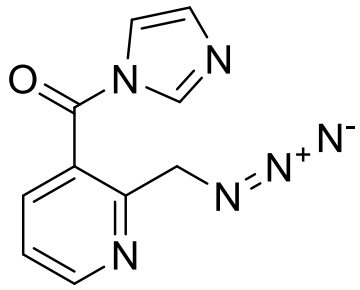
Product data sheet

MedKoo Cat#: 464216 Name: NAI-N3 CAS: 1612756-29-2 Chemical Formula: $C_{10}H_8N_6O$ Exact Mass: 228.076 Molecular Weight: 228.215	
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:
NAI-N3 is a probe for icSHAPE (in vivo click selective 2'-hydroxyl acylation and profiling experiment). It acylates the 2'-OH in ssRNA and enables RNA structure profiling in vivo and ex vivo for all four bases. NAI-N3 can be used for site-specific RNA acylation using the RAIL (RNA Acylation at Induced Loops) method or in Apta-Seq to discover new aptamers in selected pools.

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	250.0	1095.46
Ethanol	16.67	73.05

4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	4.38 mL	21.91 mL	43.82 mL
5 mM	0.88 mL	4.38 mL	8.76 mL
10 mM	0.44 mL	2.19 mL	4.38 mL
50 mM	0.09 mL	0.44 mL	0.88 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. Flynn RA, Zhang QC, Spitale RC, Lee B, Mumbach MR, Chang HY. Transcriptome-wide interrogation of RNA secondary structure in living cells with icSHAPE. Nat Protoc. 2016 Feb;11(2):273-90. doi: 10.1038/nprot.2016.011. Epub 2016 Jan 14. PMID: 26766114; PMCID: PMC4896316.

In vivo study

1. Flynn RA, Zhang QC, Spitale RC, Lee B, Mumbach MR, Chang HY. Transcriptome-wide interrogation of RNA secondary structure in living cells with icSHAPE. Nat Protoc. 2016 Feb;11(2):273-90. doi: 10.1038/nprot.2016.011. Epub 2016 Jan 14. PMID: 26766114; PMCID: PMC4896316.

7. Bioactivity
Biological target:

NAI-N3 is a RNA acylation reagent that enables RNA purification. NAI-N3 is a dual-function SHAPE (selective 2-hydroxyl acylation and profiling experiment) probe (RNA structure probe and enrichment).

In vitro activity

Product data sheet

In brief, the bifunctional NAI-N3 SHAPE reagent is used to label all RNAs inside living cells (or in vitro refolded RNA) to generate covalent modifications on targeted RNAs at single-nucleotide resolution.

Reference: Nat Protoc. 2016 Feb;11(2):273-90. https://pubmed.ncbi.nlm.nih.gov/26766114/

In vivo activity

This study has tested the NAI-N_3 reagent in bacterial (Gram-negative *Escherichia coli*), yeast, insect and mammalian cells for SHAPE experiments. All of these systems proved to be amenable for icSHAPE modification and RNA structure determination. This study has successfully generated icSHAPE data from experiments in which the *in vivo* modification occurs at temperatures between 30 and 37 °C, to accommodate the specific culture temperatures. Thus, the procedure can be easily adapted to a wide variety of culture systems to allow transcriptome-wide RNA structure determination in most model systems.

Reference: Nat Protoc. 2016 Feb;11(2):273-90. https://pubmed.ncbi.nlm.nih.gov/26766114/

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.