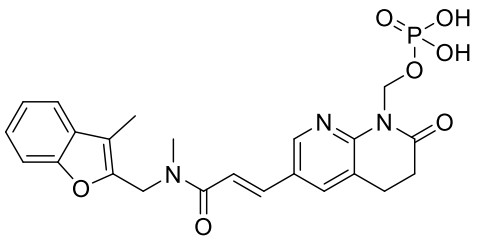
Product data sheet

MedKoo Cat#: 327001 Name: Afabicin CAS#: 1518800-35-5 (free acid) Chemical Formula: $C_{23}H_{24}N_3O_7P$ Exact Mass: 485.1352 Molecular Weight: 485.4328	
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:
Afabicin (formerly Debio 1450, AFN-1720) is a prodrug of afabicin desphosphono, an enoyl-acyl carrier protein reductase (FabI) inhibitor, and is a first-in-class antibiotic with a novel mode of action to specifically target fatty acid synthesis in Staphylococcus spp.

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
N/A	N/A	N/A

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.06 mL	10.30 mL	20.60 mL
5 mM	0.41 mL	2.06 mL	4.12 mL
10 mM	0.21 mL	1.03 mL	2.06 mL
50 mM	0.04 mL	0.21 mL	0.41 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. Peyrusson F, Van Wessem A, Dieppois G, Van Bambeke F, Tulkens PM. Cellular pharmacokinetics and intracellular activity of the bacterial fatty acid synthesis inhibitor, afabicin desphosphono against different resistance phenotypes of Staphylococcus aureus in models of cultured phagocytic cells. Int J Antimicrob Agents. 2020 Feb;55(2):105848. doi: 10.1016/j.ijantimicag.2019.11.005. Epub 2019 Nov 23. PMID: 31770623.

In vivo study

N/A

7. Bioactivity
Biological target:

Afabicin (Debio 1450) is the prodrug of Debio1452, specifically targeting staphylococci without significant activity against other Gram-positive or Gram-negative species. Debio1452 is an inhibitor FabI, an enzyme critical to fatty acid biosynthesis in staphylococci.

In vitro activity

Afabicin desphosphono (Debio 1452, the active form of afabicin [Debio 1450]) is an inhibitor of FabI enoyl-Acyl carrier protein reductase and has specific and extremely potent activity against Staphylococci, including strains resistant to current antistaphylococcal

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agents. Using mouse J774 macrophages and human THP-1 monocytes, this study showed that afabicin desphosphono: (i) accumulates rapidly in cells, reaching stable cellular-to-extracellular concentration ratios of about 30; (ii) is recovered entirely and free in the cell-soluble fraction (no evidence of stable association with proteins or other macromolecules).

Reference: Int J Antimicrob Agents. 2020 Feb;55(2):105848. https://pubmed.ncbi.nlm.nih.gov/31770623/

In vivo activity

N/A

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.