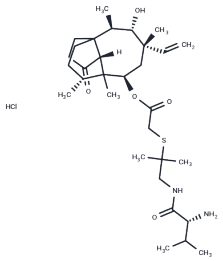
# Data Sheet (Cat.No.T6715)

TargetMol

## Valnemulin hydrochloride

### Chemical Properties



CAS No. : 133868-46-9

Formula: C31H52N2O5S·HCl

Molecular Weight: 601.28

Storage: Store at low temperature,Store under nitrogen
Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

### Biological Description

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| Description | Valnemulin hydrochloride (Valnemulin HCl) is a broad-spectrum bacteriostatic agent inhibiting protein synthesis in bacteria by binding to the peptidyl transferase component of the 50S subunit of ribosomes. |
| Targets(IC50) | Antibacterial,Antibiotic |
| In vitro | Valnemulin (20 μM) completely inhibits the peptidyl transferase reaction, thus inhibits peptide bond formation. Valnemulin enhances the reactivity of nucleotides A2058 and A2059 moderately, whereas they protect U2506 strongly. [1] Valnemulin shows exceptional activity against M hyopneumoniae (MIC90 0.5 μg/mL) and M hyosynoviae (MIC range 0.1-0.25 0.5 μg/mL) field strains. [2] Valnemulin is mainly active against Gram-positive bacteria with moderate activity against some fastidious Gram-negative bacilli (e.g., anaerobic bacteria) and Mycoplasma and is used almost exclusively in animals, largely in swine in China. [3] |
| In vivo | Valnemulin is absorbed rapidly, distributed widely and rapidly and excreted rapidly after oral administration to rats. [3] Valnemulin results in a rapid diminution of clinical signs, restoration of appetite and reversal of weight loss in young calves. Valnemulin results in a more rapid reduction of clinical scores and eliminated M. bovis from the lungs more effectively than Enrofloxacin. [4] Valnemulin significantly decreases the wet-to-dry weight (W/D) ratios of lungs, protein concentrations, and the number of total cells, neutrophils, macrophages, and leukomonocytes, and histologic analysis indicates that valnemulin significantly attenuates tissue injury. Valnemulin significantly increases LPS-induced SOD activity in BALF and decreases lung myeloperoxidase (MPO) activity activity as well. Valnemulin also inhibits the production of tumor necrosis factor-alpha, interleukin-6, and interleukin-1beta, which is consistent with mRNA expression in lung. [5] |

### Solubility Information

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| Solubility | H2O: 250 mg/mL (415.78 mM),Sonication is recommended.<br>DMSO: 93 mg/mL (154.67 mM),Sonication is recommended.<br>Ethanol: 93 mg/mL (154.67 mM),Sonication is recommended.<br>(< 1 mg/ml refers to the product slightly soluble or insoluble) |

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| In vivo Formulation | 10% DMSO+40% PEG300+5% Tween 80+45% Saline: 3.3 mg/mL (5.49 mM),Sonication is recommended.<br>*Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.* |

Preparing Stock Solutions

| | 1mg | 5mg | 10mg |
|---|---|---|---|
| 1 mM | 1.6631 mL | 8.3156 mL | 16.6312 mL |
| 5 mM | 0.3326 mL | 1.6631 mL | 3.3262 mL |
| 10 mM | 0.1663 mL | 0.8316 mL | 1.6631 mL |
| 50 mM | 0.0333 mL | 0.1663 mL | 0.3326 mL |

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Poulsen SM, et al. Mol Microbiol, 2001, 41(5), 1091-1099.
Hannan PC, et al. Res Vet Sci, 1997, 63(2), 157-160.
Yuan LG, et al. J Vet Pharmacol Ther, 2011, 34(3), 224-231.
Stipkovits L, et al. Res Vet Sci, 2005, 78(3), 207-215.