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A phenomenological approach to the dynamics of clonal expansion and immune competition of T cells

This presentation deals with a model of the dynamics of clonal expansion and immune competition of T cells [1] based on the approach of continuum mechanics. Field equations are mathematically constructed in the macroscopic framework of the thermodynamic theory of reacting fluid mixtures [2, 3], adapted to the case in which proliferative events occur [4, 5]. The introduced mathematical model is inspired by the experimental observation that during the treatment of type I hypersensitivity with the Specific ImmunoTherapy, the relative fraction of allergen specific Th1 cells increases [6] and its principal scope is to individuate key parameters and to evaluate their effect upon the domination of Th1 cell population over the Th2 one and viceversa.

REFERENCES

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