S1 Text: Ensemble time course trajectories obtained for training data

Data-driven reverse engineering of signaling pathways using ensembles of dynamic models

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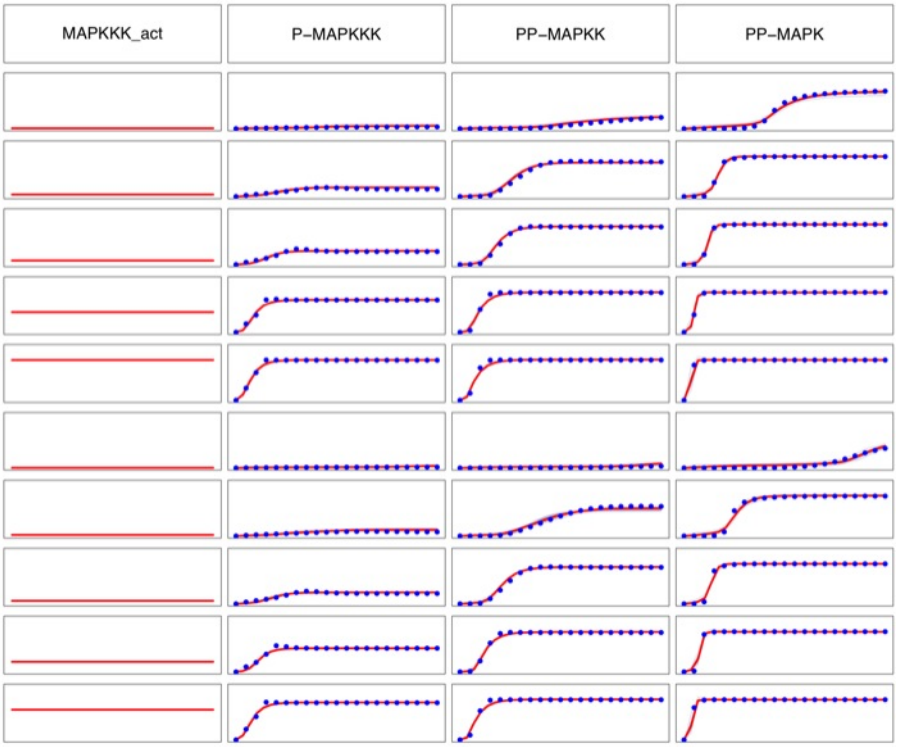

Figure 1: *Ensemble time course trajectories for the case study 1a (MAPKp) (training data)* The median in red is surrounded by the predicted non-symmetric 20% ,60% and 95%. Blue dots represent the pseudo-experimental data. Each row is an experiment and each column an observed signal.

1.2 Case study 1b (MAPKf)

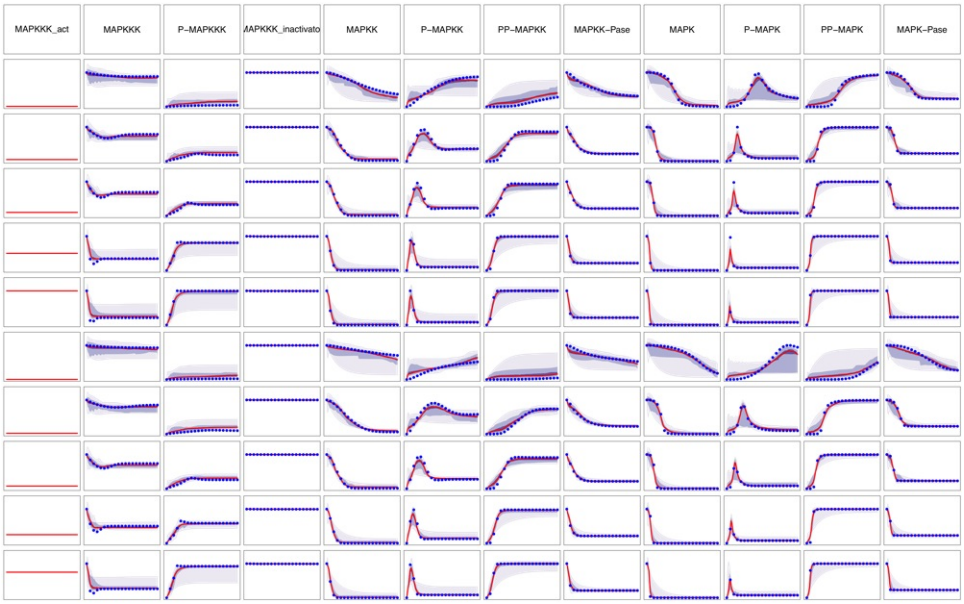

Figure 2: *Ensemble time course trajectories for the case study 1b (MAPKf) (training data)* The median in red is surrounded by the predicted non-symmetric 20% ,60% and 95%. Blue dots represent the pseudo-experimental data. Each row is an experiment and each column an observed signal.

1.3 Case study 2 (SSP)

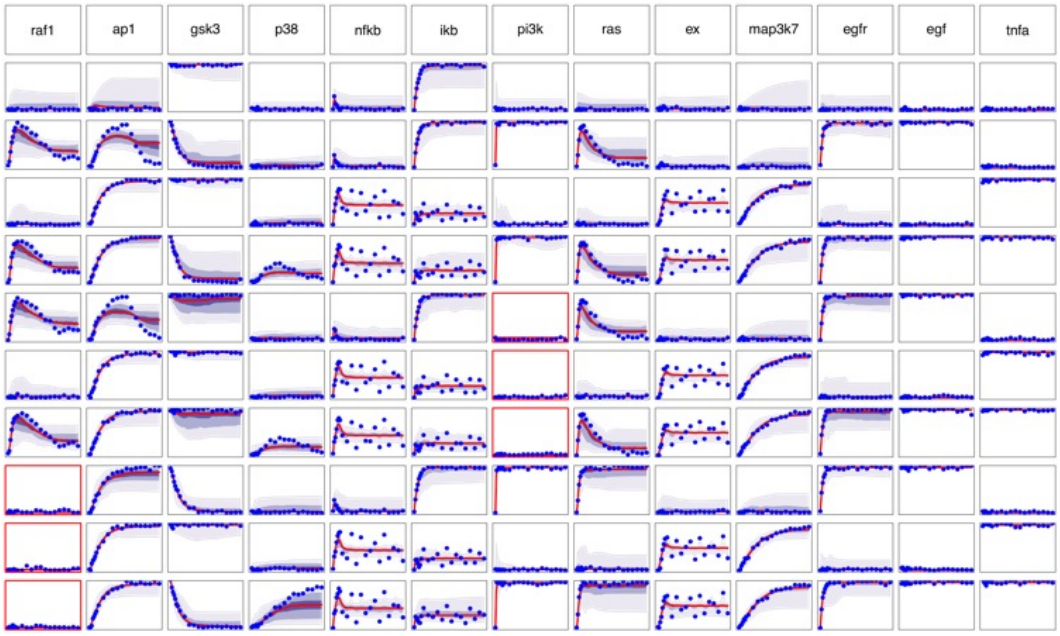

Figure 3: *Ensemble time course trajectories for the case study 2 (SSP) (training data)* The median in red is surrounded by the predicted non-symmetric 20% ,60% and 95%. Blue dots represent the pseudo-experimental data. Each row is an experiment and each column an observed signal.

1.4 Case study 3 (DREAMiS)

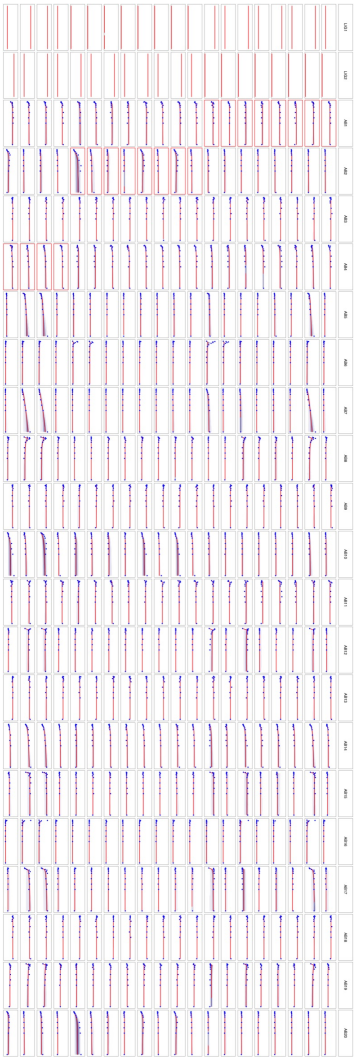

Figure 4: *Ensemble time course trajectories for the case study 2 (DREAMiS) (training data)* The median in red is surrounded by the predicted non-symmetric 20% ,60% and 95%. Blue dots represent the pseudo-experimental data. Each row is an experiment and each column an observed signal. Inhibited signals are surrounded by a red frame.

1.5 Case study 4a (DREAMBT20)

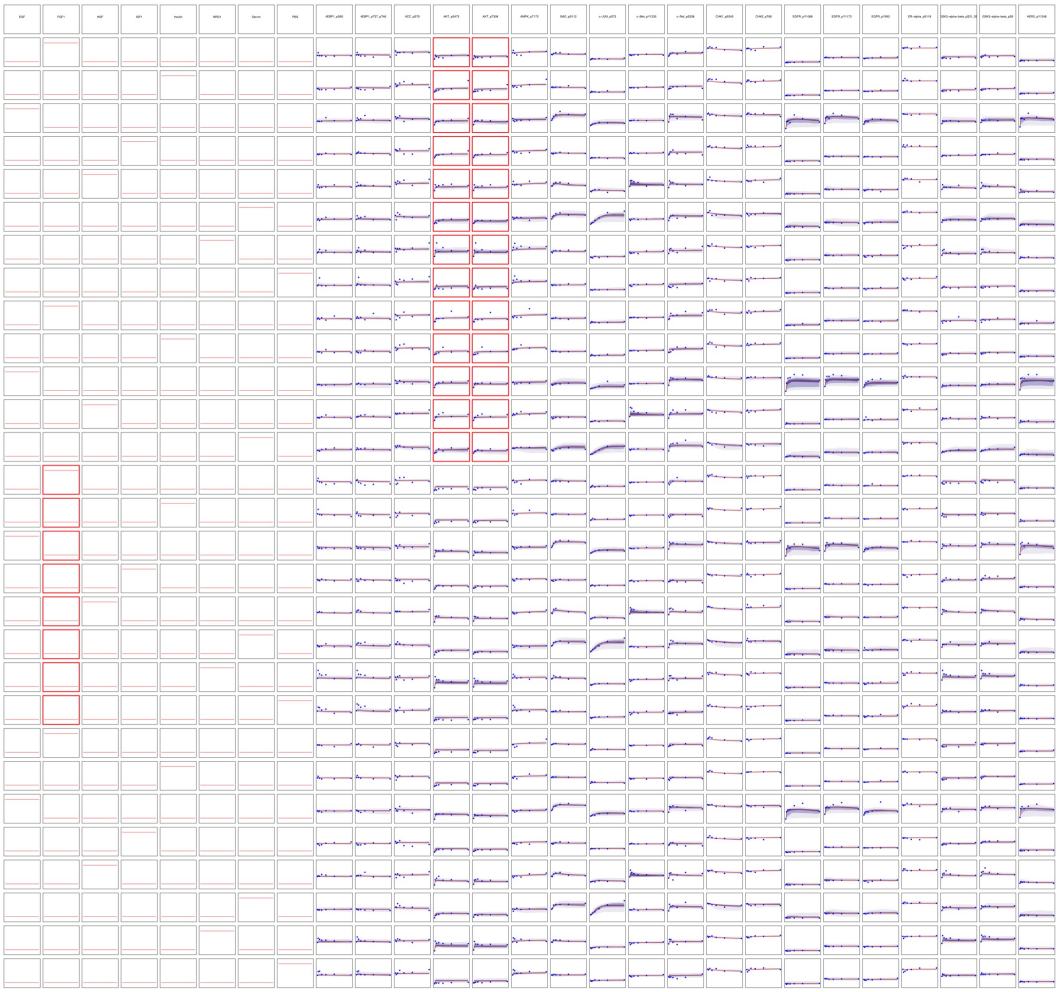

Figure 5: *Ensemble time course trajectories for the case study 4a (DREAMBT20) (training data, part 1)* The median in red is surrounded by the predicted non-symmetric 20% ,60% and 95%. Blue dots represent the experimental data. Each row is an experiment and each column an observed signal or stimuli. Inhibited signals are surrounded by a red frame and data for these experiments/signals combinations.

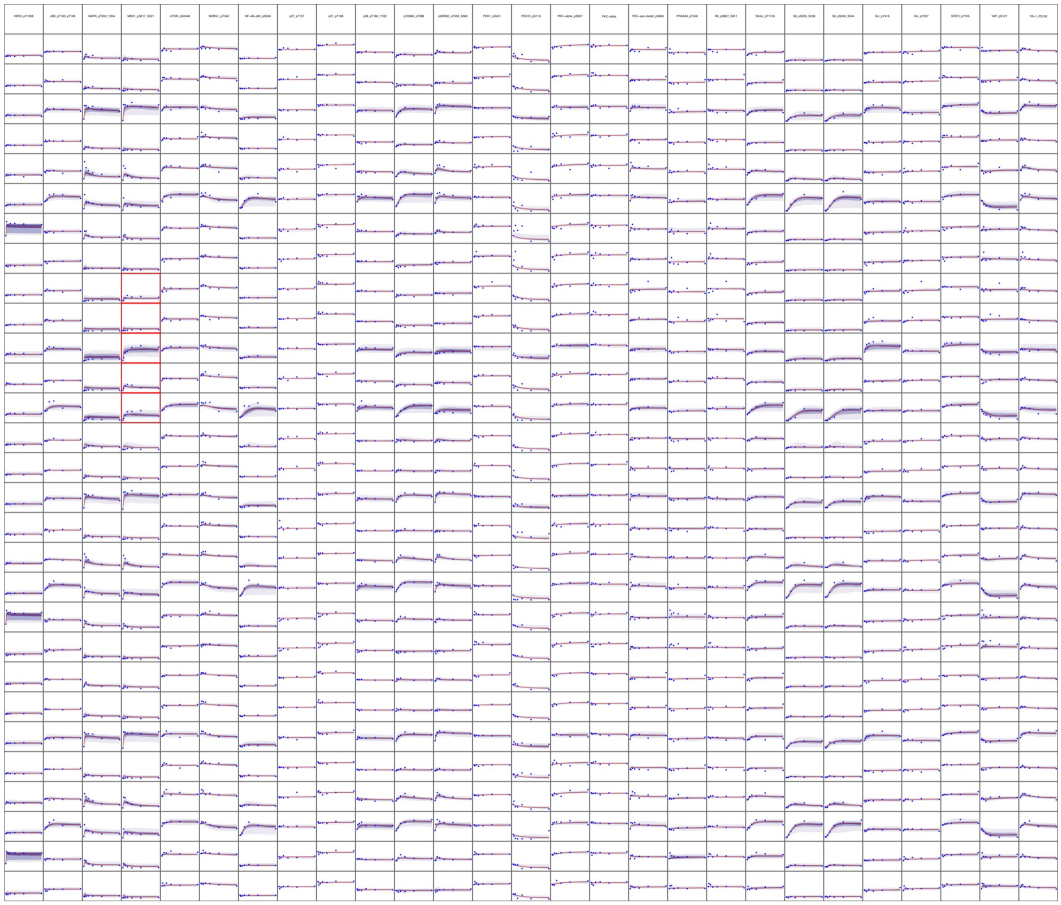

Figure 6: *Ensemble time course trajectories for the case study 4a (DREAMBT20) (training data, part 2)* The median in red is surrounded by the predicted non-symmetric 20% ,60% and 95%. Blue dots represent the experimental data. Each row is an experiment and each column an observed signal or stimuli. Inhibited signals are surrounded by a red frame and data for these experiments/signals combinations.

1.6 Case study 4b (DREAMBT549)

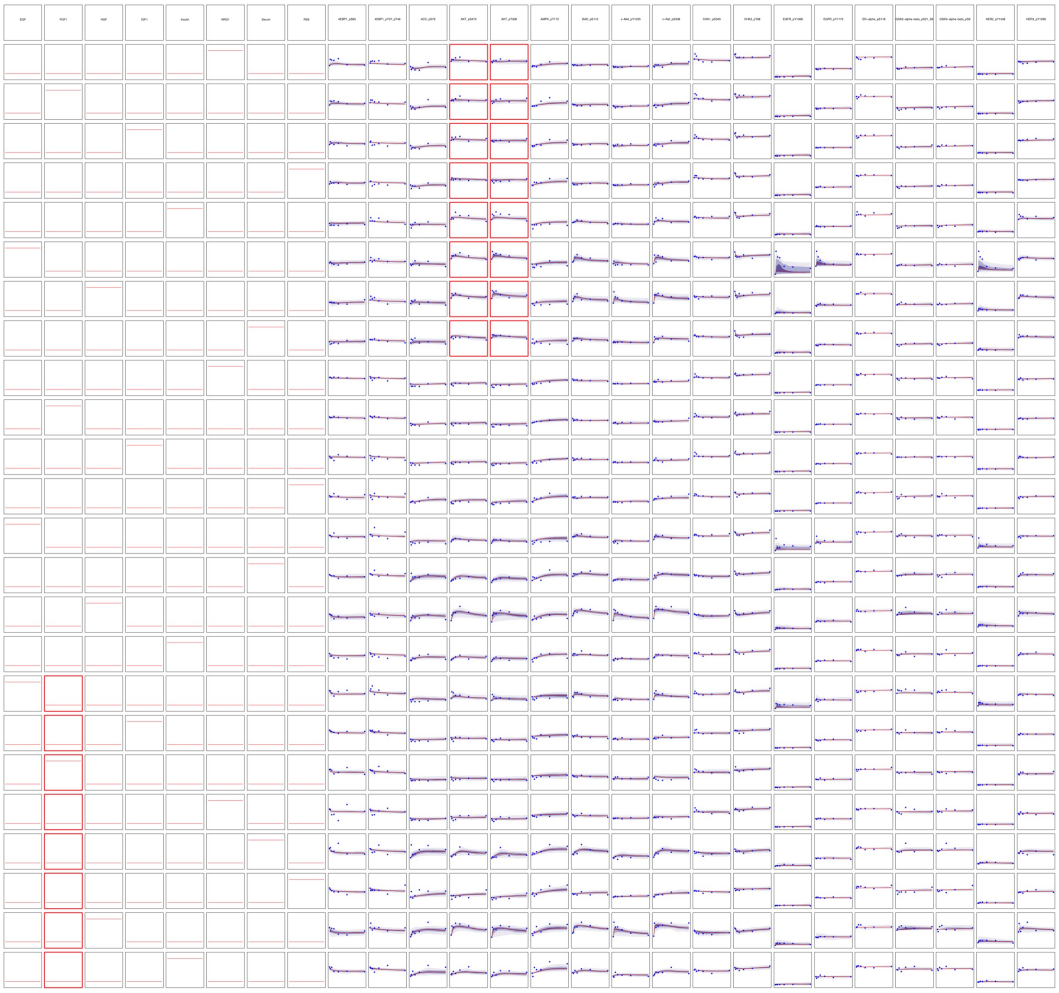

Figure 7: *Ensemble time course trajectories for the case study 4b (DREAMBT549) (training data, part 1)* The median in red is surrounded by the predicted non-symmetric 20% ,60% and 95%. Blue dots represent the experimental data. Each row is an experiment and each column an observed signal or stimuli. Inhibited signals are surrounded by a red frame and data for these experiments/signals combinations.

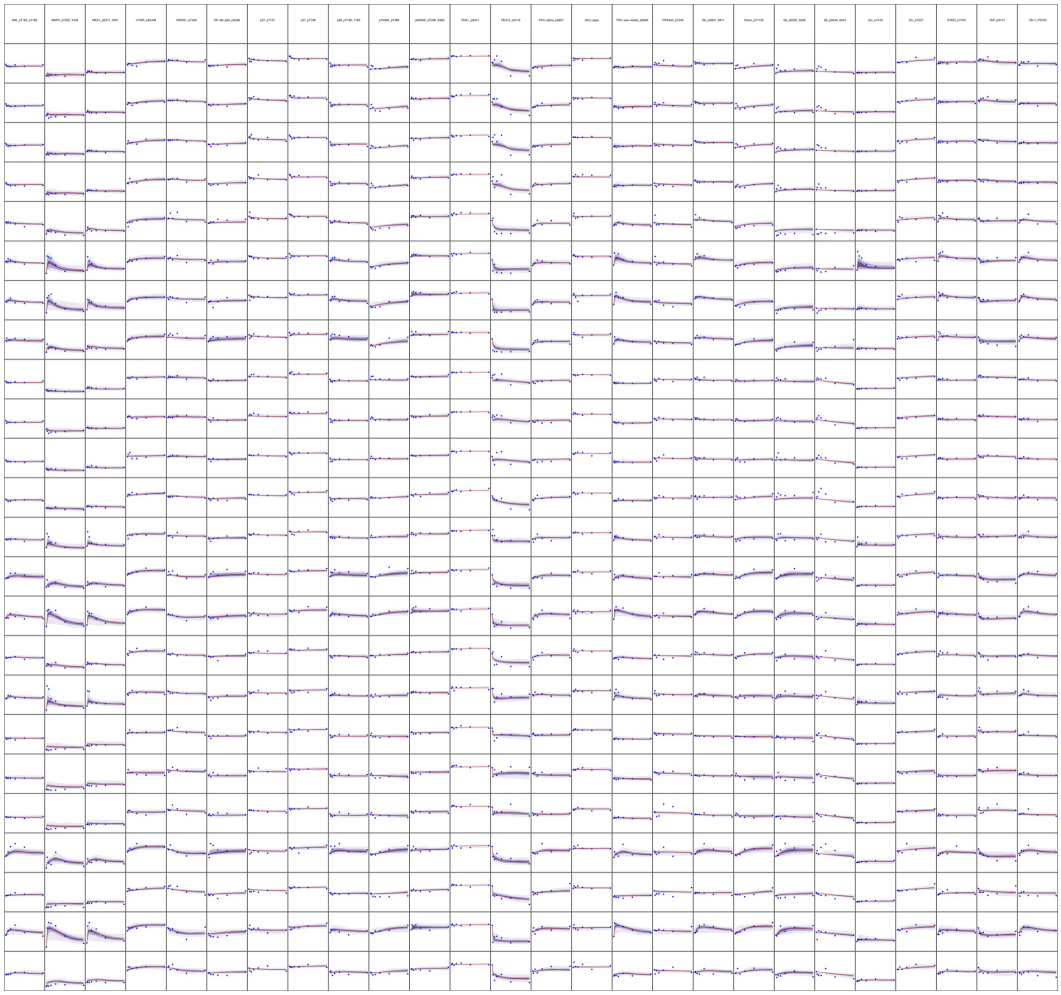

Figure 8: *Ensemble time course trajectories for the case study 4b (DREAMBT549) (training data, part 2)* The median in red is surrounded by the predicted non-symmetric 20% ,60% and 95%. Blue dots represent the experimental data. Each row is an experiment and each column an observed signal or stimuli. Inhibited signals are surrounded by a red frame and data for these experiments/signals combinations.

1.7 Case study 4c (DREAMMCF7)

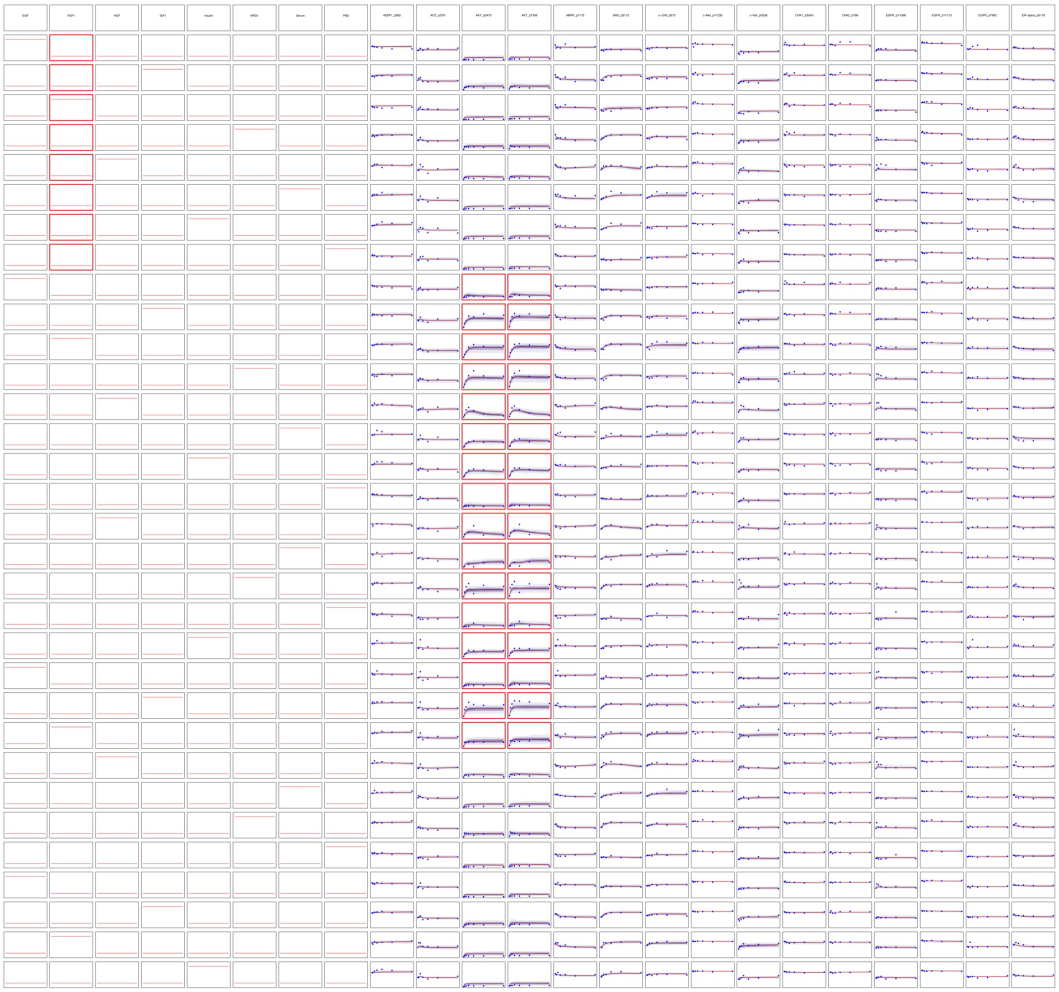

Figure 9: *Ensemble time course trajectories for the case study 4c (DREAMMCF7) (training data, part 1)* The median in red is surrounded by the predicted non-symmetric 20% ,60% and 95%. Blue dots represent the experimental data. Each row is an experiment and each column an observed signal or stimuli. Inhibited signals are surrounded by a red frame and data for these experiments/signals combinations.

1.8 Case study 4d (DREAMUACC812)

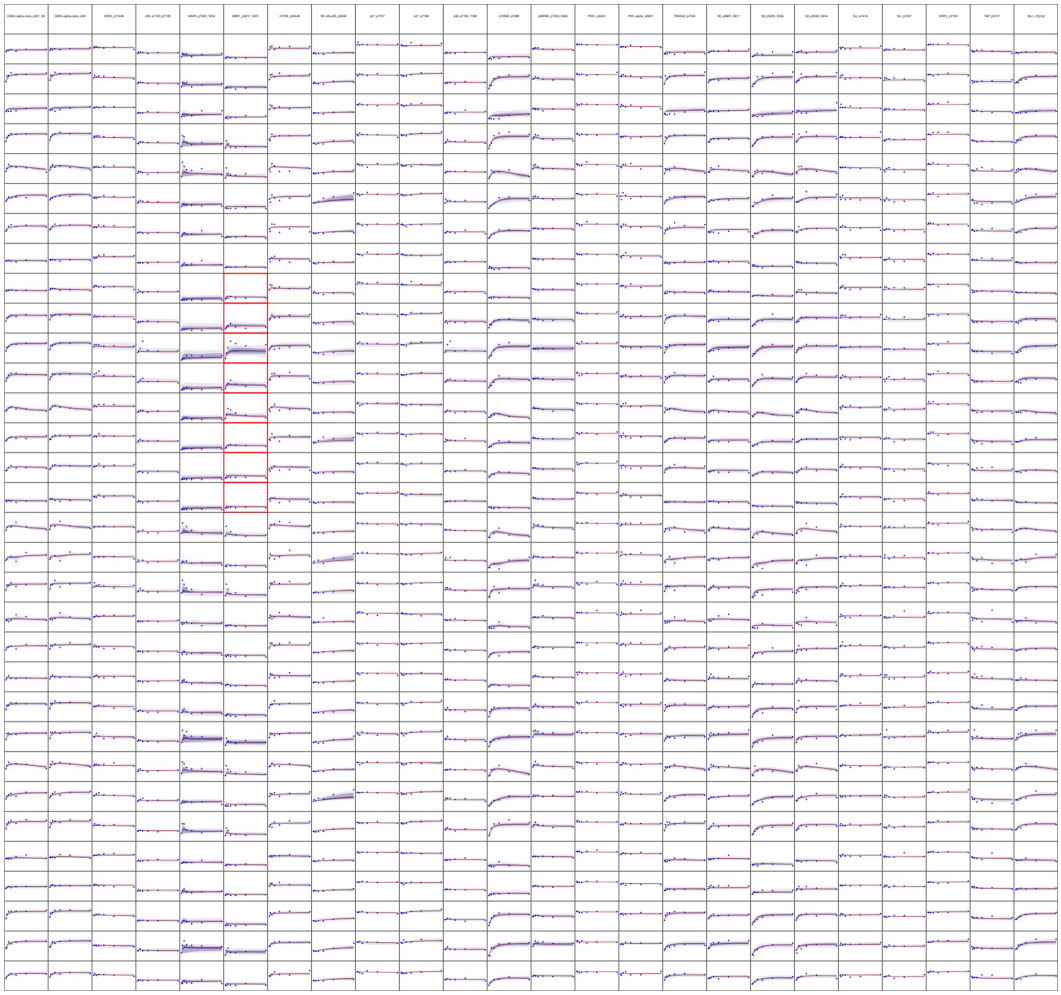

Figure 10: *Ensemble time course trajectories for the case study 4c (DREAMMCF7) (training data, part 2)* The median in red is surrounded by the predicted non-symmetric 20% ,60% and 95%. Blue dots represent the experimental data. Each row is an experiment and each column an observed signal or stimuli. Inhibited signals are surrounded by a red frame and data for these experiments/signals combinations.

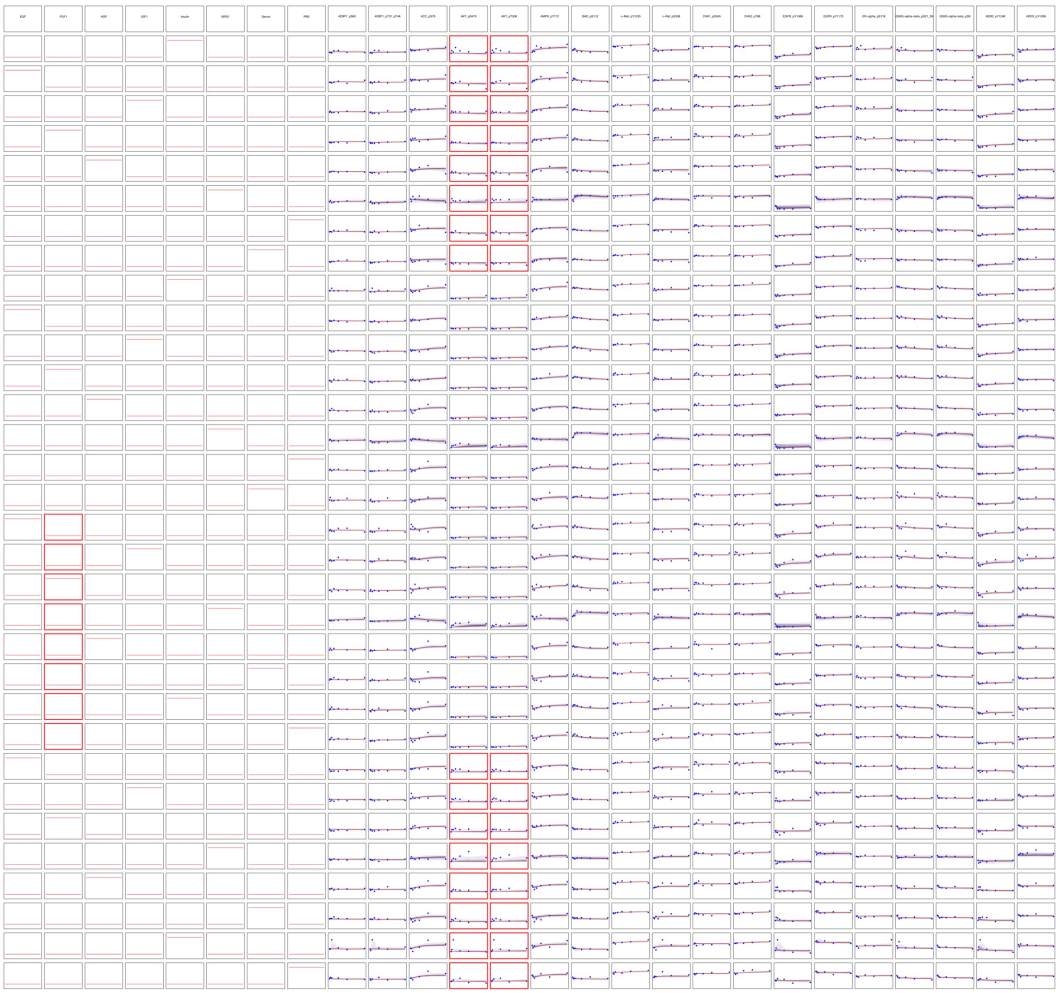

Figure 11: *Ensemble time course trajectories for the case study 4d (DREAMUACC812) (training data, part 1)* The median in red is surrounded by the predicted non-symmetric 20% ,60% and 95%. Blue dots represent the experimental data. Each row is an experiment and each column an observed signal or stimuli. Inhibited signals are surrounded by a red frame and data for these experiments/signals combinations.

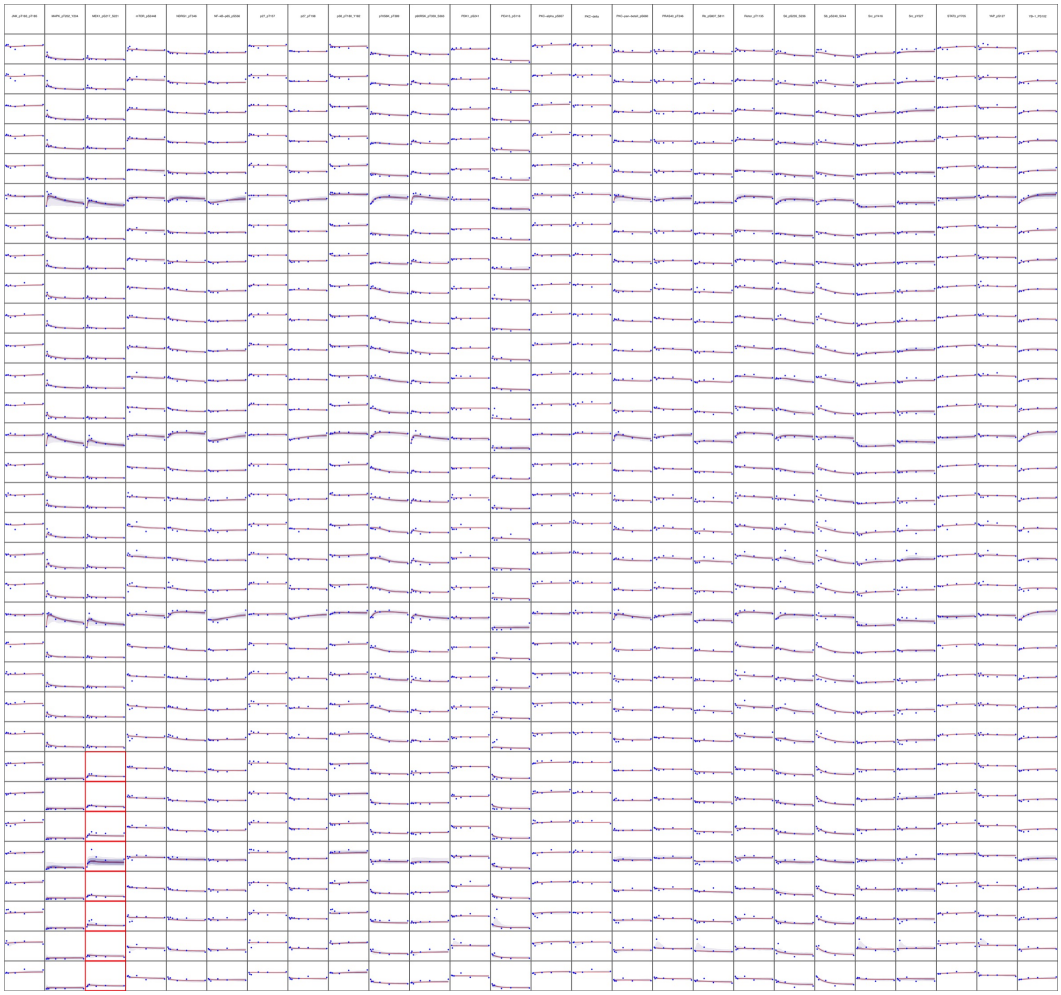

Figure 12: *Ensemble time course trajectories for the case study 4d (DREAMUACC812) (training data, part 2)* The median in red is surrounded by the predicted non-symmetric 20% ,60% and 95%. Blue dots represent the experimental data. Each row is an experiment and each column an observed signal or stimuli. Inhibited signals are surrounded by a red frame and data for these experiments/signals combinations.