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

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ReadMe File

1) Experimental raw data
    a. DataForFig1.xlsx contains the raw data corresponding to Figure 1, main text and those in S1 Text.
    b. DataForFigS1.xlsx contains the raw data corresponding to S1 Fig.
    c. DataForFigS8.xlsx contains the raw data corresponding to S8 Fig.
    d. DataForInhi.xlsx contains the raw data corresponding to Figure 6, main text.

2) Model related information: Parameter estimation

I. Network model:

a. TNF_model_TNF_sbml.xml contains the network model corresponding Fig 2A and S2 Fig (for TNFα only case)

b. TNF_model_ TPL_sbml.xml contains the network model corresponding Fig 2A and S2 Fig (for TPL only case)

c. TNF_model_TNF_TPL_sbml.xml contains the network model corresponding Fig 2A and S2 Fig (for TNFα+TPL case)

II. Matlab files for PottersWheel

The following 6 files (3 .m and 3 .xls) are needed for parameter estimation using PottersWheel. For each of the three cases, the TNF_model_<<XXX>>.m is to be mapped with the corresponding input data file Data-file-for-fitting-<<XXX>>.xls. Note that all three files have to be loaded together before an attempt for the parameter estimation.

a. TNF_model_TNF.m contains the model equations in PottersWheel framework for TNFα only case in Matlab format.

b. TNF_model_ TPL.m contains the model equations in PottersWheel framework for TPL only case in Matlab format.

c. TNF_model_TNF_TPL.m contains the model equations in PottersWheel framework for TNFα+TPL case in Matlab format.

d. Data-file-for-fitting-TNF.xls consists of the experimental raw data used for parameter estimation for the TNFα only case

e. Data-file-for-fitting-TPL.xls consists of the experimental raw data used for parameter estimation for the TPL only case

f. Data-file-for-fitting-TNF-TPL.xls consists of the experimental raw data used for parameter estimation for the TNFα+TPL only case

3) Model related information: Dynamics and Flux estimation

a. TNF_Signaling_Pathway.ode file used in XPPAUT generates (i) the dynamics for every entity in the network and (ii) the fluxes corresponding to various biochemical reactions. These are the basis for all figures related to dynamic trajectories, flux and branch analysis, as specified in the .ode file.