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## The effect of the first- and second-generation of antipsychotic drugs on SH-SY5Y brain cells and their toxicity

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Antipsychotic drugs are primarily used to manage several psychiatric disorders, including schizophrenia, bipolar mania and related mental illnesses. The present study examined the effect of the first and second generation of antipsychotic drugs on neuronal and non-neuronal cells. The toxicity of both-generation of antipsychotics was tested in both the SH-SY5Y brain cell line and the COS7 kidney cell line. According to the LC50 values for chlorpromazine (1st generation), Trifluoperazine (1st generation) and Olanzapine (2nd generation), the neurotoxicity of the two classes in SH-SY5Y exceeded their common cytotoxicity in COS7 cells, indicating that neuronal cells are at greater risk of cell death with low concentrations of antipsychotics at micro-molar comparing to non-neuronal cells. Detailed studies looking at the mechanisms of cell death induced by these antipsychotic drugs indicate that both apoptosis and necrosis play a role, while autophagy does not.

### Biography

Israa J Hakeem is a PhD student at the University of Birmingham. She has completed her Master's degree in Forensic Science from Anglia Ruskin University and received Bachelor's degree in Biochemistry.

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