

The Determinants in Identify and Analyze of Oxaliplatin Substance: HPLC Implementation

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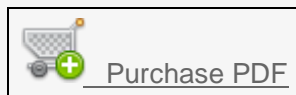
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ABSTRACT:

Oxaliplatin (OXPt) (trans-(R,R)-cyclohexane-1,2-diamine)oxalatoplatin) belongs to platinum-containing anticancer drugs. The lipophilic properties of OXPt contribute to differences from other anticancer agents in overall toxicity and changes in cellular uptake of the drug. The diamine ligand and its stereochemical properties affect the cytotoxic profile of OXPt. Platinum complexes with amino groups in the trans position show better cytotoxic and antitumor activity when compared with the activity of the cis-(R,S)- cyclohexane-1,2-diamine)oxalatoplatin isomer. The trans-(R,R)-isomer is a more potent antitumor agent compared to the trans-(S,S)-congener. There are a number of problematic points in the synthesis of pure racemic mixtures of this substance. It is possible to predict the formation of intramolecular bonds in the substance at the expense of free functional groups and the formation of by-products during synthesis, the degradation of molecules. The most optimal method of quality control of the OXPt substance can be the high-tech method of high-performance liquid chromatography (HPLC), since the State Pharmacopoeia of Ukraine does not regulate the analysis of the substance, while the European Pharmacopoeia (Eur.Ph.) regulates the analysis of specific impurities in the composition of the OXPt substance by the liquid chromatography method chromatography (LC). At the same time, the high quality of the OXPt substance is an important factor in protecting the health and life of cancer patients.

Keywords:

- [Oxaliplatin](#)
- [Antitumor agents](#)

- Substance
- HPLC
- Accompanying substances
- Impurities
- Retention time.



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