COORDINATION COMPOUND BASED ON PLATINUM WITH ACTION ANTITUMOR

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The platinum based antineoplastic drugs were first described in 1960. In the studies was verified the anti-mitotic action of platinum complexes, generated in minor proportions, in a culture medium and a platinum electrode. The produced complex was isolated and characterized as the *cis*-dichlorodiammineplatinum (II) or cisplatin (CDDP). In 1978, the CDDP, the first drug based on Pt (II) ion, was approved by the Food and Drug Administration (FDA) and then marketed. Since the discovery of the antitumor action of CDDP, complexes based on platinum have been studied as potential pharmacological agents (Jung & Lippard, 2007; Burger, et al 2011). Although of platinum drugs being in cancer treatment regimes, there are a number of permanent disadvantages. For example, no single agent is also effective against all types of cancer and some appear to be intrinsically resistant to treatment with either platinum agent currently approved (Brabec & Kasporkova, 2005).

In order to synthesize new pharmaceutical compositions for the treatment of cancer, in this study was developed a new platinum-based drug with antitumor action. The platinum complex produced (LSGLL01) (Fig. 1) contain in their structure, a single platinum center (core) and two ligands, containing the sulfur with Lewis base. After synthesis and characterization of this compound, this was subjected to in vitro cytotoxicity assays, acute toxicity and antitumor activity within a therapeutic range.

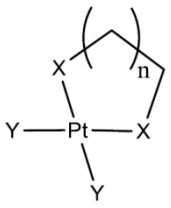

Figure 1. Proposal structure for the LSGLL01 complex.

The compound developed, coded as LSGLL01, showed higher percentage of tumor inhibition, front to the cell lines of the Sarcoma-180 tumors, when compared to CDDP. The treatment effect on the hematological parameters (treated group) was within the normal range, not showing myelosuppression, besides the non-observation of metastases.

References

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CENAPESQ-UFRPE, CNPq, FACEPE and CAPES.