**Product Data Sheet**

### Chemical Properties

**Product Name:** 17-DMAG (Alvespimycin) HCl

**Cas No.:** 467214-21-7

**M.Wt:** 653.21

**Formula:** C32H48N4O8.HCl

**Chemical Name:** [(3R,5S,6R,7S,8E,10S,11S,12Z,14E)-21-[2-(dimethylamino)ethylamino]-6-hydroxy-5,11-dimethoxy-3,7,9,15-tetramethyl-16,20,22-trioxo-17-azabicyclo[16.3.1]docosa-1(21),8,12,14,18-pentaen-10-yl] carbamate;hydrochloride

**Canonical SMILES:** CC1CC(C(C=C(C(C=CC=C(C=O)NC2=CC(=O)C(=C(C1)C2=O)NCCN(CC(C)OC)OC(=O)N(C)C(O)OC.Cl

**Solubility:** ≥26.2mg/mL in DMSO

**Storage:** Store at -20°C

**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 stored below -20°C for several months.

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

### Biological Activity

**Targets:** Metabolism

**Pathways:** HSP

**Description:**

17-DMAG is an inhibitor of Hsp90 with IC50 value of 62±29nM [1]. 17-DMAG can bind to the ATP-binding motif of Hsp90 and inhibit the protein chaperoning activity of Hsp90. It will cause misfolding and subsequent degradation of Hsp90’s client proteins, such as
EGFR, AKT, mutant p53, and IKK. Since there is more specific conformation Hsp90 required for 17-DMAG binding in tumor cells and many client proteins of Hsp90 contribute to tumor cell growth, 17-DMAG is usually more toxic to tumor cells than to normal cells [2]. 17-DMAG is reported as an antitumor agent with more broadly exploitable activity and more pharmaceutically tractable characteristics in the in vitro and initial in vivo assay. 17-DMAG can effect cell growth when treating the NCI 60 cell lines with it, the mean GI50 is 0.053mM. The in vivo activity of 17-DMAG is tested in four melanoma models using the Freiburg human tumor xenograft panel and two lung xenografts. It shows that 17-DMAG has high activity in the two lung xenografts and two of the four melanoma models, but not in another two, MEXF 462 and MEXF 514 [3].

Reference:

Protocol

Cell experiment:

Cell lines Chronic lymphocytic leukemia (CLL)

Preparation method The solubility of this compound in DMSO is >10 mM. General tips for obtaining a higher concentration: Please warm the tube at 37 °C for 10 minutes and/or shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Reacting conditions ~ 1 μM; 24 or 48 hrs

Applications In CLL cells, 17-DMAG effectively led to depletion of the Hsp90 client protein, decreasing NF-κB p50/p65 DNA binding, NF-κB target gene transcription and caspase-dependent apoptosis. By targeting the NF-κB family, 17-DMAG selectively mediated cytotoxicity against CLL cells (in dose- and time-dependent manner), but not normal T cells or NK cells important for immune surveillance.
### Animal experiment [3]:

<table>
<thead>
<tr>
<th>Animal models</th>
<th>SCID mice engrafted with TCL1 leukemia cells</th>
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</thead>
<tbody>
<tr>
<td>Dosage form</td>
<td>10 mg/kg; i.p.; 5 times per week for 16 days</td>
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<tr>
<td>Applications</td>
<td>In a TCL1-SCID transplant mouse model, the 17-DMAG treatment (10 mg/kg) significantly decreased the white blood cell count and prolonged the survival.</td>
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<tr>
<td>Other notes</td>
<td>Please test the solubility of all compounds indoor, and the actual solubility may slightly differ with the theoretical value. This is caused by an experimental system error and it is normal.</td>
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### Reference:


### Caution

**FOR RESEARCH PURPOSES ONLY.**

**NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.**

Specific storage and handling information for each product is indicated on the product datasheet. Most ApexBio products are stable under the recommended conditions. Products are sometimes shipped at a temperature that differs from the recommended storage temperature. Shortterm storage of many products are stable in the short-term at temperatures that differ from that required for long-term storage. We ensure that the product is shipped under conditions that will maintain the quality of the reagents. Upon receipt of the product, follow the storage recommendations on the product data sheet.