

**Table S2: Perturbative conditions and their associated effects.**

Data set Employed	Reagent	Biological Effect
$d_1-d_7$	Anti-CD3/CD28	General T-cell activation
$d_2$	ICAM-2	General Signaling Activation
$d_3$	AKT Inhibitor	AKT Inhibition
$d_4$	G06976	PKC Inhibition
$d_5$	Psitectorigenin	PIP2 Inhibition
$d_6$	U0126	Mek1, Mek2 Inhibition
$d_7$	LY294002	Akt Inhibition
$d_8$	PMA	PKC activation
$d_9$	$\beta$ 2cAMP	PKA activation

Nine total data sets were used in the RS-HDMR analyses, each describing the network under a different perturbative condition, reported in more detail by Sachs et al., 2005. General stimulatory agents (Anti-CD3/CD28) were used to activate T cells and induce proliferation in all but two of the data sets.