Modulation of signaling cross-talk between pJNK and pAKT generates optimal apoptotic response

Sharmila Biswas¹, Baishakhi Tikader², Sandip Kar², Ganesh A Viswanathan¹

¹Department of Chemical Engineering, Indian Institute of Technology Bombay, Mumbai, India.
²Department of Chemistry, Indian Institute of Technology Bombay, Mumbai, India.

*These authors contributed equally to this work

Corresponding authors

E-mail: sandipkar@iitb.ac.in, ganeshav@iitb.ac.in

S7 Text

Semi-quantitative relationship between $<\text{AUC}_{\text{casp3}}>$ and Apoptosis levels
The relationship between model predicted $\langle AUC_{casp3} \rangle$ and the apoptosis levels in Fig 5B, main text is quantified using a fourth order polynomial function

$$\% \text{ Apoptosis} = A_0 + A_1 \langle AUC_{casp3} \rangle + A_2 \langle AUC_{casp3} \rangle^2 + A_3 \langle AUC_{casp3} \rangle^3 + A_4 \langle AUC_{casp3} \rangle^4$$

[S7.1]

The coefficients, estimated using Origin software, corresponding to the three stimulation conditions along with $R^2$ are presented in S6 Table. This was repeated twice, each by using trajectories obtained by simulations with five different best-fit parameters. The coefficients along with the reduced $\chi^2$ estimates for these two cases as well are in S6 Table. The reduced $\chi^2$ values suggest that the fit is good for TNF$\alpha$ treatment case. However, for TPL and TNF$\alpha$+TPL cases it overfits.