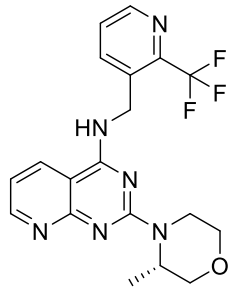
Product data sheet

MedKoo Cat#: 555646 Name: AWZ1066S CAS#: 2239272-16-1 Chemical Formula: $C_{19}H_{19}F_3N_6O$ Exact Mass: 404.1572 Molecular Weight: 404.3972	
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:
AWZ1066S is a highly specific anti-Wolbachia drug candidate for a short-course treatment of filariasis. AWZ1066S shows superior efficacy to existing anti-Wolbachia therapies in validated preclinical models of infection and has DMPK characteristics that are compatible with a short therapeutic regimen of 7 days or less. This candidate molecule is well-positioned for onward development and has the potential to make a significant impact on communities affected by filariasis.

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
DMSO	125.0	309.10

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	2.47 mL	12.36 mL	24.73 mL
5 mM	0.49 mL	2.47 mL	4.95 mL
10 mM	0.25 mL	1.24 mL	2.47 mL
50 mM	0.05 mL	0.25 mL	0.49 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. Hong WD, Benayoud F, Nixon GL, Ford L, Johnston KL, Clare RH, Cassidy A, Cook DAN, Siu A, Shiotani M, Webborn PJH, Kavanagh S, Aljayyoussi G, Murphy E, Steven A, Archer J, Struever D, Frohberger SJ, Ehrens A, Hübner MP, Hoerauf A, Roberts AP, Hubbard ATM, Tate EW, Serwa RA, Leung SC, Qie L, Berry NG, Gusovsky F, Hemingway J, Turner JD, Taylor MJ, Ward SA, O'Neill PM. AWZ1066S, a highly specific anti-Wolbachia drug candidate for a short-course treatment of filariasis. Proc Natl Acad Sci U S A. 2019 Jan 22;116(4):1414-1419. doi: 10.1073/pnas.1816585116. Epub 2019 Jan 7. PMID: 30617067; PMCID: PMC6347715.

In vivo study

1. Hong WD, Benayoud F, Nixon GL, Ford L, Johnston KL, Clare RH, Cassidy A, Cook DAN, Siu A, Shiotani M, Webborn PJH, Kavanagh S, Aljayyoussi G, Murphy E, Steven A, Archer J, Struever D, Frohberger SJ, Ehrens A, Hübner MP, Hoerauf A, Roberts AP, Hubbard ATM, Tate EW, Serwa RA, Leung SC, Qie L, Berry NG, Gusovsky F, Hemingway J, Turner JD, Taylor MJ, Ward SA, O'Neill PM. AWZ1066S, a highly specific anti-Wolbachia drug candidate for a short-course treatment of filariasis. Proc Natl Acad Sci U S A. 2019 Jan 22;116(4):1414-1419. doi: 10.1073/pnas.1816585116. Epub 2019 Jan 7. PMID: 30617067; PMCID: PMC6347715.

7. Bioactivity
Biological target:

Product data sheet

AWZ1066S is an anti-Wolbachia drug candidate for a short-course treatment of filariasis, with an EC50 of 2.5 nM in cell assay.

In vitro activity

AWZ1066 (racemic mixture) was active against Wolbachia in a cell-based assay with an EC50 of 2.6 ± 0.5 nM (Fig. 1B). In an orthogonal secondary in vitro assay utilizing microfilariae (mf) of the human parasite B. malayi, AWZ1066 reduced Wolbachia within the mf with an EC50 of 150 nM while having no effect on the viability and motility of the mf at up to the top testing concentration of 5 μM.

Reference: Proc Natl Acad Sci U S A. 2019 Jan 22; 116(4): 1414–1419. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6347715/

In vivo activity

After 7 d of twice-daily treatment of AWZ1066S at either 100 or 50 mg/kg orally, Wolbachia load was reduced by >99% compared with control untreated animals, 18 wk post treatment (Kruskal–Wallis statistic 43.5, $P < 0.0001$; Fig. 2B). After AWZ1066S treatment, the peripheral blood microfilaremia began to decline from 6 wk post treatment. A state of amicrofilaremia (absence of mf in the blood) was evident from 14 wk post treatment in the 7-d AWZ1066S treatment groups, a state that was sustained until the end of the experiment at 18 wk post treatment. Thus, treatment with AWZ1066S for 7 d leads to sterilization and gradual depletion of mf with the assumption, based on extensive clinical trial data with doxycycline, that this will result in a “slow” killing of adult worms alongside an improved safety profile.

Reference: Proc Natl Acad Sci U S A. 2019 Jan 22; 116(4): 1414–1419. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6347715/