How Do Different Concentrations of 2 Deoxy-D-glucose Affect the Proliferation of VM-M3 Brain Cancer Cells in vitro?

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The purpose of this experiment is to identify the effects of different 2 Deoxy-D-glucose (2DG) concentrations on the proliferation of cancer cells. It was hypothesized that if a 2DG concentration of 1 mM, 5 mM, 10 mM, and 20 mM is applied to the VM-M3 brain cancer cells then the concentration of 20 mM would most effectively decrease the proliferation of cancer cells in that it would have the highest concentration of glucose blocking material. The initial step in experimentation was to calculate cancer cell concentrations to find the volume of solution needed to place 50,000 cells in each of the ten tested wells. Each well plate was treated with the corresponding 2DG concentrations of 1mM, 5mM, 10mM, and 20mM as well as a glutamine only control. All cells incubated for 24 hours, before being counted and analyzed the cells were centrifuged and resuspended into 100 uL and 200 uL. The researcher found that in well one, the 2DG concentration of 10mM and 20mM equally had the lowest proliferation rate of cancer cells. In well two, the 2DG concentration of 10mM had the lowest proliferation rate, whereas the 2DG concentration of 20mM had the second lowest. Through this research, the experimental data indicates that the 2DG concentration of 10 mM had the lowest proliferation rate of cancer cells.

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