

Abstract Submitted  
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**Control of proliferation rate of N27 dopaminergic neurons using Transcranial Magnetic Stimulation orientation** YIWEN MENG, RAVI HADIMANI, VELLAREDDY ANANTHARAM, ANUMANTHA KANTHASAMY, DAVID JILES, None — Transcranial magnetic stimulation (TMS) has been used to investigate possible treatments for a variety of neurological disorders. However, the effect that magnetic fields have on neurons has not been well documented in the literature. We have investigated the effect of different orientation of magnetic field generated by TMS coils with a monophasic stimulator on the proliferation rate of N27 neuronal cells cultured in flasks and multi-well plates. The proliferation rate of neurons would increase by exposed horizontally adherent N27 cells to a magnetic field pointing upward through the neuronal proliferation layer compared with the control group. On the other hand, proliferation rate would decrease in cells exposed to a magnetic field pointing downward through the neuronal growth layer compared with the control group. We confirmed results obtained from the Trypan-blue and automatic cell counting methods with those from the CyQuant and MTS cell viability assays. Our findings could have important implications for the preclinical development of TMS treatments of neurological disorders and represents a new method to control the proliferation rate of neuronal cells.

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None

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