Supplementary Table S3: Definition of reaction species, reactions describing TNF/TNFR processes and their rates (v_i).

Reaction species			
mTNF	Membrane-bound TNF	*sTNF/TNFR2*	sTNF/TNFR2 complex on the membrane
sTNF	Extracellular soluble TNF	$sTNF/TNFR1_i$	Internalized sTNF/TNFR1 complex
TNFR1	Cell surface TNF receptor 1	$sTNF/TNFR2_i$	Internalized sTNF/TNFR2 complex
TNFR2	Cell surface TNF receptor 2	$sTNF/TNFR2_{shed}$	Shed sTNF/TNFR2 complex
sTNF/TNFR1	sTNF/TNFR1 complex on the membrane		

Model reactions			
1	*mTNF synthesis* $v_1 = k_{Synth}$	9	*TNFR2 synthesis* $v_9 = V_{r2}$
2	$mTNF \rightarrow sTNF$ $v_2 = k_{TACE}[mTNF]$	10	$TNFR1 \rightarrow TNFR1_i$ $v_{10} = k_{t1}[TNFR1]$
3	$sTNF + TNFR1 \leftrightarrow sTNF/TNFR1$ $v_3 = k_{on1}[sTNF][TNFR1] - k_{off1}[sTNF/TNFR1]$	11	$TNFR2 \rightarrow TNFR2_i$ $v_{11} = k_{t2}[TNFR2]$
4	$sTNF + TNFR2 \leftrightarrow sTNF/TNFR2$ $v_4 = k_{on2}[sTNF][TNFR2] - k_{off2}[sTNF/TNFR2]$	12	$sTNF/TNFR1_i \rightarrow degradation$ $v_{12} = k_{deg1}[sTNF/TNFR1_i]$
5	$sTNF/TNFR1 \rightarrow sTNF/TNFR1_i$ $v_5 = k_{int1}[sTNF/TNFR1]$	13	$sTNF/TNFR2_i \rightarrow degradation$ $v_{13} = k_{deg2}[sTNF/TNFR2_i]$
6	$sTNF/TNFR2 \rightarrow sTNF/TNFR2_i$ $v_6 = k_{int2}[sTNF/TNFR2]$	14	$sTNF/TNFR1_i \rightarrow TNFR1$ $v_{14} = k_{rec1}[sTNF/TNFR1_i]$
7	$sTNF/TNFR2 \rightarrow sTNF/TNFR2_{shed}$ $v_7 = k_{shed}[sTNF/TNFR2]$	15	$sTNF/TNFR2_i \rightarrow TNFR2$ $v_{15} = k_{rec2}[sTNF/TNFR2_i]$
8	*TNFR1 synthesis* $v_8 = V_{r1}$	16	$sTNF/TNFR2_{shed} \rightarrow sTNF + TNFR2_{shed}$ $v_{16} = k_{off2}[sTNF/TNFR2_{shed}]$