

Table S1 Dependent variables in the reaction scheme**p53 oscillation system**

| | | | |
|-------------|------------------|-------------------|------------------------|
| <i>p53</i> | <i>p53</i> | <i>DNA damage</i> | DNA damage |
| <i>Mdm2</i> | <i>Mdm2</i> | <i>Deg</i> | DNA damage degradation |
| <i>II</i> | intermediator II | | |

G2/M phase cell cycle arrest

| | | | |
|---------------|----------------|-----------------------|------------------------|
| <i>Chk1</i> | <i>Chk1</i> | <i>transducer</i> | DNA damage transducer |
| <i>Chk1p</i> | <i>Chk1p</i> | <i>p21:aMPF</i> | p21:aMPF complex |
| <i>p21</i> | <i>p21</i> | <i>iCdc25p:14_3_3</i> | iCdc25p:14-3-3 complex |
| <i>Wee1</i> | <i>Wee1</i> | <i>Wee1p</i> | Wee1p |
| <i>iMPF</i> | inactive MPF | <i>aMPF</i> | active MPF |
| <i>aCdc25</i> | active Cdc25 | <i>aCdc25p</i> | active Cdc25p |
| <i>iCdc25</i> | inactive Cdc25 | <i>iCdc25p</i> | inactive Cdc25p |
| <i>14_3_3</i> | 14-3-3 | | |

Apoptosis induction system

| | | | |
|----------------------------|----------------------|--------------------------|---|
| <i>Apaf_1</i> | Apaf-1 | <i>Cytc:Apaf_1</i> | Cytochrome C:Apaf-1 complex |
| <i>casp9</i> | caspase9 | <i>apop:pro9_2</i> | apoptosome:procaspase9 ₂ complex |
| <i>IAP</i> | IAP | <i>casp9:IAP</i> | caspase9:IAP complex |
| <i>pro9</i> | procaspase9 | <i>apop:pro9</i> | apoptosome:procaspase9 complex |
| <i>apop</i> | apoptosome | <i>apop:casp9_2</i> | apoptosome:caspase9 ₂ |
| <i>pro3</i> | procaspase3 | <i>apop:casp9</i> | apoptosome:caspase9 complex |
| <i>casp8</i> | caspase8 | <i>apop:casp9:IAP</i> | apoptosome:caspase9:IAP complex |
| <i>casp3</i> | caspase3 | <i>p21:Pro3</i> | p21:procaspase3 complex |
| <i>Bid</i> | Bid | <i>apop:casp9_2:IAP</i> | apoptosome:caspase9 ₂ :IAP complex |
| <i>Bcl_2</i> | Bcl-2 | <i>casp3:IAP</i> | caspase3:IAP complex |
| <i>Bax</i> | Bax | <i>casp9:pro3</i> | caspase9:pro3 complex |
| <i>tBid</i> | tBid | <i>apop:casp9_2:pro3</i> | apoptosome:caspase9 ₂ :procaspase3 complex |
| <i>Cytc_{mito}</i> | Cytc _{mito} | <i>casp8:Bid</i> | caspase8:Bid complex |
| <i>Bax₂</i> | Bax ₂ | <i>casp3:Bid</i> | caspase3:Bid complex |
| <i>tBid_{mito}</i> | tBid _{mito} | <i>casp3:Bcl_2</i> | caspase3:Bcl-2 complex |
| <i>Cytc</i> | Cytc | <i>tBid:Bax</i> | tBid:Bax complex |