ERBB1 2; ERBB1 3
MYC	MYC MYC	<u>.∠ , Oyomi∟i ,</u> ∩	0	1 Stable state
WTO		· ·	· ·	BB2 ; ERBB3 ; ERBB2_3 ; ERBB1_2 ; ERBB1_3
CyclinE1	CyclinE1	0	0	1 Stable state
Gyomie i		•	nRB1 · FRalnha ·	AKT1; CDK6; MYC; EGF; ERBB1; ERBB2; ERBB3; ERBB2 3; ERBB1 2;
	ERBB1 3	ir, Gyomidi	, prest, Ertaipha,	(KTT, OBIG, MTO, EGT, ERBBT, ERBBZ, ERBBG, ERBBZ_O, ERBBT_Z,
ERBB2	ERBB2	0	0	1 Stable state
		4 : CvclinD1	: CDK2 : CvclinE1 :	pRB1; ERalpha; AKT1; CDK6; MYC; IGF1R; EGF; ERBB1; ERBB3; ERBB1_3
ERRB2_MYC	MYC	0	0	1 Stable state
	ERBB2	0	0	
		lpha : AKT1 :	IGF1R : EGF : ERE	B1; ERBB3; ERBB1_3
EGF	EGF	0	0	2 Stable states
	p21; p27			
	MEK1; CDK	4; CyclinD1:	CDK2; CyclinE1;	pRB1; ERalpha; AKT1; CDK6; MYC; IGF1R
AKT1 MEK1	AKT1	0	0	1 Stable state
_	MEK1	0	0	
	p21; p27; E	EGF; ERBB1	; ERBB2 ; ERBB3	ERBB2_3; ERBB1_2; ERBB1_3
AKT1_CDK2	AKT1	0	0	1 Stable state
_	CDK2	0	0	
	MEK1; CDK	4; CyclinD1	CyclinE1; pRB1;	ERalpha; CDK6; MYC; EGF; ERBB1; ERBB2; ERBB3; ERBB2_3; ERBB1_2;
	ERBB1_3	•		
AKT1_CDK4	AKT1	0	0	1 Stable state
	CDK4	0	0	
		inD1; CDK2;	; CyclinE1 ; ERalph	a; CDK6; MYC; EGF; ERBB1; ERBB2; ERBB3; ERBB2_3; ERBB1_2;
	ERBB1_3			
AKT1_p21	AKT1	0	0	1 Stable state

	MEK1 ; CDK4 ; CyclinI ERBB1_2 ; ERBB1_3	D1 ; CDK2 ; CyclinE1 ; pRB1 ;	ERalpha; CDK6; MYC; EGF; ERBB1; ERBB2; ERBB3; ERBB2_3;
AKT1_p27	AKT1 0	0	1 Stable state
	p27 0	0	
	MEK1; CDK4; CyclinI	D1 ; CDK2 ; CyclinE1 ; pRB1 ; I	ERalpha; CDK6; MYC; EGF; ERBB1; ERBB2; ERBB3; ERBB2 3;
	ERBB1 2; ERBB1 3	•	<u> </u>
AKT1_CycD1	AKT1 0	0	1 Stable state
_ ,	CyclinD1 0	0	
		E1 : ERalpha : MYC : EGF : ER	BB1 ; ERBB2 ; ERBB3 ; ERBB2_3 ; ERBB1_2 ; ERBB1_3
AKT1 ERBB2 3	AKT1 0	0	1 Stable state
/ · ·	ERBB2 0	0	
	ERBB3 0	0	
		01 · CDK2 · CyclinE1 · nRR1 · l	ERalpha ; CDK6 ; MYC ; IGF1R ; EGF ; ERBB1
AKT1 ERBB1 3	AKT1 0	O O	2 Stable states
ARTI_ERBBI_5	ERBB1 3 0	0	2 Stable States
	ERBB1 0	0	
	ERBB3 0	0	
		O .	
	p21 ; p27 ; EGF ; ERB		FRolpho - CDV6 - MVC - ICE4D - FCF - FDDD2
AVT4 EDDD4		DI, CDK2, Cycline i, pRB1, i	ERalpha ; CDK6 ; MYC ; IGF1R ; EGF ; ERBB2
AKT1_ERBB1	AKT1 0	0	1 Stable state
	ERBB1 0	0	EDILLE ODICA MICO FOE EDDDO EDDDO C
ALCTA EDDDO	•	D1; CDK2; CyclinE1; pRB1;	ERalpha ; CDK6 ; MYC ; EGF ; ERBB2 ; ERBB3 ; ERBB2_3
AKT1_ERBB2	AKT1 0	0	1 Stable state
	ERBB2 0	0	
		·	ERalpha; CDK6; MYC; IGF1R; EGF; ERBB1; ERBB3; ERBB1_3
AKT1_ERBB1_2	AKT1 0	0	2 Stable states
	ERBB1_2 0	0	
	ERBB1 0	0	
	ERBB2 0	0	
	p21; p27; EGF; ERB	B3	
	MEK1; CDK4; CyclinI	D1 ; CDK2 ; CyclinE1 ; pRB1 ; l	ERalpha ; CDK6 ; MYC ; IGF1R ; EGF ; ERBB3
AKT1_IGF1R	AKT1 0	0	1 Stable state
	IGF1R 0	0	
	MEK1; CDK4; CyclinI	D1 ; CDK2 ; CyclinE1 ; pRB1 ; I	ERalpha ; CDK6 ; MYC ; EGF ; ERBB1 ; ERBB2 ; ERBB3 ; ERBB2_3 ;
	ERBB1_2 ; ERBB1_3	•	
AKT1_CDK6	AKT1 0	0	1 Stable state
	CDK6 0	0	
		01 : CDK2 : CyclinE1 : ERalpha	; MYC; EGF; ERBB1; ERBB2; ERBB3; ERBB2 3; ERBB1 2;
	ERBB1 3	, , , , , , , , , , , , , , , , , , ,	,,
AKT1 ERalpha	AKT1 0	0	1 Stable state
, itt i_Litaipila	ERalpha 0	0	i otabio otato
		G	B2 ; ERBB3 ; ERBB2_3 ; ERBB1_2 ; ERBB1_3
	IVILIX I , ODINZ , OYUIIII	LI, WITO, LOI, LINDDI, ERE	D2 , LINDD0 , LINDD2_0 , LINDD1_2 , LINDD1_0

	MYC 0	0 ha;EGF;ERBB1;ERBB2;ERBB3;ERBB2_3;ERBB1_2;ERBB1_3
AKT1 CycE1	AKT1 0	1 Stable state
AKTI_CycET	CyclinE1 0	O T Stable State
		u ; <mark>pRB1</mark> ; ERalpha ; CDK6 ; MYC ; EGF ; ERBB1 ; ERBB2 ; ERBB3 ; ERBB2_3 ; ERBB1_2 ; ERBB1
MEK1_CDK2	MEK1, CDK4, Cyclind1,	, pro i , enalplia , coro , wito , egr , enabi , enabo , enabo , enabo_3 , enabi_2 , enabi_2 , enabi 1 Stable state
WERT_CDR2	CDK2 0	
		o E1 ; pRB1 ; ERalpha ; AKT1 ; CDK6 ; MYC ; EGF ; ERBB1 ; ERBB2 ; ERBB3 ; ERBB2 3 ; ERBB1 2
	ERBB1 3	TI, pro I, Eraipila, Art I, Coro, MTC, EGF, Erbb I, Erbb Z, Erbb J, Erbb Z_3, Erbb I_2
MEK1_CDK4	MEK1 0	0 1 Stable state
MERI_ODIC	CDK4 0	n Stable State
		E1; ERalpha; AKT1; CDK6; MYC; EGF; ERBB1; ERBB2; ERBB3; ERBB2; ERBB1; ERBB1; ERBB1; ERBB1; ERBB1; ERBB1; ERBB2; ERBB2; ERBB2; ERBB2; ERBB2; ERBB1; ERBB1; ERBB2; ER
	ERBB1 3	.i, Eraipila, Arti, Obito, Milo, Eoi, Erabbi, Erabba, Erabba, Erabba_o, Erabbi_z,
MEK1_p21	MEK1 0	0 1 Stable state
MERT_PZ I	p21 0	n Stable State
	ρ=.	CyclinE1; pRB1; ERalpha; AKT1; CDK6; MYC; EGF; ERBB1; ERBB2; ERBB3; ERBB2 3;
	ERBB1 2; ERBB1 3	oyomie i , pro i , erapita , /tri i , obito , wito , eoi , erabbi , erabbe , erabbe_o ,
MEK1 p27	MEK1 0	0 1 Stable state
MERT_P27	p27 0	0
		CyclinE1; pRB1; ERalpha; AKT1; CDK6; MYC; EGF; ERBB1; ERBB2; ERBB3; ERBB2 3;
	ERBB1 2; ERBB1 3	
MEK1_CycD1	MEK1 0	0 1 Stable state
,,	CyclinD1 0	0
	CDK2 ; CyclinE1 ; ERalpha	a ; AKT1 ; MYC ; EGF ; ERBB1 ; ERBB2 ; ERBB3 ; ERBB2_3 ; ERBB1_2 ; ERBB1_3
MEK1 ERBB2 3	MEK1 0	0 1 Stable state
	ERBB2 0	0
	ERBB3 0	0
	CDK4; CyclinD1; CDK2; 0	CyclinE1 ; pRB1 ; ERalpha ; AKT1 ; CDK6 ; MYC ; IGF1R ; EGF ; ERBB1
MEK1_ERBB1_3	MEK1 0	0 2 Stable states
	ERBB1_3 0	0
	ERBB1 0	0
	ERBB3 0	0
	p21 ; p27 ; EGF ; ERBB2	
		CyclinE1 ; pRB1 ; ERalpha ; AKT1 ; CDK6 ; MYC ; IGF1R ; EGF ; ERBB2
MEK1_ERBB1	MEK1 0	0 1 Stable state
	ERBB1 0	0
		CyclinE1 ; pRB1 ; ERalpha ; AKT1 ; CDK6 ; MYC ; EGF ; ERBB2 ; ERBB3 ; ERBB2_3
MEK1_ERBB2	MEK1 0	0 1 Stable state
	ERBB2 0	0
		CyclinE1; pRB1; ERalpha; AKT1; CDK6; MYC; IGF1R; EGF; ERBB1; ERBB3; ERBB1_3
MEK1_ERBB1_2	MEK1 0	0 2 Stable states
	ERBB1_2 0	0
	ERBB1 0	0

	ERBB2 0 0	
	p21; p27; EGF; ERBB3	
		Ralpha ; AKT1 ; CDK6 ; MYC ; IGF1R ; EGF ; ERBB3
MEK1_IGF1R	MEK1 0 0	1 Stable state
	IGF1R 0 0	
		:Ralpha ; AKT1 ; CDK6 ; MYC ; EGF ; ERBB1 ; ERBB2 ; ERBB3 ; ERBB2_3 ;
	ERBB1_2; ERBB1_3	
MEK1_CDK6	MEK1 0 0	1 Stable state
	CDK6 0 0	
		; AKT1 ; MYC ; EGF ; ERBB1 ; ERBB2 ; ERBB3 ; ERBB2_3 ; ERBB1_2 ;
	ERBB1_3	
MEK1_ERalpha	MEK1 0 0	1 Stable state
	ERalpha 0 0	
	CDK2; CyclinE1; AKT1; MYC; EGF; ERBB	I ; ERBB2 ; ERBB3 ; ERBB2_3 ; ERBB1_2 ; ERBB1_3
MEK1_MYC	MEK1 0 0	1 Stable state
	MYC 0 0	
	ERalpha; AKT1; EGF; ERBB1; ERBB2; ER	BB3 ; ERBB2_3 ; ERBB1_2 ; ERBB1_3
MEK1_CyclE1	MEK1 0 0	1 Stable state
	CyclinE1 0 0	
	CDK4; CyclinD1; pRB1; ERalpha; AKT1; C	DK6; MYC; EGF; ERBB1; ERBB2; ERBB3; ERBB2_3; ERBB1_2; ERBB1_3
CDK2_CDK4	CDK2 0 0	1 Stable state
_	CDK4 0 0	
	MEK1; CyclinD1; CyclinE1; ERalpha; AKT1	; CDK6 ; MYC ; EGF ; ERBB1 ; ERBB2 ; ERBB3 ; ERBB2_3 ; ERBB1_2 ;
	ERBB1_3	
CDK2_p21	CDK2 0 0	1 Stable state
	p21 0 0	
	MEK1; CDK4; CyclinD1; CyclinE1; pRB1; E	:Ralpha ; AKT1 ; CDK6 ; MYC ; EGF ; ERBB1 ; ERBB2 ; ERBB3 ; ERBB2_3 ;
	ERBB1_2; ERBB1_3	
CDK2_p27	CDK2 0 0	1 Stable state
	p27 0 0	
	MEK1; CDK4; CyclinD1; CyclinE1; pRB1; E	:Ralpha; AKT1; CDK6; MYC; EGF; ERBB1; ERBB2; ERBB3; ERBB2_3;
	ERBB1_2; ERBB1_3	
CDK2_CycD1	CDK2 0 0	1 Stable state
_ ,	CyclinD1 0 0	
	MEK1; CyclinE1; ERalpha; AKT1; MYC; EC	GF; ERBB1; ERBB2; ERBB3; ERBB2_3; ERBB1_2; ERBB1_3
CDK2_ERBB2_3	CDK2 0 0	1 Stable state
	ERBB2 0 0	
	ERBB3 0 0	
	MEK1; CDK4; CyclinD1; CyclinE1; pRB1; E	Ralpha ; AKT1 ; CDK6 ; MYC ; IGF1R ; EGF ; ERBB1
CDK2_ERBB1_3	CDK2 0 0	2 Stable states
	ERBB1_3 0 0	
	ERBB1 0 0	
	ERBB3 0 0	

	p21 ; p27 ; EGF ; ERBB2
	MEK1; CDK4; CyclinD1; CyclinE1; pRB1; ERalpha; AKT1; CDK6; MYC; IGF1R; EGF; ERBB2
CDK2 ERBB1	CDK2 0 0 1 Stable state
05.12_2.135.1	ERBB1 0 0
	MEK1 ; CDK4 ; CyclinD1 ; CyclinE1 ; pRB1 ; ERalpha ; AKT1 ; CDK6 ; MYC ; EGF ; ERBB2 ; ERBB3 ; ERBB2_3
CDK2_ERBB2	CDK2 0 0 1 Stable state
05.12_2.1352	ERBB2 0 0
	MEK1; CDK4; CyclinD1; CyclinE1; pRB1; ERalpha; AKT1; CDK6; MYC; IGF1R; EGF; ERBB1; ERBB3; ERBB1_3
CDK2_ERBB1_2	CDK2 0 0 2 Stable states
05.12_2.1352	ERBB1 0 0
	ERBB2 0 0
	p21 ; p27 ; EGF ; ERBB3
	MEK1; CDK4; CyclinD1; CyclinE1; pRB1; ERalpha; AKT1; CDK6; MYC; IGF1R; EGF; ERBB3
CDK2_IGF1R	CDK2 0 0 1 Stable state
	IGF1R 0 0
	MEK1; CDK4; CyclinD1; CyclinE1; pRB1; ERalpha; AKT1; CDK6; MYC; EGF; ERBB1; ERBB2; ERBB3; ERBB2 3;
	ERBB1 2; ERBB1 3
CDK2 CDK6	CDK2 0 0 1 Stable state
_	CDK6 0 0
	MEK1; CDK4; CyclinD1; CyclinE1; ERalpha; AKT1; MYC; EGF; ERBB1; ERBB2; ERBB3; ERBB2; ERBB1; ERBB1; ERBB1; ERBB1; ERBB2; ERBB2; ERBB2; ERBB2; ERBB1; ERBB1; ERBB2; ERBB2; ERBB2; ERBB2; ERBB1; ERBB2; E
	ERBB1 3
CDK2_ERalpha	CDK2 0 0 1 Stable state
	ERalpha 0 0
	MEK1; CyclinE1; AKT1; MYC; EGF; ERBB1; ERBB2; ERBB3; ERBB2_3; ERBB1_2; ERBB1_3
CDK2_MYC	CDK2 0 0 1 Stable state
	MYC 0 0
	MEK1; ERalpha; AKT1; EGF; ERBB1; ERBB2; ERBB3; ERBB2_3; ERBB1_2; ERBB1_3
CDK2_CycE1	CDK2 0 0 1 Stable state
	CyclinE1 0 0
	MEK1; CDK4; CyclinD1; pRB1; ERalpha; AKT1; CDK6; MYC; EGF; ERBB1; ERBB2; ERBB3; ERBB2_3; ERBB1_2;
	ERBB1_3
CDK4_p21	CDK4 0 0 1 Stable state
	p21 0 0
	MEK1; CyclinD1; CDK2; CyclinE1; ERalpha; AKT1; CDK6; MYC; EGF; ERBB1; ERBB2; ERBB3; ERBB2_3; ERBB1_2
	ERBB1_3
CDK4_p27	CDK4 0 0 1 Stable state
	p27 0 0
	MEK1; CyclinD1; CDK2; CyclinE1; ERalpha; AKT1; CDK6; MYC; EGF; ERBB1; ERBB2; ERBB3; ERBB2_3; ERBB1_2
	ERBB1_3
CDK4_CycD1	CDK4 0 0 1 Stable state
	CyclinD1 0 0
	MEK1 ; CDK2 ; CyclinE1 ; ERalpha ; AKT1 ; MYC ; EGF ; ERBB1 ; ERBB2 ; ERBB3 ; ERBB2_3 ; ERBB1_2 ; ERBB1_3
CDK4_ERBB2_3	CDK4 0 0 1 Stable state

	ERBB2 0	0	
	ERBB3 0	<u> </u>	
		; CDK2 ; CyclinE1 ; ERalph	a; AKT1; CDK6; MYC; IGF1R; EGF; ERBB1
CDK4_ERBB1_3	CDK4 0	0	2 Stable states
	ERBB1_3 0	0	
	ERBB1 0	0	
	ERBB3 0		
	p21; p27; EGF;		
			a; AKT1; CDK6; MYC; IGF1R; EGF; ERBB2
CDK4_ERBB1	CDK4 0	•	1 Stable state
	ERBB1 0	_	AVE. 0010 1000 505 5000 5000 50000 6
001// 50000			a; AKT1; CDK6; MYC; EGF; ERBB2; ERBB3; ERBB2_3
CDK4_ERBB2	CDK4 0		1 Stable state
	ERBB2 0	•	AVT4 ORVO AVVO JOS4R SOS ERRRA ERRRA ERRRA O
ODICA EDDDA O			a; AKT1; CDK6; MYC; IGF1R; EGF; ERBB1; ERBB3; ERBB1_3
CDK4_ERBB1_2	CDK4 0		2 Stable states
	ERBB1_2 0 ERBB1 0		
	ERBB1 0	•	
	p21 ; p27 ; EGF ;		
			a ; AKT1 ; CDK6 ; MYC ; IGF1R ; EGF ; ERBB3
CDK4_IGF1R	CDK4 0		1 Stable state
	IGF1R 0	<u> </u>	1 Stable State
			a; AKT1; CDK6; MYC; EGF; ERBB1; ERBB2; ERBB3; ERBB2 3; ERBB1 2;
	ERBB1 3	, obite , oyomie i , ertaipii	a,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
CDK4_CDK6	CDK4 0	0	1 Stable state
	CDK6 0		
	MEK1 : CvclinD1	: CDK2 : CvclinE1 : ERalph	a; AKT1; MYC; EGF; ERBB1; ERBB2; ERBB3; ERBB2 3; ERBB1 2;
	ERBB1 3	, - , - , - ,	
CDK4 ERalpha	CDK4 0	0	1 Stable state
	ERalpha 0	0	
	MEK1; CDK2; C	CyclinE1 ; AKT1 ; MYC ; EGI	F; ERBB1; ERBB2; ERBB3; ERBB2_3; ERBB1_2; ERBB1_3
CDK4_MYC	CDK4 0	0	1 Stable state
	MYC 0	0	
	MEK1; ERalpha	; AKT1; EGF; ERBB1; ER	BB2 ; ERBB3 ; ERBB2_3 ; ERBB1_2 ; ERBB1_3
CDK4_CycE1	CDK4 0	•	1 Stable state
	CyclinE1 0	_	
	•		MYC; EGF; ERBB1; ERBB2; ERBB3; ERBB2_3; ERBB1_2; ERBB1_3
p21_p27	p21 0	•	1 Stable state
	p27 0		
			pRB1; ERalpha; AKT1; CDK6; MYC; EGF; ERBB1; ERBB2; ERBB3;
104 0 104		B1_2 ; ERBB1_3	4.00 bloodst
p21_CycD1	p21 0	0	1 Stable state

	CyclinD1 0 0 MEK1 ; CDK2 ; CyclinE1 ; ERalpha ; AKT1 ; MYC ; EGF ; ERBB1 ; ERBB2 ; ERBB3 ; ERBB2_3 ; ERBB1_2 ; ERBB1_	3
p21_ERBB2_3	p21 0 0 1 Stable state	
p2 :_2:\BB2_0	ERBB2 0 0	
	ERBB3 0 0	
	MEK1; CDK4; CyclinD1; CDK2; CyclinE1; pRB1; ERalpha; AKT1; CDK6; MYC; IGF1R; EGF; ERBB1	
p21_ERBB1_3	p21 0 0 2 Stable states	
P= :_=:	ERBB1 3 0 0	
	ERBB1 0 0	
	ERBB3 0 0	
	p27; EGF; ERBB2	
	MEK1; CDK4; CyclinD1; CDK2; CyclinE1; pRB1; ERalpha; AKT1; CDK6; MYC; IGF1R; EGF; ERBB2	
p21_ERBB1	p21 0 0 1 Stable state	
'	ERBB1 0 0	
	MEK1; CDK4; CyclinD1; CDK2; CyclinE1; pRB1; ERalpha; AKT1; CDK6; MYC; EGF; ERBB2; ERBB3; ERBB	2_3
p21_ERBB2	p21 0 0 1 Stable state	_
. –	ERBB2 0 0	
	MEK1; CDK4; CyclinD1; CDK2; CyclinE1; pRB1; ERalpha; AKT1; CDK6; MYC; IGF1R; EGF; ERBB1; ERBB3	3; ERBB1_3
p21_ERBB1_2	p21 0 0 2 Stable states	
	ERBB2 0 0	
	ERBB1_2 0 0	
	ERBB1 0 0	
	p27 ; EGF ; ERBB3	
	MEK1; CDK4; CyclinD1; CDK2; CyclinE1; pRB1; ERalpha; AKT1; CDK6; MYC; IGF1R; EGF; ERBB3	
p21_IGF1R	p21 0 0 1 Stable state	
	IGF1R 0 0	
	MEK1; CDK4; CyclinD1; CDK2; CyclinE1; pRB1; ERalpha; AKT1; CDK6; MYC; EGF; ERBB1; ERBB2; ERBB	3;
	ERBB2_3; ERBB1_2; ERBB1_3	
p21_CDK6	p21 0 0 1 Stable state	
	CDK6 0 0	
	MEK1; CDK4; CyclinD1; CDK2; CyclinE1; ERalpha; AKT1; MYC; EGF; ERBB1; ERBB2; ERBB3; ERBB2_3; E	ERBB1_2 ;
04 55 11	ERBB1_3	
p21_ERalpha	p21 0 0 1 Stable state	
	ERalpha 0 0	
04.10/0	MEK1; CDK2; CyclinE1; AKT1; MYC; EGF; ERBB1; ERBB2; ERBB3; ERBB2_3; ERBB1_2; ERBB1_3	
p21_MYC	p21 0 0 1 Stable state	
	MYC 0 0	
04 OverE4	MEK1; ERalpha; AKT1; EGF; ERBB1; ERBB2; ERBB3; ERBB2_3; ERBB1_2; ERBB1_3	
p21_CycE1	p21 0 0 1 Stable state	
	CyclinE1 0 0 MEK4 - ODK4 - Overlin D4 - r DD4 - EDelete - AKT4 - ODK6 - MY6 - EGE - EDDD4 - EDDD9 - E	DD4 0 :
	MEK1; CDK4; CyclinD1; pRB1; ERalpha; AKT1; CDK6; MYC; EGF; ERBB1; ERBB2; ERBB3; ERBB2_3; ERB	3B1_2 ;
-07 OveD4	ERBB1_3	
p27_CycD1	p27 0 0 1 Stable state	

	CyclinD1 0 0 MEK4 : CDK2 : CyclinE4 : EDolpho : AK44 : MYC : ECE : EDDD4 : EDDD2 : EDDD2 : EDDD2 : EDDD4 : ED	
.07 EDDD0 0	MEK1; CDK2; CyclinE1; ERalpha; AKT1; MYC; EGF; ERBB1; ERBB2; ERBB3; ERBB2_3; ERBB1_2; ERBB1_3	
p27_ERBB2_3	p27 0 0 1 Stable state	
	ERBB2 0 0	
	ERBB3 0 0	
	MEK1; CDK4; CyclinD1; CDK2; CyclinE1; pRB1; ERalpha; AKT1; CDK6; MYC; IGF1R; EGF; ERBB1	
p27_ERBB1_3	p27 0 0 2 Stable states	
	ERBB1_3 0 0	
	ERBB1 0 0	
	ERBB3 0 0	
	p21 ; EGF ; ERBB2	
	MEK1 ; CDK4 ; CyclinD1 ; CDK2 ; CyclinE1 ; pRB1 ; ERalpha ; AKT1 ; CDK6 ; MYC ; IGF1R ; EGF ; ERBB2	
p27_ERBB1	p27 0 0 1 Stable state	
	ERBB1 0 0	
	MEK1; CDK4; CyclinD1; CDK2; CyclinE1; pRB1; ERalpha; AKT1; CDK6; MYC; EGF; ERBB2; ERBB3; ERBB2_3	
p27_ERBB2	p27 0 0 1 Stable state	
	ERBB2 0 0	
	MEK1; CDK4; CyclinD1; CDK2; CyclinE1; pRB1; ERalpha; AKT1; CDK6; MYC; IGF1R; EGF; ERBB1; ERBB3; ERB	B1_1
p27_ERBB1_2	p27 0 0 2 Stable states	
·	ERBB2 0 0	
	ERBB1 2 0 0	
	ERBB1 0 0	
	p21; EGF; ERBB3	
	MEK1; CDK4; CyclinD1; CDK2; CyclinE1; pRB1; ERalpha; AKT1; CDK6; MYC; IGF1R; EGF; ERBB3	
p27 IGF1R	p27 0 0 1 Stable state	
• –	iGF1R 0 0	
	MEK1; CDK4; CyclinD1; CDK2; CyclinE1; pRB1; ERalpha; AKT1; CDK6; MYC; EGF; ERBB1; ERBB2; ERBB3;	
	ERBB2 3 ; ERBB1 2 ; ERBB1 3	
p27 CDK6	p27 0 0 1 Stable state	
• –	CDK6 0 0	
	MEK1; CDK4; CyclinD1; CDK2; CyclinE1; ERalpha; AKT1; MYC; EGF; ERBB1; ERBB2; ERBB3; ERBB2_3; ERBB1	2:
	ERBB1 3	<i>- '</i>
p27_ERalpha	p27 0 0 1 Stable state	
P=1 ==1	ERalpha 0 0	
	MEK1; CDK2; CyclinE1; AKT1; MYC; EGF; ERBB1; ERBB2; ERBB3; ERBB2_3; ERBB1_2; ERBB1_3	
p27 MYC	p27 0 0 1 Stable state	
p210	MYC 0 0	
	MEK1 ; ERalpha ; AKT1 ; EGF ; ERBB1 ; ERBB2 ; ERBB3 ; ERBB2_3 ; ERBB1_2 ; ERBB1_3	
p27_CycE1	p27 0 0 1 Stable state	
p20,02.	CyclinE1 0 0	
	MEK1; CDK4; CyclinD1; pRB1; ERalpha; AKT1; CDK6; MYC; EGF; ERBB1; ERBB2; ERBB3; ERBB2 3; ERBB1 2	
	ERBB1 3	,
CycD1 ERBB2 3	CyclinD1 0 0 1 Stable state	
CYCD I_ERDDZ_3	Cyclin D 1 O 1 Stable State	

	ERBB2 0 0
	ERBB3 0 0
	MEK1 ; CDK2 ; CyclinE1 ; ERalpha ; AKT1 ; MYC ; IGF1R ; EGF ; ERBB1
CycD1_ERBB1_3	CyclinD1 0 0 2 Stable states
	ERBB1 3 0 0
	ERBB1 0 0
	ERBB3 0 0
	p21 ; p27 ; EGF ; ERBB2
	MEK1; CDK2; CyclinE1; ERalpha; AKT1; MYC; IGF1R; EGF; ERBB2
CycD1_ERBB1	CyclinD1 0 0 1 Stable state
	ERBB1 0 0
	MEK1 ; CDK2 ; CyclinE1 ; ERalpha ; AKT1 ; MYC ; EGF ; ERBB2 ; ERBB3 ; ERBB2_3
CycD1_ERBB2	CyclinD1 0 0 1 Stable state
	ERBB2 0 0
	MEK1 ; CDK2 ; CyclinE1 ; ERalpha ; AKT1 ; MYC ; IGF1R ; EGF ; ERBB1 ; ERBB3 ; ERBB1_3
CycD1_ERBB1_2	CyclinD1 0 0 2 Stable states
	ERBB2 0 0
	ERBB1_2 0 0
	ERBB1 0 0
	p21; p27; EGF; ERBB3
	MEK1 ; CDK2 ; CyclinE1 ; ERalpha ; AKT1 ; MYC ; IGF1R ; EGF ; ERBB3
CycD1_IGF1R	CyclinD1 0 0 1 Stable state
	IGF1R 0 0
	MEK1; CDK2; CyclinE1; ERalpha; AKT1; MYC; EGF; ERBB1; ERBB2; ERBB3; ERBB2_3; ERBB1_2; ERBB1_3
CycD1_CDK6	CyclinD1 0 0 1 Stable state
	CDK6 0 0
	MEK1; CDK2; CyclinE1; ERalpha; AKT1; MYC; EGF; ERBB1; ERBB2; ERBB3; ERBB2_3; ERBB1_2; ERBB1_3
CycD1_ERalpha	CyclinD1 0 0 1 Stable state
	ERalpha 0 0
	MEK1; CDK2; CyclinE1; AKT1; MYC; EGF; ERBB1; ERBB2; ERBB3; ERBB2_3; ERBB1_2; ERBB1_3
CycD1_MYC	CyclinD1 0 0 1 Stable state
	MYC 0 0
0.01.0.51	MEK1 ; ERalpha ; AKT1 ; EGF ; ERBB1 ; ERBB2 ; ERBB3 ; ERBB2_3 ; ERBB1_2 ; ERBB1_3
CycD1_CycE1	CyclinD1 0 0 1 Stable state
	CyclinE1 0 0
	MEK1; ERalpha; AKT1; MYC; EGF; ERBB1; ERBB2; ERBB3; ERBB2_3; ERBB1_2; ERBB1_3
ERBB1_2_3	ERBB2 0 0 2 Stable states
	ERBB3 0 0
	ERBB1_2
	ERBB1_3 0 0
	ERBB1 0 0
	p21 ; p27 ; EGF
	MEK1 ; CDK4 ; CyclinD1 ; CDK2 ; CyclinE1 ; pRB1 ; ERalpha ; AKT1 ; CDK6 ; MYC ; IGF1R ; EGF

ERBB2_3_IGFR1	ERBB2	0	0	1 Stable state
	ERBB3	0	0	
	IGF1R	0	0	
		•	CDK2 : CvclinE1	; pRB1 ; ERalpha ; AKT1 ; CDK6 ; MYC ; EGF ; ERBB1
ERBB2_3_CDK6	ERBB2	0	0	1 Stable state
	ERBB3	0	0	
	CDK6	0	0	
		~	CDK2 · CyclinF1	; ERalpha ; AKT1 ; MYC ; IGF1R ; EGF ; ERBB1
ERBB2_3_ERalpha	ERBB2	0	0	1 Stable state
	ERBB3	Ö	0	
	ERalpha	0	0	
		•	AKT1 · MYC · IG	F1R ; EGF ; ERBB1
ERBB2_3_MYC	ERBB2	0	0	1 Stable state
	ERBB3	0	0	1 otable etate
	MYC	0	0	
		•	GF1R ; EGF ; EF	RRR1
ERBB2_3_CycE1	ERBB2	0	0	1 Stable state
	ERBB3	0	0	1 otable state
	CyclinE1	0	0	
		~	nRR1 · FRainha	; AKT1 ; CDK6 ; MYC ; IGF1R ; EGF ; ERBB1
ERBB1_3_IGF1R	ERBB1 3	0	0	1 Stable state
210B1_0_181 110	ERBB1	0	0	1 otable state
	ERBB3	0	0	
	IGF1R	0	0	
		EGF ; ERBB2	O	
ERBB1 3 CDK6	ERBB1 3	0	0	2 Stable states
211881_0_08110	ERBB1	0	0	
	ERBB3	0	0	
	CDK6	0	0	
		EGF ; ERBB2	U	
	MEK1 · CD	4 · CvclinD1 · (CDK2 · CyclinE1	; ERalpha ; AKT1 ; MYC ; IGF1R ; EGF ; ERBB2
ERBB1 3 ERalpha	ERBB1 3	0	0	2 Stable states
ENDBI_O_ENGIPHO	ERBB1	0	0	2 otable states
	ERBB3	0	0	
	ERalpha	0	0	
		EGF ; ERBB2	· ·	
			AKT1 · MYC · IG	F1R ; EGF ; ERBB2
ERBB1 3 MYC	ERBB1 3	0	0	2 Stable states
	ERBB1	0	0	
	ERBB3	0	0	
	MYC	0	0	
		EGF ; ERBB2	<u> </u>	
			GF1R ; EGF ; EF	PBB2
ERBB1_3_CycE1	ERBB1 3	0	0	2 Stable states
LINDDI_3_CYCEI	ELDD I_2	U	U	2 Stable States

	ERBB1 0 0	
	ERBB3 0 0	
	CyclinE1 0 0	
	p21 ; p27 ; EGF ; ERBB2	
	MEK1; CDK4; CyclinD1; pRB1; ERalpha; AKT1; CDK6; MYC; IGF1R; EGF; ERBB2	
ERBB1_IGF1R	ERBB1 0 0 1 Stable state	
	IGF1R 0 0	
	MEK1; CDK4; CyclinD1; CDK2; CyclinE1; pRB1; ERalpha; AKT1; CDK6; MYC; EGF; ERBB2; ERI	BB3 ; ERBB2_3
ERBB1_CDK6	ERBB1 0 0 1 Stable state	
	CDK6 0 0	
	MEK1; CDK4; CyclinD1; CDK2; CyclinE1; ERalpha; AKT1; MYC; EGF; ERBB2; ERBB3; ERBB2_3	
ERBB1_ERalpha	ERBB1 0 0 1 Stable state	
	ERalpha 0 0	
	MEK1; CDK2; CyclinE1; AKT1; MYC; EGF; ERBB2; ERBB3; ERBB2_3	
ERBB1_MYC	ERBB1 0 0 1 Stable state	
	MYC 0 0	
	MEK1; ERalpha; AKT1; EGF; ERBB2; ERBB3; ERBB2_3	
ERBB1_CycE1	ERBB1 0 0 1 Stable state	
	CyclinE1 0 0	
	MEK1; CDK4; CyclinD1; pRB1; ERalpha; AKT1; CDK6; MYC; EGF; ERBB2; ERBB3; ERBB2_3	
IGF1R_CDK6	IGF1R 0 0 1 Stable state	
	CDK6 0 0	
	MEK1; CDK4; CyclinD1; CDK2; CyclinE1; ERalpha; AKT1; MYC; EGF; ERBB1; ERBB2; ERBB3; ERBB1 3	ERBB2_3 ; ERBB1_2 ;
IGF1R ERalpha	IGF1R 0 0 1 Stable state	
	ERalpha 0 0	
	MEK1; CDK2; CyclinE1; AKT1; MYC; EGF; ERBB1; ERBB2; ERBB3; ERBB2_3; ERBB1_2; ERBB	1 3
IGF1R MYC	IGF1R 0 0 1 Stable state	
_	MYC 0 0	
	MEK1; ERalpha; AKT1; EGF; ERBB1; ERBB2; ERBB3; ERBB2 3; ERBB1 2; ERBB1 3	
IGF1R_CycE1	IGF1R 0 0 1 Stable state	
_ ,	CyclinE1 0 0	
	MEK1; CDK4; CyclinD1; pRB1; ERalpha; AKT1; CDK6; MYC; EGF; ERBB1; ERBB2; ERBB3; ERB	3B2 3; ERBB1 2;
	ERBB1 3	_ , _ ,
CDK6 ERalpha	CDK6 0 0 1 Stable state	
	ERalpha 0 0	
	MEK1; CDK2; CyclinE1; AKT1; MYC; EGF; ERBB1; ERBB2; ERBB3; ERBB2 3; ERBB1 2; ERBB	1 3
CDK6 MYC	CDK6 0 0 1 Stable state	_
_	MYC 0 0	
	MEK1; ERalpha; AKT1; EGF; ERBB1; ERBB2; ERBB3; ERBB2_3; ERBB1_2; ERBB1_3	
CDK6_CycE1	CDK6 0 0 1 Stable state	
	CyclinE1 0 0	
	MEK1; CDK4; CyclinD1; ERalpha; AKT1; MYC; EGF; ERBB1; ERBB2; ERBB3; ERBB2_3; ERBB1	2 : ERBB1 3
	, 0, 0,	,

ERalpha_MYC	ERalpha	0	0	1 Stable state				
. –	MYC	0	0					
	MEK1; AKT	MEK1; AKT1; EGF; ERBB1; ERBB2; ERBB3; ERBB2_3; ERBB1_2; ERBB1_3						
ERalpha_CyclinE1	ERalpha	0	0	1 Stable state				
	CyclinE1	0	0					
	MEK1; AKT	1; MYC;	EGF; ERBB1; ERBE	2 ; ERBB3 ; ERBB2_3 ; ERBB1_2 ; ERBB1_3				
MYC_CycE1	CyclinE1	0	0	1 Stable state				
	ERalpha	0	0					
	MEK1; AKT	1; MYC;	EGF; ERBB1; ERBE	2 ; ERBB3 ; ERBB2_3 ; ERBB1_2 ; ERBB1_3				

Table 2 Analysis of the effects of knockdowns on G1/S transition (p-pRB response).

	ERBB1_2_3	ERalpha	AKT1	ERalpha_AKT1
P-value	<0.001	<0.001	<0.001	<0.001
Similarity to MOCK	Yes	No	Yes	No
Boolean interpretation (pRB				
response)	1	0	1	0