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A Mathematical model for a dendritic cell-based vaccine for Mycobacterium Tuberculosis infection

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Abstract

Dendritic cells play an important role in linking the innate and adaptive immune mechanisms. The effect of an Mtb vaccine that specifically targets Dendritic cells is studied. A model with T and CTL mechanisms is first studied, then a model with T, CTL and Dendritic cells and finally a model with a dendritic cell-based vaccine.
From the model analysis, a cell-based vaccine can help effectively control Mtb infection.

Biography

Nothabo Dube is a graduate student in the department of Mathematics and Statistics at Texas Tech University studying towards a PhD in Mathematics.