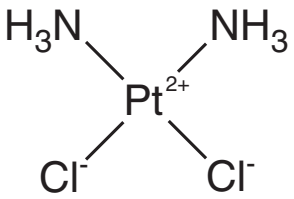
PRODUCT INFORMATION

Cisplatin

Item No. 13119

CAS Registry No.: 15663-27-1
Formal Name: (SP-4-2)-diamminedichloro-platinum
Synonyms: CDDP, *cis*-Diamminedichloroplatinum, Cisplatinum, NSC 119875
MF: $Cl_2H_6N_2Pt$
FW: 300.1
Purity: ≥95%
Supplied as: A crystalline solid
Storage: -20°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Cisplatin is supplied as a crystalline solid. A stock solution may be made by dissolving the cisplatin in the solvent of choice. Cisplatin is soluble in organic solvents such as DMSO* and dimethyl formamide (DMF), which should be purged with an inert gas. It is also soluble in water. The solubility of cisplatin in DMF is approximately 10 mg/ml and approximately 1 mg/ml (with warming) in water. We do not recommend storing the aqueous solution for more than one day.

**NOTE: Athough highly soluble in DMSO, cisplatin is reported to be rendered inactive due to ligand displacement by the nucleophilic sulfur of DMSO. Sodium chloride solution in water (154 mM NaCl with or without 10 mg/ml mannitol) or PBS (with 140 mM NaCl) is recommended for solubilization prior to culture treatment.*

Description

Cisplatin is a platinum-containing compound that acts as a DNA-crosslinking agent and interferes with replication and transcription, culminating in apoptosis.[1] It forms intra- and interstrand crosslinks with DNA with intrastrand guanine-to-guanine or guanine-to-alanine links accounting for the majority of DNA binding.[2] Cisplatin halts the cell cycle at the G_2/M phase *in vitro* and is active against murine tumors transplanted into mice and in mouse xenograft models, including a reduction in tumor growth in a model of squamous cell carcinoma of the head and neck when administered at doses ranging from 7.5 to 12.5 mg/kg.[3,4] Cisplatin also inhibits the RecA recombinase of *M. tuberculosis* (IC_{50} = 2 µM), blocking protein splicing and cell growth.[5] Formulations containing cisplatin have been used, alone and in combination therapy, in the treatment of a variety of cancers.

References

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2. Bose, R.N. Biomolecular targets for platinum antitumor drugs. *Mini. Rev. Med. Chem.* **2(2)**, 103-111 (2002).
3. Takahashi, K., Ebihara, K., Honda, Y., *et al.* Antitumor activity of *cis*-dichlorodiammineplatinum(II) and its effect on cell cycle progression. *Gan To Kagaku Ryoho.* **9(4)**, 624-631 (1982).
4. Wennerberg, J., Alm, P., Biörklund, A., *et al.* Cell cycle perturbations in heterotransplanted squamous-cell carcinoma of the head and neck after *mitomycin C* and *Cisplatin* treatment. *Int. J. Cancer.* **33(2)**, 213-222 (1984).
5. Zhang, L., Zheng, Y., Callahan, B., *et al.* Cisplatin inhibits protein splicing, suggesting inteins as therapeutic targets in mycobacteria. *J. Biol. Chem.* **286(2)**, 1277-1282 (2011).

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