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The General Toxicity of Novel Platinum Complexes in Rats

Se Young Chung, Young Soo Rho, Jee Chang Jung[1], Sung Goo Chang[1], Byung Gi Choi[2],

College of Pharmacy, [1]College of Medicine, Kyung Hee University and [2]College of Pharmacy, Dongduck Women's University.

This study was performed to evaluate the general toxicity of novel Pt(II) complexes, (KHPC-002; [Pt(trans-1-dach) (DPPE)].$2NO_3$, KHPC-005; [Pt(cis-dach)(DPPE)].$2NO_3$ and KHPC-006; [Pt(cis-dach) (DPPP)]. $2NO_3$).

In the acute toxicity study in rats, three dosing groups of Sprague-Dawley male rats in each compounds were given a single intraperitoneal injection of KHPC-002, KHPC-005 and KHPC-006. In order to compare the toxic effects of these novel Pt(II) complexes with those of cisplatin, one group Sprague-Dawley male rats were given 7mg/kg i.p injection of cisplatin. Body weights showed dose-related decrease in all treatment groups when compared with the control group.

From the results of hematological examination, KHPC-002 (60mg/kg) and KHPC-006 (120mg/kg) reduced white blood cells and platelet counts in contrast to the increase of those in KHPC-005 (120mg/kg).

Serum biochemical values of KHPC-002 and KHPC-006 showed a normal range of BUN and slightly increase in the creatinine values. However, KHPC-005 (120mg/Kg) showed 1.5 fold increase the BUN and creatinine values, indicating nephrotoxicity. The decreae of ALP values were observed in high dose administration group of KHPC-005 and KHPC-006. No changes were detected in serum hepatotoxicological values (such as ALT, AST, glucose and total bilirubin) of KHPC-002, KHPC-005 and KHPC-006. Considering the results of this study, the toxic profiles of these new Pt(II) complexes were considerably lower than those of cisplatin.