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Mathematical modeling of the chronic phase of Systemic Lupus Erythematosus

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In this talk we will present a mathematical model for Systemic Lupus Erythematosus. The model consists of twelve ODE and represents the immune response during the chronic phase of SLE. It describes the interactions between immune cells, complement, complexes, antigens and cytokines during the adaptive immune response. We will show and analyze numerical results with several different sets of values for the parameters and initial conditions based on data from the literature, without going into detail about the analytical properties of the system. There is already a model concerning the initial phase of SLE in our article [2].

References

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[2] V. Suvandjieva, P. Rashkov, I. Tsacheva, M. Santos and G. Kararigas, Modelling the Impact of NETosis During the Initial Stage of Systemic Lupus Erythematosus, *Bulletin of Mathematical Biology*, 86(6):66, 2024.