

# Product data sheet



MedKoo Cat#: 464839 Name: NAG-thiazoline CAS: 179030-22-9 Chemical Formula: C <sub>8</sub> H <sub>13</sub> NO <sub>4</sub> S Exact Mass: 219.0565 Molecular Weight: 219.255	
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:

NAG-thiazoline is an inhibitor of O-GlcNAcase (OGA;  $K_i = 180$  nM). It is active against *V. campbellii* (MIC = 0.5  $\mu$ M).

## 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	30.0	136.83
DMSO	25.0	114.02
Ethanol	30.0	136.83
PBS (pH 7.2)	5.0	22.80

## 4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	4.56 mL	22.80 mL	45.61 mL
5 mM	0.91 mL	4.56 mL	9.12 mL
10 mM	0.46 mL	2.28 mL	4.56 mL
50 mM	0.09 mL	0.46 mL	0.91 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. Meekrathok P, Stubbs KA, Aunkham A, Kaewmaneevat A, Kardkuntod A, Bulmer DM, van den Berg B, Suginta W. NAG-thiazoline is a potent inhibitor of the *Vibrio campbellii* GH20  $\beta$ -N-Acetylglucosaminidase. *FEBS J.* 2020 Nov;287(22):4982-4995. doi: 10.1111/febs.15283. Epub 2020 Mar 23. PMID: 32145141.

2. Reid CW, Blackburn NT, Clarke AJ. The effect of NAG-thiazoline on morphology and surface hydrophobicity of *Escherichia coli*. *FEMS Microbiol Lett.* 2004 May 15;234(2):343-8. doi: 10.1016/j.femsle.2004.03.047. PMID: 15135542.

### In vivo study

TBD

## 7. Bioactivity

### Biological target:

NAG-thiazoline is an inhibitor of O-GlcNAcase (OGA;  $K_i = 180$  nM).

### In vitro activity

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This study examined NAG-thiazoline (NGT)-mediated inhibition of a recombinantly expressed GH20  $\beta$ -N-acetylglucosaminidase, namely VhGlcNAcase from *Vibrio campbellii* (formerly *V. harveyi*) ATCC BAA-1116. NGT strongly inhibited VhGlcNAcase with an  $IC_{50}$  of  $11.9 \pm 1.0 \mu\text{m}$  and  $K_i$   $62 \pm 3 \mu\text{m}$ , respectively. NGT was also found to completely inhibit the growth of *V. campbellii* strain 650 with an minimal inhibitory concentration value of  $0.5 \mu\text{m}$ .

Reference: FEBS J. 2020 Nov;287(22):4982-4995. <https://pubmed.ncbi.nlm.nih.gov/32145141/>

## In vivo activity

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TBD

*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.*