**Lurbinectedin**

**Cat. No.**: HY-16293  
**CAS No.**: 497871-47-3  
**Molecular Formula**: C₄₁H₄₄N₄O₁₀S  
**Molecular Weight**: 784.87  
**Target**: Others  
**Pathway**: Others  
**Storage**:  
- Powder: -20°C 3 years, 4°C 2 years, In solvent: -80°C 6 months, -20°C 1 month

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**BIOLOGICAL ACTIVITY**

**Description**  
Lurbinectedin (PM01183) is a new DNA minor groove covalent binder with potent anti-tumour activity; inhibits RMG1 and RMG2 cell growth with IC₅₀ values of 1.25 and 1.16 nM, respectively.

**IC₅₀ & Target**  
IC₅₀: 1.25 nM (RMG1), 1.16 nM (RMG2)¹

**In Vitro**  
PM01183 is a new synthetic tetrahydroisoquinoline alkaloid that is currently in phase I clinical development for the treatment of solid tumours. PM01183–DNA adducts in living cells give rise to double-strand breaks, triggering S-phase accumulation and apoptosis. The potent cytotoxic activity of PM01183 is ascertained in a 23-cell line panel with a mean GI₅₀ value of 2.7 nM². Lurbinectedin exhibits significant antitumor activity toward chemosensitive and chemoresistant human ovarian clear cell carcinoma (CCC) cells in vitro¹.

**In Vivo**  
Mouse CCC cell xenografts reveals that lurbinectedin significantly inhibits tumor growth. Lurbinectedin plus SN-38 results in a significant synergistic effect¹. In four murine xenograft models of human cancer, PM01183 inhibits tumour growth significantly with no weight loss of treated animals². Single lurbinectedin or cisplatin-combined therapies are effective in treating cisplatin-sensitive and cisplatin-resistant preclinical ovarian tumor models. The strongest synergistic effect is observed for combined treatments, especially in cisplatin-resistant tumors. Lurbinectedin tumor growth inhibition is associated with reduced proliferation, increased rate of aberrant mitosis, and subsequent induced apoptosis³.

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**PROTOCOL**

**Cell Assay** ¹  
The MTS assay is used to analyze the effects of each drug. Cells are plated in 96-well plates and treated with PM01183 (0, 0.1, 0.3, 1, 3 nM). After 48 hours’ incubation, the number of surviving cells is assessed by determining the A490nm of the dissolved formazan product after the addition of MTS for 1 hour. Cell viability is calculated as follows: Aexp group / Acontrol×100¹.  
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

**Animal**  
Mice: Mice are transplanted with fragments of OVAX1 and OVAX1R tumors, and when tumors reaches a
homogeneous palpable size are randomly allocated into the treatment groups: i) Placebo; ii) Lurbinectedin (0.18 mg/kg); iii) Cisplatin (3.5 mg/kg); and iv) Lurbinectedin plus cisplatin (0.18 + 3.5 mg/kg). Drugs are i.v. administered once per week for 3 consecutive weeks (days 0, 7, and 14). Seven days after the final dose (day 21), animals are sacrificed, their ovaries dissected out, and weighed. Representative fragments are either frozen in nitrogen or fixed and then processed for paraffin embedding[3].

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REFERENCES

