**Table S5. Algebraic constraints used for parameter estimation.** As described in the Methods section, main text, the following qualitative constraints were incorporated into the overall objective function *M* for parameter estimation.

|  |  |  |
| --- | --- | --- |
| **No** | **Biological assumption** | **Algebraic equation** |
| 1 | Peak value of pEGFR by EGF stimulation > 1% of total EGFR. |  | *EGFRr1*(***p***)= max(*pEGFR*(*t*,***p***))/*EGFRtotal* |
| 2 | Peak value of pPYK2 by EGF >1% of total PYK2. |  | *PYK2r1*(**p**)=max(*pPYK2*(*t*,***p***))/max(*PYK2*(*t*,***p***)) |
| 3 | Peak value of pSTAT3 by EGF stimulation is >1% of total STAT3  |  | *STAT3r1*(***p***)= max(*pSTAT3*(*t*,***p***))/*STAT3total* |