	Simultaneous
Gene name	20 genes
	CLN3 expression ratio ≤1.3
	MCM1 expression ratio ≤ 1.1
	CDC34 expression ratio ≤1.1
	CLB6 expression ratio ≤0.7 CLB6 expression ratio ≤1= downregulated
CDC28	CLB6 expression ratio >1= upregulated
	CDC34 expression ratio >1= upregulated
	MCM1 expression ratio >1.1= upregulated
	CLN3 expression ratio >1.3= upregulated
	CDC34 expression ratio ≤1= upregulated
MBP1	CDC34 expression ratio >1= downregulated
	CLB6 expression ratio ≤0.7= downregulated
	CLB6 expression ratio >0.7 downregulated
	SWI5 expression ratio ≤0.5= downregulated
	SWI5 expression ratio \(\) \(\) downlegulated SWI5 expression ratio \(\) \(\
CDC53	CLN3 expression ratio \leq 1.2= upregulated
	CLN3 expression ratio \(\left\) 1.2 upregulated
	CENS expression ratio >1.2 HCT1 expression ratio ≤1= upregulated
	HCT1 expression ratio >1= downregulated
CDC34	MBP1 expression ratio ≤1.2= upregulated
	MBP1 expression ratio >1.2= downregulated
	CLB2 expression ratio ≤0.8= downregulated
SWI5	CLB2 expression ratio >0.8
	SWI4 expression ratio ≤1.1= upregulated
	SWI4 expression ratio >1.1= downregulated
SKP1	CDC34 expression ratio ≤0.9= downregulated
	CDC34 expression ratio >0.9= upregulated
	SKP1 expression ratio ≤0.6= downregulated
	SKP1 expression ratio >0.6
	MBP1 expression ratio ≤0.7= upregulated
SWI4	MBP1 expression ratio >0.7
	CDC53 expression ratio ≤1
	SIC1 expression ratio ≤0.6= upregulated
	SIC1 expression ratio >0.6= downregulated
	CDC53 expression ratio >1= upregulated
	SWI6 expression ratio ≤ 1.2
	CLN1 expression ratio ≤2
	CDC53 expression ratio ≤1= upregulated
	CDC53 expression ratio >1
HCT1	CLB1 expression ratio ≤0.7= downregulated
псп	CLB1 expression ratio >0.7
	CLB1 expression ratio ≤0.8= upregulated
	CLB1 expression ratio >0.8= downregulated
	CLN1 expression ratio >2= downregulated
	SWI6 expression ratio >1.2= downregulated
	CLN1 expression ratio ≤1.2
	MBP1 expression ratio ≤0.8= upregulated
	MBP1 expression ratio >0.8
CDC20	CLN2 expression ratio ≤0.5= upregulated
	CLN2 expression ratio >0.5
	HCT1 expression ratio ≤0.9= upregulated
	HCT1 expression ratio >0.9= downregulated
	CLN1 expression ratio >1.2= downregulated

SIC1	SWI4 expression ratio ≤1.1
	CLN3 expression ratio ≤1.4= downregulated
	CLN3 expression ratio >1.4= upregulated
	SWI4 expression ratio >1.1= upregulated
	SWI5 expression ratio ≤0.6= upregulated
	SWI5 expression ratio >0.6
	CLB4 expression ratio ≤1.3
SWI6	CLN3 expression ratio ≤0.8
21120	SIC1 expression ratio ≤1= downregulated
	SIC1 expression ratio >1= upregulated
	CLN3 expression ratio >0.8= downregulated
	CLB4 expression ratio >1.3= upregulated
	CDC53 expression ratio ≤0.7= upregulated
MCM1	CDC53 expression ratio >0.7
	HCT1 expression ratio ≤0.8= upregulated
	HCT1 expression ratio >0.8= downregulated
	CDC20 expression ratio ≤0.8= upregulated
CLN1	CDC20 expression ratio >0.8
	CLN2 expression ratio ≤1.2= downregulated
	CLN2 expression ratio >1.2= upregulated
	SWI5 expression ratio ≤1.1
	CLN1 expression ratio <0.8
CLN2	CDC28 expression ratio ≤0.9= upregulated
	CDC28 expression ratio > 0.9= downregulated
	CLN1 expression ratio >0.8= upregulated SWI5 expression ratio >1.1= downregulated
	SKP1 expression ratio ≤1.3
	CLB4 expression ratio ≤1.6
	SWI5 expression ratio ≤1.7= upregulated
CLN3	SWI5 expression ratio \(\left\) 1.7= depregulated
	CLB4 expression ratio >1.6= downregulated
	SKP1 expression ratio >1.3= downregulated
	CLB2 expression ratio ≤1= downregulated
CLB1	CLB2 expression ratio >1= upregulated
	CLB2 expression ratio >1= upregulated CLB1 expression ratio ≤0.9= downregulated
CLB2	CLB1 expression ratio >0.9= downregulated
	CLN3 expression ratio ≤0.9= upregulated CLN3 expression ratio ≤1
	CDC34 expression ratio ≤0.8= downregulated
CLB4	CDC34 expression ratio >0.8= upregulated
	CLN3 expression ratio >1= downregulated
	CLB6 expression ratio ≤1.1
	MCM1 expression ratio ≤0.9= downregulated
	MCM1 expression ratio ≤0.9 MCM1 expression ratio >0.9
CLB5	SKP1 expression ratio ≥0.9
	SKP1 expression ratio \(\leq 1.2 \) upregulated SKP1 expression ratio \(\req 1.2 \) downregulated
	CLB6 expression ratio >1.1= upregulated
	CLB6 expression ratio >1.1= upregulated CLB5 expression ratio ≤1.1
	SWI5 expression ratio ≤1.7= downregulated
CLB6	SWI5 expression ratio >1.7= downlegulated
	CLB5 expression ratio >1.1= upregulated
	CLLC Onpression ratio > 111— aprogulation

20
20 genes
MBP1 expression ratio \leq 0.7= upregulated next step
MBP1 expression ratio > 0.7
SWI4 expression ratio ≤ 0.7 = upregulated next step
SWI4 expression ratio > 0.7= downregulated next step
CDC34 expression ratio ≤ 0.9
SWI4 expression ratio ≤ 0.9
SIC1 expression ratio \leq 0.6= downregulated next step
SIC1 expression ratio > 0.6= upregulated next step
SWI4 expression ratio > 0.9= downregulated next step
CDC34 expression ratio > 0.9 = upregulated next step
SIC1 expression ratio \leq 0.5= downregulated next step
SIC1 expression ratio > 0.5
CLN1 expression ratio \leq 0.5= downregulated next step
CLN1 expression ratio > 0.5= upregulated next step
MBP1 expression ratio ≤ 1.2= downregulated next step
MBP1 expression ratio > 1.2
CLB4 expression ratio \leq 0.7= downregulated next step
CLB4 expression ratio > 0.7= upregulated next step
CLB1 expression ratio ≤ 1
CLN3 expression ratio ≤ 0.8 = upregulated next step
CLN3 expression ratio > 0.8= downregulated next step
CLB1 expression ratio > 1= upregulated next step
MBP1 expression ratio ≤ 1.2 = downregulated next step
MBP1 expression ratio > 1.2
CLB4 expression ratio ≤ 0.7 = downregulated next step
CLB4 expression ratio > 0.7= upregulated next step
CDC28 expression ratio ≤ 1.1
CLN3 expression ratio ≤ 0.9 = downregulated next step
CLN3 expression ratio > 0.9
CLN2 expression ratio ≤ 0.8 = downregulated next step
CLN2 expression ratio > 0.8 = upregulated next step
CDC28 expression ratio > 1.1= upregulated next step
SWI5 expression ratio ≤ 1.6
SWI5 expression ratio ≤ 1.2
CLB1 expression ratio ≤ 0.8
CLN1 expression ratio ≤ 1.9= downregulated next step
CLN1 expression ratio > 1.9= upregulated next step
CLB1 expression ratio > 0.8= upregulated next step
SWI5 expression ratio > 1.2= downregulated next step
SWI5 expression ratio > 1.6= upregulated next step
CLB1 expression ratio ≤ 0.6 = downregulated next step
CLB1 expression ratio > 0.6
CDC34 expression ratio ≤ 1.4= upregulated next step
CDC34 expression ratio > 1.4= downregulated next step
CLN3 expression ratio ≤ 1= downregulated next step
CLIND EXDIESSION TALIO > 1= unlegurated next sien
CLN3 expression ratio > 1= upregulated next step SKP1 expression ratio < 0.9
SKP1 expression ratio ≤ 0.9

	CDC53 expression ratio ≤ 0.9 = downregulated next step
	CDC53 expression ratio > 0.9
MCN/1	CLB4 expression ratio ≤ 0.9
MCM1	CLB4 expression ratio ≤ 0.6 = upregulated next step
	CLB4 expression ratio > 0.6= downregulated next step
	CLB4 expression ratio > 0.9= upregulated next step
CLN1	SWI5 expression ratio ≤ 1.1 = upregulated next step
CLNI	SWI5 expression ratio > 1.1= downregulated next step
CLN2	CLB1 expression ratio ≤ 1 = upregulated next step
CLNZ	CLB1 expression ratio > 1 = downregulated next step
CLN3	CDC53 expression ratio \leq 1= upregulated next step
CLINS	CDC53 expression ratio > 1= downregulated next step
CLB1	CLB6 expression ratio \leq 1.2= upregulated next step
CLDI	CLB6 expression ratio > 1.2= downregulated next step
CLB2	CLB6 expression ratio \leq 1.2= upregulated next step
CLD2	CLB6 expression ratio > 1.2= downregulated next step
	CLN1 expression ratio ≤ 0.7 = downregulated next step
CLB4	CLN1 expression ratio > 0.7
CLD4	MBP1 expression ratio ≤ 0.7 = downregulated next step
	MBP1 expression ratio > 0.7= upregulated next step
	CLB1 expression ratio ≤ 1.9
CLB5	SIC1 expression ratio \leq 0.5= downregulated next step
CLDS	SIC1 expression ratio > 0.5= upregulated next step
	CLB1 expression ratio > 1.9= downregulated next step
	SWI5 expression ratio \leq 0.8= upregulated next step
CLB6	SWI5 expression ratio > 0.8
CLBO	CLB4 expression ratio \leq 0.7= upregulated next step
	CLB4 expression ratio > 0.7= downregulated next step

	Changes
Gene name	20 genes
	SWI5 positive change = no change
	SWI5 no change
	CLB6 positive change = positive change
	CLB6 no change
	HCT1 positive change = no change
	HCT1 no change
CDC28	SWI4 positive change = no change
	SWI4 no change = no change
	SWI4 negative change = positive change
	HCT1 negative change = negative change
	CLB6 negative change = positive change
	SWI5 negative change = negative change
	CDC34 positive change = negative change
MBP1	CDC34 positive change = negative change CDC34 no change = no change
	CDC34 negative change = positive change
	MBP1 positive change
	CLB4 positive change = positive change
	CLB4 no change = no change
	CLB4 negative change = positive change
CDC53	MBP1 no change = no change
CD CCC	MBP1 negative change
	SWI5 positive change = negative change
	SWI5 positive change = negative change
	SWI5 negative change = no change
	MBP1 positive change = negative change
CDC34	MBP1 no change = no change
	MBP1 negative change = positive change
	CLN2 positive change = negative change
SWI5	CLN2 no change = no change
	CLN2 negative change = no change
	CDC34 positive change = positive change
SKP1	CDC34 no change = no change
	CDC34 negative change = negative change
	CLB1 positive change = no change
	CLB1 no change
	SKP1 positive change
	CDC53 positive change = no change
	CDC53 no change = positive change
SW14	CDC53 negative change = no change
SWI4	SKP1 no change = no change
	SKP1 negative change
	CLB4 positive change = negative change
	CLB4 no change = negative change
	CLB4 negative change = no change
	CLB1 negative change = positive change
	CLN2 positive change = no change
HCT1	CLN2 no change = no change
HCTI	CLIVE no change – no change

	MBP1 positive change
	SWI4 positive change = no change
	SWI4 no change = negative change
CD CAA	SWI4 negative change = no change
CDC20	MBP1 no change = positive change
	MBP1 negative change
	CDC28 positive change = no change
	CDC28 no change = positive change
	CDC28 negative change = no change
SIC1	= no change
	SKP1 positive change
	CDC53 positive change = positive change
	CDC53 no change = positive change
	CDC53 negative change = no change
SWI6	SKP1 no change
	CLB1 positive change = positive change
	CLB1 no change = positive change
	CLB1 negative change = no change
	SKP1 negative change = negative change
	CDC34 positive change
	SWI4 positive change = positive change
N. C. N. T. 1	SWI4 no change = no change
MCM1	SWI4 negative change = positive change
	CDC34 no change = no change
	CDC34 negative change = negative change
CLN1	= no change
	CLB5 positive change = positive change
CLN2	CLB5 no change = no change
	CLB5 negative change = negative change
	CLB4 positive change = negative change
CLN3	CLB4 no change = no change
	CLB4 negative change = positive change
	CLB2 positive change = positive change
CLB1	CLB2 no change = no change
	CLB2 negative change = negative change
	CLB1 positive change = positive change
CLB2	CLB1 no change = no change
~~ ~	CLB1 negative change = negative change
	SKP1 positive change
	CLN3 positive change = no change
	CLN3 no change = no change
	CLN3 negative change = positive change
CLB4	SKP1 no change = no change
CLDT	SKP1 negative change
	CDC53 positive change = negative change
	CDC53 positive change = negative change CDC53 no change = no change
	CDC53 no change = no change CDC53 negative change = negative change
	CLN2 positive change = positive change
CI R5	
CLB5	CLN2 no change = no change CLN2 negative change = negative change
CLB6	= no change
	- no anango

Gene name	Simultaneous
	Cyclins
CLN1	CLN2 expression ratio ≤ 1.1 = downregulated
	CLN2 expression ratio > 1.1 = upregulated
CLN2	CLB2 expression ratio ≤ 0.9 = upregulated
CLNZ	CLB2 expression ratio $> 0.9 =$ downregulated
	CLB4 expression ratio ≤ 0.9
	CLB2 expression ratio ≤ 1.9 = upregulated
CLN3	CLB2 expression ratio $> 1.9 =$ downregulated
CLNS	CLB4 expression ratio > 0.9
	CLB1 expression ratio ≤ 2.1 = downregulated
	CLB1 expression ratio > 2.1 = upregulated
CLB1	CLB2 expression ratio ≤ 1 = downregulated
CLDI	CLB2 expression ratio > 1 = upregulated
CLB2	CLB1 expression ratio $\leq 0.9 = \text{downregulated}$
CLD2	CLB1 expression ratio $> 0.9 = upregulated$
	CLN3 expression ratio ≤ 1
CLB4	CLB2 expression ratio ≤ 1.9 = upregulated
CLD4	CLB2 expression ratio $> 1.9 =$ downregulated
	CLN3 expression ratio $> 1 =$ downregulated
	CLB6 expression ratio ≤ 1.1
CLB5	CLN3 expression ratio ≤ 1.2 = downregulated
CLDS	CLN3 expression ratio > 1.2 = upregulated
	CLB6 expression ratio $> 1.1 = upregulated$
	CLB5 expression ratio ≤ 1.1
CLB6	CLB2 expression ratio ≤ 1.9 = downregulated
CLDU	CLB2 expression ratio $> 1.9 = upregulated$
	CLB5 expression ratio > 1.1 = upregulated

Gene name	Time delay
	Cyclins
	CLB2 expression ratio ≤ 0.9 = upregulated next step
CI NI	CLB2 expression ratio > 0.9
CLN1	CLB4 expression ratio ≤ 1.7 = downregulated next step
	CLB4 expression ratio > 1.7 = upregulated next step
CT NO	CLB1 expression ratio ≤ 1 = upregulated next step
CLN2	CLB1 expression ratio $> 1 =$ downregulated next step
	CLB2 expression ratio ≤ 1.6
	CLB4 expression ratio ≤ 1.7
	CLB1 expression ratio ≤ 0.6
CT NO	CLB2 expression ratio ≤ 0.5 = downregulated next step
CLN3	CLB2 expression ratio > 0.5 = upregulated next step
	CLB1 expression ratio > 0.6 = downregulated next step
	CLB4 expression ratio > 1.7 = upregulated next step
	CLB2 expression ratio > 1.6 = upregulated next step
CI D1	CLB6 expression ratio ≤ 1.2 = upregulated next step
CLB1	CLB6 expression ratio $> 1.2 =$ downregulated next step
CI D2	CLB6 expression ratio ≤ 1.2 = upregulated next step
CLB2	CLB6 expression ratio $> 1.2 =$ downregulated next step
	CLN1 expression ratio ≤ 0.7 = downregulated next step
	CLN1 expression ratio > 0.7
CLB4	CLB1 expression ratio ≤ 0.6
CLD4	CLB2 expression ratio ≤ 0.5 = upregulated next step
	CLB2 expression ratio > 0.5 = downregulated next step
	CLB1 expression ratio > 0.6 = upregulated next step
CLB5	CLB1 expression ratio ≤ 1.9 = upregulated next step
CLD5	CLB1 expression ratio $> 1.9 =$ downregulated next step
	CLB2 expression ratio ≤ 0.9 = upregulated next step
CLB6	CLB2 expression ratio > 0.9
CLDO	CLB4 expression ratio ≤ 0.7 = upregulated next step
	CLB4 expression ratio $> 0.7 =$ downregulated next step

Gene name	Changes Cyclins
CLN1	= no change
CLN2	CLB5 positive change = positive change CLB5 negative change = negative change CLB5 no change = no change
CLN3	CLB4 positive change = negative change CLB4 negative change = positive change CLB4 no change = no change
CLB1	CLB2 positive change = positive change CLB2 negative change = negative change CLB2 no change = no change
CLB2	CLB1 positive change = positive change CLB1 negative change = negative change CLB1 no change = no change
CLB4	CLN3 positive change = negative change CLN3 negative change = positive change CLN3 no change = no change
CLB5	CLN2 positive change = positive change CLN2 negative change = negative change CLN2 no change = no change
CLB6	= no change