Researchers at the University of South Florida have developed Platinum (IV) complexes that exhibit antitumor cell.

These novel Platinum complexes induce apoptosis and/or inhibit tumor cell growth. The proposed mechanism of the Platinum (IV) compounds is a likely result of Platinum (IV) compounds being reduced to Platinum (II) in the cell. A great advantage of these novel Platinum (IV) complexes is that they likely do not require this type of reduction in the cells exert a cytotoxic effect. Therefore, these platinum complexes are distinct from other platinum compounds in that they maintain the correct oxidative conformation as Platinum (IV) compounds. Thus these new compounds may be more effective than existing Platinum (II) compounds.

In addition, these platinum complexes can also form nitric oxide in the cells thereby killing the cells through the formation of oxide radicals.

Data obtained by USF researchers indicate that these platinum complexes exhibit anti-tumor activity against melanoma and colon tumors in vivo. Additionally, treatment of tumor with these novel platinum complexes results in the abrogation of constitutively active STATS, indicating that these complexes may affect the STAT pathways.

ADVERTAGES:

- Platinum complexes can be used to treat oncological, viral, bacterial, and parasitic disease conditions
- More chemically inert to thiols than cis-platin but more biologically active and thus less likely to be nephrotoxic

MTT Assay (A549 Cells) Cis-Pt v Platinum IV Compounds