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## Product Data Sheet

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Product Name: Desmopressin Acetate  
 Cat. No.: GC11265

**Chemical Properties**

Cas. No. 62288-83-9

Chemical Name DDAVP

SMILES CC(=O)O.C1CC(N(C1)C(=O)C2CSSCCC(=O)NC(C(=O)NC(C(=O)NC(C(=O)NC(C(=O)N2)CC(=O)N)CCC(=O)N)CC3=CC=CC=C3)CC4=C

Formula C<sub>48</sub>H<sub>68</sub>N<sub>14</sub>O<sub>14</sub>S<sub>2</sub>

M.Wt

Solubility 100 mg/ml in DMSO; 100 mg/ml in Water

Storage

General tips For obtaining a higher solubility , please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be

Shipping Condition Evaluation sample solution : ship with blue ice All other available size: ship with RT , or blue ice upon request.

Structure

**Protocol****Cell experiment [1]:**

Cell lines F3II cells

Preparation Method F3II cells were cultured in the presence of appropriate concentrations of Desmopressin Acetate for 7 days, and the cytostatic effect of Desmopressin Acetate was examined at low cell density using a colony formation assay.

Reaction Conditions 0-1000 nM, 7 days

Applications Desmopressin Acetate can inhibit the colony formation of F3II cells with an IC<sub>50</sub> value of 700 nM.

**Animal experiment [2]:**

Animal models BALB/c inbred mice lung metastasis model

Preparation Method Desmopressin Acetate was co-injected at the time of intravenous injection of tumor cells at a final dose of 1 µg (F3II cells) or 2 µg (LM3 cells) per kg of mouse body weight.

Dosage form 1 or 2 µg/kg, once, i.v.

Applications Desmopressin Acetate significantly inhibited the formation of lung metastases and reduced the number of lung nodules by about 70%.

**Caution: Product has not been fully validated for medical applications. For research use only.**

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### References:

- [1] Ripoll G V, Garona J, Pifano M, et al. Reduction of tumor angiogenesis induced by desmopressin in a breast cancer model[J]. Breast cancer research and treatment, 2013, 142: 9-18.
- [2] Alonso D F, Skilton G, Farías E F, et al. Antimetastatic effect of desmopressin in a mouse mammary tumor model[J]. Breast cancer research and treatment, 1999, 57: 271-275.

### Background

Desmopressin Acetate (DDAVP), a synthetic peptide analog of vasopressin, is a safe antidiuretic and hemostatic compound that acts as a selective agonist at the vasopressin V2 membrane receptor (V2R)<sup>[1]</sup>.

Desmopressin Acetate has moderate antiproliferative activity, and at low cell densities Desmopressin Acetate significantly inhibited F3II cell colony formation with an IC<sub>50</sub> value of 700 nM. Conditioned media from F3II monolayers exposed to low doses of Desmopressin Acetate (100 nM) significantly increased angiostatin formation in the presence of purified plasminogen. Following heterologous V2R expression, Desmopressin Acetate induces cyclic adenosine monophosphate (cAMP)-dependent endothelial nitric oxide synthase (eNOS) activation via Ser1177 phosphorylation<sup>[2]</sup>.

Co-injection of Desmopressin Acetate (1-2 µg/kg) at the time of i.v. injection of F3II or LM3 cells significantly inhibited the formation of tumor lung metastases in a mouse lung metastasis model of breast cancer, with a reduction of approximately 70% in the number of lung nodules in both cases<sup>[3]</sup>. Dogs undergoing surgery for intervertebral disc disease had a significantly prolonged buccal mucosal bleeding time (BMBT) after aspirin administration, but preoperative intravenous administration of Desmopressin Acetate rapidly reversed the prolongation of the BMBT, and none of them experienced intraoperative bleeding complications<sup>[4]</sup>.

### References:

- [1] Ripoll G V, Garona J, Pifano M, et al. Reduction of tumor angiogenesis induced by desmopressin in a breast cancer model[J]. Breast cancer research and treatment, 2013, 142: 9-18.
- [2] Kaufmann J E, Iezzi M, Vischer U M. Desmopressin (DDAVP) induces NO production in human endothelial cells via V2 receptor-and cAMP-mediated signaling[J]. Journal of Thrombosis and Haemostasis, 2003, 1(4): 821-828.
- [3] Alonso D F, Skilton G, Farías E F, et al. Antimetastatic effect of desmopressin in a mouse mammary tumor model[J]. Breast cancer research and treatment, 1999, 57: 271-275.
- [4] Di Mauro F M, Holowaychuk M K. Intravenous administration of desmopressin acetate to reverse acetylsalicylic acid-induced coagulopathy in three dogs[J]. Journal of Veterinary Emergency and Critical Care, 2013, 23(4): 455-458.

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