

Anti-MRSA agent 20

Chemical Properties

CAS No. :

Formula: C₃₄H₄₇N₀S₂

Molecular Weight: 661.87

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Actual storage temperature shall be subject to the COA.

Biological Description

Description	Anti-MRSA agent 20 (Compound a4) is an antimicrobial agent targeting MRSA with a minimum inhibitory concentration (MIC) of less than 0.03125 µg/mL. It binds to the peptidyl transferase center of the ribosome, inhibiting the synthesis of MRSA toxins and bacterial division, thereby suppressing bacterial survival. Furthermore, Anti-MRSA agent 20 significantly reduces the pulmonary MRSA load and diminishes lung damage in mice infected with MRSA (ED ₅₀ = 6.48 mg/kg).
Targets(IC50)	Tyrosinase
In vitro	Anti-MRSA agent 20 effectively inhibits the growth of Staphylococcus aureus ATCC 29213, MRSA ATCC 43300, and MRSE ATCC 51625 with a minimal inhibitory concentration (MIC) of less than 0.03125 µg/mL. In time-kill kinetics experiments conducted over 24 hours, Anti-MRSA agent 20 demonstrates bactericidal activity against MRSA at concentrations ranging from 1 × MIC to 6 × MIC. The compound also delays the development of bacterial resistance, achieving an MIC of 8 µg/mL on days 17-18 (21 days). At high concentrations (> 120 µg/mL), Anti-MRSA agent 20 exhibits toxicity in HEK293 and HEPG2 cells with an LC ₅₀ of 165.0 µg/mL, but at lower concentrations (0.5-1 µg/mL), it suppresses the synthesis of MRSA toxins without causing obvious teratogenic effects in zebrafish embryos.
In vivo	The compound designated as anti-MRSA agent 20, administered intraperitoneally at dosages ranging from 2.5 to 40 mg/kg to mice one hour after bacterial infection, significantly reduces the bacterial burden in the lungs, alleviates pulmonary lesions, and increases survival rates in mice infected with MRSA.

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.5109 mL	7.5544 mL	15.1087 mL
5 mM	0.3022 mL	1.5109 mL	3.0217 mL
10 mM	0.1511 mL	0.7554 mL	1.5109 mL
50 mM	0.0302 mL	0.1511 mL	0.3022 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.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

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