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# Produktinformation

- Forschungsprodukte & Biochemikalien
- Zellkultur & Verbrauchsmaterial
- Diagnostik & molekulare Diagnostik
- Laborgeräte & Service

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See the following pages for more information!

## Lieferung & Zahlungsart

siehe unsere Liefer- und Versandbedingungen

## Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand


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# Alvelestat

**Cat. No.:** HY-15651

**CAS No.:** 848141-11-7

**Molecular Formula:** $C_{25}H_{22}F_3N_5O_4S$

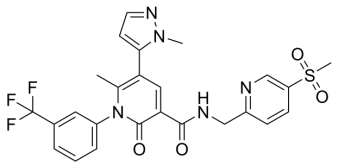
**Molecular Weight:** 545.53

**Target:** Elastase

**Pathway:** Metabolic Enzyme/Protease

**Storage:**

| | | |
|---|---|---|
| Powder | -20°C | 3 years |
| | 4°C | 2 years |
| In solvent | -80°C | 2 years |
| | -20°C | 1 year |



## SOLVENT & SOLUBILITY

**In Vitro**

DMSO : ≥ 33 mg/mL (60.49 mM)

* "≥" means soluble, but saturation unknown.

| Preparing Stock Solutions | Mass / Solvent / Concentration | 1 mg | 5 mg | 10 mg |
|---|---|---|---|---|
| | 1 mM | 1.8331 mL | 9.1654 mL | 18.3308 mL |
| | 5 mM | 0.3666 mL | 1.8331 mL | 3.6662 mL |
| | 10 mM | 0.1833 mL | 0.9165 mL | 1.8331 mL |

Please refer to the solubility information to select the appropriate solvent.

**In Vivo**

1. Add each solvent one by one: 20% DMSO, 60% PEG400, 20% Water
   Solubility: 25 mg/mL (45.83 mM); Suspended solution; Need ultrasonic
2. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (4.58 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (4.58 mM); Clear solution
4. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (4.58 mM); Clear solution

## BIOLOGICAL ACTIVITY

**Description**

Alvelestat (AZD9668) is an orally bioavailable, affinity and selective inhibitor of neutrophil elastase (NE) with a $pIC_{50}$ value of 7.9 nM, a $K_i$ value of 9.4 nM and a $K_d$ value of 9.5 nM[1].

**$IC_{50}$ & Target**

pIC: 7.9 nM; Ki: 9.4 nM; Kd: 9.5 nM (neutrophil elastas)[1]

**In Vitro**

Alvelestat (20 μg/mL; 16 hours; HBE and A549 cells) treatment decreases cells death and decreases the levels of IL-1β, IL-6, and TNF-α in vitro[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Viability Assay[2]

| | |
|---|---|
| Cell Line: | Human bronchial epithelial cells (HBE) and human alveolar epithelial cells (A549) |
| Concentration: | 20 μg/mL |
| Incubation Time: | 16 hours |
| Result: | Decreased cytotoxicity and inflammatory responses. |

**In Vivo**

Alvelestat (1-10 mg/kg; oral administration; twice daily; for 4 days; Female BALB/cJBomTac mice) treatment reduces the inflammatory response to cigarette smoke as indicated by a reduction in BAL neutrophils and interleukin-1β[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

| | |
|---|---|
| Animal Model: | Female BALB/cJBomTac mice exposed to smoke cigarette smoke[1] |
| Dosage: | 1 mg/kg , 3 mg/kg , 6 mg/kg , 10 mg/kg |
| Administration: | Oral administration; twice daily; for 4 days |
| Result: | Reduced the inflammatory response to cigarette smoke as indicated by a reduction in BAL neutrophils and interleukin-1β. |

## CUSTOMER VALIDATION

- Cancer Cell. 2021 Mar 8;39(3):423-437.e7.
- Biomed Pharmacother. 2020 Dec 26;134:111152.
- NPJ Regen Med. 2020 Oct 30;5(1):19.
- Neural Regen Res. 2023 Oct;18(10):2252-2259
- FEBS Open Bio. 2018 Mar 25;8(5):751-763.

See more customer validations on www.MedChemExpress.com

## REFERENCES

[1]. Stevens T, et al. AZD9668: pharmacological characterization of a novel oral inhibitor of neutrophil elastase. J Pharmacol Exp Ther. 2011 Oct;339(1):313-20.

[2]. Li H, et al. Neutrophil extracellular traps contribute to the pathogenesis of acid-aspiration-induced ALI/ARDS. Oncotarget. 2017 Nov 28;9(2):1772-1784.



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