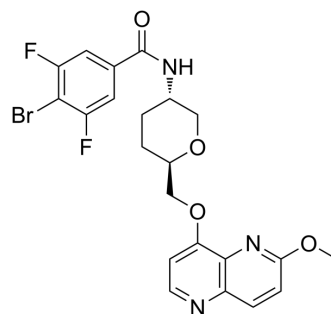


Anti-MRSA agent 7

Cat. No.:	HY-149271
Molecular Formula:	C ₂₂ H ₂₀ BrF ₂ N ₃ O ₄
Molecular Weight:	508.31
Target:	Bacterial; DNA/RNA Synthesis; Topoisomerase
Pathway:	Anti-infection; Cell Cycle/DNA Damage
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Anti-MRSA agent 7 (Compound 12) is a potent antibacterial agent. Anti-MRSA agent 7 inhibits <i>S. aureus</i> DNA gyrase, <i>E. coli</i> DNA gyrase, <i>S. aureus</i> topo IV and <i>E. coli</i> topo IV with IC ₅₀ s of 0.185, 0.365, 0.341 and 0.059 μM, respectively ^[1] .																																				
IC₅₀ & Target	TOPO IV 0.059 μM (IC ₅₀ , <i>E. coli</i>)	TOPO IV 0.341 μM (IC ₅₀ , <i>S. aureus</i>)	DNA gyrase 0.185 μM (IC ₅₀ , <i>S. aureus</i>)	DNA gyrase 0.365 μM (IC ₅₀ , <i>E. coli</i>)																																	
In Vitro	<p>Anti-MRSA agent 7 (Compound 12) shows a dose-dependent killing efficacy achieving bactericidal effect against planktonic methicillin-resistant <i>S. aureus</i> (ATCC 43300) at 8 × MIC after 8 h of treatment, after which re-growth occurs^[1].</p> <p>Antimicrobial activity of Anti-MRSA agent 7 (Compound 12) against a panel of Gram-positive and Gram-negative bacterial pathogens^[1]</p> <table border="1"> <thead> <tr> <th>Strain</th> <th><i>S. aureus</i> (ATCC 29213)</th> <th>MRSAQA-12.1</th> <th><i>E. coli</i> N43 (CGSC# 5583)</th> <th>MRSA QA-11.7</th> <th>MRSA QA-11.2</th> <th><i>E. faecalis</i> DRK 057</th> <th><i>E. coli</i> (ATCC 25922)</th> </tr> </thead> <tbody> <tr> <td>MIC (μM)</td> <td>0.03</td> <td>0.03</td> <td>0.06</td> <td>0.06</td> <td>0.124</td> <td>4.07</td> <td>252</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Strain</th> <th><i>E. coli</i> D22</th> <th><i>A. baumannii</i></th> <th><i>E. coli</i> ESBL QA:11.3</th> <th><i>K. pneumoniae</i></th> <th><i>S. alachua</i> RDK 030c</th> <th><i>P. aeruginosa</i> RDK 184</th> </tr> </thead> <tbody> <tr> <td>MIC (μM)</td> <td>252</td> <td>252</td> <td>>252</td> <td>>252</td> <td>>252</td> <td>>252</td> </tr> </tbody> </table> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p>							Strain	<i>S. aureus</i> (ATCC 29213)	MRSAQA-12.1	<i>E. coli</i> N43 (CGSC# 5583)	MRSA QA-11.7	MRSA QA-11.2	<i>E. faecalis</i> DRK 057	<i>E. coli</i> (ATCC 25922)	MIC (μM)	0.03	0.03	0.06	0.06	0.124	4.07	252	Strain	<i>E. coli</i> D22	<i>A. baumannii</i>	<i>E. coli</i> ESBL QA:11.3	<i>K. pneumoniae</i>	<i>S. alachua</i> RDK 030c	<i>P. aeruginosa</i> RDK 184	MIC (μM)	252	252	>252	>252	>252	>252
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MIC (μM)	252	252	>252	>252	>252	>252																															
In Vivo	<p>Anti-MRSA agent 7 (Compound 12; 20 and 40 mg/kg; i.p.; QID for 1 day) demonstrates high in vivo efficacy in MRSA neutropenic mouse thigh infection model^[1].</p> <p>MCE has not independently confirmed the accuracy of these methods. They are for reference only.</p> <table border="1"> <tr> <td>Animal Model:</td> <td>CD-1 female mice, MRSA neutropenic mouse thigh infection model^[1]</td> </tr> <tr> <td>Dosage:</td> <td>20 and 40 mg/kg</td> </tr> </table>							Animal Model:	CD-1 female mice, MRSA neutropenic mouse thigh infection model ^[1]	Dosage:	20 and 40 mg/kg																										
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Administration:	IP/QID (four times a day) at 2, 8, 14, and 20 h post infection
Result:	Demonstrated inhibition of bacterial growth in a dose dependent manner.

REFERENCES

[1]. Kokot M, et al. Amide containing NBTI antibacterials with reduced hERG inhibition, retained antimicrobial activity against gram-positive bacteria and in vivo efficacy. Eur J Med Chem. 2023 Mar 15;250:115160.

Caution: Product has not been fully validated for medical applications. For research use only.

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