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# A multi-level model of synergistic T cell activation

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Cancer immunotherapy, which involves boosting a patient's own immune system to fight a tumor, is considered to be at the forefront of cancer treatment research. Nevertheless, predicting the effect of multiple immunotherapeutic modulations is not currently possible, hence optimization of therapy protocols is still in its infancy. We present a mathematical model of the intracellular network that is involved in CD8 T cell stimulation with two pharmaceutical agonists that have been shown to have a synergistic effect on T cell function *in vitro* and *in vivo*. The model recapitulates the observed synergy, and the nodes found critical for this response via perturbation analysis are supported by experimental results.