

**S5 Table. Kinetic and bond graph parameters of the species in the Ras activation intermediate pathway model.**

Species	Brightman & Fell	Bond graph version	
	$q_{(\text{dimensionless})}$	$K_{(\text{nM}^4)}$	$q_{(\text{nM})}$
<i>RShGS</i>	0	0.13	0
<i>RasGDP</i>	19800	0.13	1.98
<i>RasRShGS</i>	0	10.47	0
<i>RasGTP</i>	200	0.0064	2e-2
<i>GAP</i>	15000	0.553	1.5
<i>RasGAP</i>	0	42.72	0
<i>Ras</i>	0	16.07	0