**Table S1. Standard stochastic protein turnover models**

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|  | Constraints | Rate values |
| Protein | Switching speed kon+koff (hrs-1) [36]*fixed* | Mean mRNA level [sup. ref. 6, see Text S1]*fixed* | Mean protein level [13]*fixed* | Protein level Coefficient of Variation [13]*fixed* | Off to on promoter ratekon (hrs-1)*derived* | On to off promoter ratekoff (hrs-1)*derived* | ksm(min-1)*derived* | mRNA deg. ratem (hrs-1)*fixed* | Protein synth. rateksp (min-1)*derived* | Protein deg. rate p (hrs-1)*fixed* |
| Receptor | 10.44 | 17 | 1000 | 0.25 | 0.388 | 10.05 | 0.587 | 0.077 | 0.025 | 0.0257 |
| Caspase-8 | 10000 | 0.25 | 0.388 | 10.05 | 0.587 | 0.25 |
| Bar | 1000 | 0.25 | 0.388 | 10.05 | 0.587 | 0.025 |
| Caspase-3 | 10000 | 0.282 | 0.289 | 10.15 | 0.789 | 0.25 |
| Caspase-6 | 10000 | 0.25 | 0.388 | 10.05 | 0.587 | 0.25 |
| XIAP | 100000 | 0.288 | 0.275 | 10.17 | 0.829 | 2.52 |
| PARP | 1000000 | 0.25 | 0.388 | 10.05 | 0.587 | 25.2 |
| Bid | 60000 | 0.288 | 0.275 | 10.17 | 0.829 | 1.51 |
| Bax | 80000 | 0.271 | 0.318 | 10.12 | 0.717 | 2.01 |
| Bcl-2 | 30000 | 0.294 | 0.268 | 10.18 | 0.871 | 0.76 |
| Pore | 500000 | 0.25 | 0.388 | 10.05 | 0.587 | 12.6 |
| CytoC\_m | 500000 | 0.25 | 0.388 | 10.05 | 0.587 | 12.6 |
| Smac | 100000 | 0.25 | 0.388 | 10.05 | 0.587 | 2.51 |
| Apaf | 100000 | 0.25 | 0.388 | 10.05 | 0.587 | 2.51 |
| Caspase-9 | 100000 | 0.25 | 0.388 | 10.05 | 0.587 | 2.51 |