Supplemental Figure 1

Table 1. Model variables, their range and descriptions.

Variables	Range	Description
ER	0~1	Active ERα level
IRF1	0~1	Active IRF1 level
ATG7	0~1	Active ATG7 level
PI	0~1	Proliferation index

$$\frac{dER}{dt} = \gamma_{ER} \cdot \left(H(W_{ER}) - ER \right) \qquad \text{(S1)}$$

$$\frac{dIRF1}{dt} = \gamma_{IRF1} \cdot \left(H(W_{IRF1}) - IRF1 \right) \qquad \text{(S2)}$$

$$\frac{dATG7}{dt} = \gamma_{ATG7} \cdot \left(H(W_{ATG7}) - ATG7 \right) \qquad \text{(S3)}$$

$$\frac{dPI}{dt} = \gamma_{PI} \cdot \left(H(W_{PI}) - PI \right) \qquad \text{(S4)}$$

$$H(W) = \frac{1}{1 + e^{-W}} \qquad \text{(S5)}$$

$$W_{ER} = \omega_{ER} + \omega_{ER,ICI} \cdot \frac{ICI}{K_{mICI} + ICI} + \omega_{ER,ATG7} \cdot ATG7 \qquad \text{(S6)}$$

$$W_{IRF1} = \omega_{IRF1} + \omega_{IRF1,ER} \cdot ER + \omega_{IRF1,siIRF1} \cdot siIRF1 \qquad \text{(S7)}$$

$$W_{ATG7} = \omega_{ATG7} + \omega_{ATG7,IRF1} \cdot IRF1 + \omega_{ATG7,siATG7} \cdot siATG7 \qquad \text{(S8)}$$

$$W_{PI} = \omega_{PI} + \omega_{PI,IRF1} \cdot IRF1 + \omega_{PI,ATG7} \cdot ATG7 + \omega_{PI,ER} \cdot ER \qquad \text{(S9)}$$