

# Product data sheet



MedKoo Cat#: 526639 Name: MSBN CAS: 135980-66-4 Chemical Formula: C <sub>17</sub> H <sub>17</sub> NO <sub>4</sub> S Exact Mass: 331.0878 Molecular Weight: 331.386	
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:

MSBN is a highly selective fluorogenic probe for thiols, selectively imaging thiols in live cells and specifically label protein thiols with a turn-on signal to determine diverse reversible protein thiol modifications.

## 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	100.0	301.76

## 4. Stock solution preparation table:

Concentration / Solvent Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.02 mL	15.09 mL	30.18 mL
5 mM	0.60 mL	3.02 mL	6.04 mL
10 mM	0.30 mL	1.51 mL	3.02 mL
50 mM	0.06 mL	0.30 mL	0.60 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

Zhou P, Yao J, Hu G, Fang J. Naphthalimide Scaffold Provides Versatile Platform for Selective Thiol Sensing and Protein Labeling. ACS Chem Biol. 2016 Apr 15;11(4):1098-105. doi: 10.1021/acscchembio.5b00856. Epub 2016 Feb 9. PMID: 26813105.

In vivo study

TBD

## 7. Bioactivity

Biological target:

MSBN is a highly selective fluorogenic probe for thiols.

In vitro activity

This study reported the discovery of 4-methylsulfonyl-N-n-butyl-1,8-naphthalimide (MSBN), a highly selective fluorogenic probe for thiols based on the 1,8-naphthalimide scaffold. Thiols react with MSBN nearly quantitatively via nucleophilic aromatic substitution to replace the methylsulfonyl group and restore the quenched fluorescence (>100-fold increase). MSBN was employed to selectively image thiols in live cells and specifically label protein thiols with a turn-on signal to determine diverse reversible protein thiol modifications. In addition, this study introduced a bulky group into the MSBN as a mass tag to create a probe MSBN-TPP, which readily discriminates the reduced thioredoxin from the oxidized one.

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Reference: ACS Chem Biol. 2016 Apr 15;11(4):1098-105. <https://pubmed.ncbi.nlm.nih.gov/26813105/>

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.*