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# Mathematical Modeling of Chemotherapy Effects on Brain Tumour Growth

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Brain tumor is an abnormal growth or mass of cells in or around the brain. It is also called a central nervous system tumor. Brain tumors can be malignant (cancerous) or benign (not cancerous). In this work we proposed a system of nonlinear differential equations that model brain tumor under treatment by chemotherapy, which considers interactions among the glial cells X(t), the cancer cells Y(t), the neurons Z(t), and the chemotherapeutic agent C(t). The chemotherapeutic agent serves as a predator acting on all the cells. We studied the stability analysis of the steady states for both cases of no treatment and continuous treatment using the Jacobian Matrix. We concluded the study with numerical simulation of the model and discussed the result obtained.

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