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Comparing the Neurotoxicity of the Cancer Drugs Cisplatin and Oxaliplatin

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Poster Presentation P7

**COMPARING THE NEUROTOXICITY OF THE CANCER
DRUGS CISPLATIN AND OXALIPLATIN**

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Cisplatin is a platinum-based drug that has been used to successfully treat cancer since the 1970s, especially testicular and ovarian cancer. Cisplatin acts by binding to DNA and interfering with DNA replication, which most significantly affects rapidly dividing cells like cancer. However, the dosage that can be given to patients is limited by cisplatin's damage to the dorsal root ganglia, which are responsible for somatic sensory. A variety of similar platinum drugs have therefore been tested for less damaging neurotoxicity profiles. One of these compounds, oxaliplatin, was recently approved for treatment of colorectal cancer. Relatively little is known about its exact mechanism of action and neurotoxicity though. The goal of this project was to compare the neurotoxicity of cisplatin versus oxaliplatin and to further characterize the mechanism of oxaliplatin action. Results are not definite yet, but oxaliplatin causes apoptosis just like cisplatin, seems to cause less neuron cell death at equimolar concentrations, and both binds to and releases from neuron cell DNA more slowly than cisplatin.