

**Supplementary Table S5:** Linking parameters used to calculate the probability of TNF-induced cell responses, definitions and values estimated in this study

<b>Parameter</b>	<b>Parameter description</b>	<b>Value*</b>
$k_{NF-\kappa B}$ ((#/cell) <sup>-1</sup> s <sup>-1</sup> )	Rate constant for TNF-induced NF- $\kappa$ B activation in macrophages	10 <sup>-8</sup> -10 <sup>-7</sup> (3.97×10 <sup>-8</sup> )
$k_{apopt}$ ((#/cell) <sup>-1</sup> s <sup>-1</sup> )	Rate constant for TNF-induced apoptosis in all cell types	5×10 <sup>-10</sup> -5×10 <sup>-9</sup> (1.33×10 <sup>-9</sup> )
$\tau_{NF-\kappa B}$ (#/cell)	Cell surface sTNF/TNFR1 threshold for TNF-induced NF- $\kappa$ B activation	5-50 (26)
$\tau_{apopt}$ (#/cell)	Internalized sTNF/TNFR1 threshold for TNF-induced apoptosis	50-500 (300)

\* Ranges of parameter values used for sensitivity analysis are indicated. Values in parentheses are used to generate baseline model results.