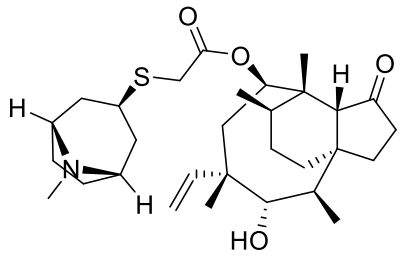
Product data sheet

MedKoo Cat#: 300270 Name: Retapamulin CAS#: 224452-66-8 Chemical Formula: $C_{30}H_{47}NO_4S$ Exact Mass: 517.32258 Molecular Weight: 517.76	
Product supplied as:	Powder
Purity (by HPLC):	≥ 98%
Shipping conditions	Ambient temperature
Storage conditions:	Powder: -20°C 3 years; 4°C 2 years.
	In solvent: -80°C 3 months; -20°C 2 weeks.

1. Product description:
Retapamulin, also known as SB-275833, is a newer topical agent of pleuromutilin class approved by the Food and Drug Administration for treatment of impetigo in children. It has been demonstrated to have low potential for the development of antibacterial resistance and a high degree of potency against poly drug resistant Gram-positive bacteria found in skin infections including Staphylococcus aureus strains. The drug is safe owing to low systemic absorption and has only minimal side-effect of local irritation at the site of application.

2. CoA, QC data, SDS, and handling instruction
SDS and handling instruction, CoA with copies of QC data (NMR, HPLC and MS analytical spectra) can be downloaded from the product web page under "QC And Documents" section. Note: copies of analytical spectra may not be available if the product is being supplied by MedKoo partners. Whether the product was made by MedKoo or provided by its partners, the quality is 100% guaranteed.

3. Solubility data

Solvent	Max Conc. mg/mL	Max Conc. mM
DMF	30	57.9
DMSO	30	57.9
Ethanol	30	57.9

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	1.93 mL	9.66 mL	19.31 mL
5 mM	0.39 mL	1.93 mL	3.86 mL
10 mM	0.19 mL	0.97 mL	1.93 mL
50 mM	0.04 mL	0.19 mL	0.39 mL

5. Molarity Calculator, Reconstitution Calculator, Dilution Calculator
Please refer the product web page under section of "Calculator"

6. Recommended literature which reported protocols for in vitro and in vivo study
In vitro study

1. Bello SO, Yunusa A, Adamu AA, Imam MU, Bello MB, Shuaibu A, Igumbor EU, Habib ZG, Popoola MA, Ochu CL, Bello AY, Deeni YY, Okoye I. Innovative, rapid, high-throughput method for drug repurposing in a pandemic-A case study of SARS-CoV-2 and COVID-19. Front Pharmacol. 2023 Mar 1;14:1130828. doi: 10.3389/fphar.2023.1130828. PMID: 36937851; PMCID: PMC10014809.
2. Harrington AT, Black JA, Clarridge JE 3rd. In Vitro Activity of Retapamulin and Antimicrobial Susceptibility Patterns in a Longitudinal Collection of Methicillin-Resistant Staphylococcus aureus Isolates from a Veterans Affairs Medical Center. Antimicrob Agents Chemother. 2015 Dec 14;60(3):1298-303. doi: 10.1128/AAC.01568-15. PMID: 26666950; PMCID: PMC4775979.

In vivo study

1. Guo Y, Ramos RI, Cho JS, Donegan NP, Cheung AL, Miller LS. In vivo bioluminescence imaging to evaluate systemic and topical antibiotics against community-acquired methicillin-resistant Staphylococcus aureus-infected skin wounds in mice.

Antimicrob Agents Chemother. 2013 Feb;57(2):855-63. doi: 10.1128/AAC.01003-12. Epub 2012 Dec 3. PMID: 23208713; PMCID: PMC3553733.

2. Rittenhouse S, Singley C, Hoover J, Page R, Payne D. Use of the surgical wound infection model to determine the efficacious dosing regimen of retapamulin, a novel topical antibiotic. Antimicrob Agents Chemother. 2006 Nov;50(11):3886-8. doi: 10.1128/AAC.00183-06. PMID: 17065626; PMCID: PMC1635196.

7. Bioactivity

Biological target:

Retapamulin is a pleuromutilin antibiotic that inhibits bacterial protein synthesis by binding to bacterial ribosomes in the peptidyl transferase component of the 50S subunit and inhibiting peptide bond formation. It has activity against staphylococcal, streptococcal, and anaerobic Gram-positive bacteria.

In vitro activity

The baseline levels of retapamulin resistance in MRSA were low (0.25%) Although the use of mupirocin is currently the standard therapy for decolonization practices, the activity of retapamulin warrants its consideration as an alternative therapy in MRSA decolonization regimens.

Reference: Antimicrob Agents Chemother. 2015 Dec 14;60(3):1298-303. https://www.medkoo.com/admins/products/6520/edit

In vivo activity

At all concentrations tested, retapamulin administered demonstrated significant efficacy compared with untreated animals in the study's Staphylococcus aureus and Streptococcus pyogenes wound infection model. All retapamulin concentrations evaluated produced a potent effect compared with untreated or placebo-treated animals. These results demonstrate the potential benefit of retapamulin over existing topical antibiotics, particularly against isolates resistant to currently used agents.

Reference: Antimicrob Agents Chemother. 2006 Nov; 50(11): 3886–3888. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1635196/

Note: The information listed here was extracted from literature. MedKoo has not independently retested and confirmed the accuracy of these methods. Customer should use it just for a reference only.