

Anti-MRSA agent 33 iodide

Chemical Properties

CAS No. :

Formula:

Molecular Weight:

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 33 iodide is an effective anti-methicillin-resistant <i>Staphylococcus aureus</i> (MRSA) compound with a minimum inhibitory concentration (MIC) of 2-4 µg/mL. It demonstrates significant biofilm eradication capability and exhibits very low cytotoxicity to mammalian cells. The compound specifically binds to phosphatidylglycerol (PG) on bacterial membranes, leading to membrane disruption, excessive reactive oxygen species (ROS) production, and metabolic collapse, which ultimately result in bacterial cell death. In a murine skin infection model, Anti-MRSA agent 33 iodide effectively reduced bacterial load.
Targets(IC50)	Antibacterial, ROS
In vitro	Anti-MRSA agent 33 iodide (Compound IV4) exhibits antibacterial activity against <i>Staphylococcus aureus</i> (S. aureus) ATCC 29213, methicillin-resistant <i>Staphylococcus aureus</i> (MRSA) N315, and ten clinical MRSA isolates (M22, M17, M16, M23, M14, M13, M11, M21, M12, M20) with minimum inhibitory concentrations (MIC) of 2-4 µg/mL over 16-20 hours. It shows rapid bactericidal action against S. aureus ATCC 29213 and MRSA N315 at concentrations of 8-32 µg/mL within 3-6 hours, with a low potential for resistance induction. The compound disrupts biofilms at 2-16 µg/mL over 3-6 hours, targeting S. aureus ATCC 29213 and MRSA N315. Additionally, it has a favorable safety profile with half maximal inhibitory concentrations (IC 50) of 22.48 µg/mL and 27.45 µg/mL against RAW 264.7 and NIH 3T3 cells, respectively. Anti-MRSA agent 33 iodide specifically binds to phosphatidylglycerol (PG) on bacterial cell membranes at 4-64 µg/mL, causing membrane disruption, excessive reactive oxygen species (ROS) production, metabolic collapse, and consequently, bacterial cell death.
In vivo	Compound IV4 (Anti-MRSA agent 33 iodide, 5-10 mg/kg, Subcutaneous Injection, single dose) effectively reduces bacterial load and alleviates inflammation in a murine skin infection model, without causing systemic toxicity.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

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Tel:781-999-4286 E_mail:info@targetmol.com Address:34 Washington Street,Wellesley Hills,MA 02481