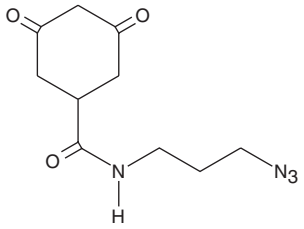
PRODUCT INFORMATION

DAz-1

Item No. 13173

CAS Registry No.:	1112977-84-0
Formal Name:	N-(3-azidopropyl)-3,5-dioxocyclohexane carboxamide
Synonym:	Click Tag™ DAz-1
MF:	$C_{10}H_{14}N_4O_3$
FW:	238.2
Purity:	≥98%
UV/Vis.:	λ_{max}: 256 nm
Supplied as:	A crystalline solid
Storage:	-20°C
Stability:	≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

DAz-1 is supplied as a crystalline solid. A stock solution may be made by dissolving the DAz-1 in the solvent of choice, which should be purged with an inert gas. DAz-1 is miscible in organic solvents such as ethanol, DMSO, and dimethyl formamide.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of DAz-1 can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of DAz-1 in PBS (pH 7.2) is approximately 20 mg/ml. We do not recommend storing the aqueous solution for more than one day.

Description

Redox-sensitive cysteine residues in proteins may function as sensors of reactive oxygen species (ROS) and also serve as molecular switches, activating or deactivating proteins, following a change in oxidation state. Modification of protein function through the reversible oxidation of cysteine is emerging as a biologically relevant signal transduction mechanism. Sulfenic acid is the initial oxidation product of cysteine by relatively mild oxidizing agents such as hydrogen peroxide. Sulfenic acid can be reduced back to the free thiol or be further oxidized to sulfinic and sulfonic acids.[1] DAz-1 is a cell-permeable chemical probe that reacts specifically with sulfenic acid-modified proteins.[2,3] The azido group of DAz-1 provides a method for selective conjugation to phosphine- or alkynyl- derivatized reagents, such as biotin or various fluorophores, for subsequent analysis of the labeled proteins. DAz-1 is a less sensitive probe for sulfenic acid detection compared to its analog DAz-2 (Item No. 13382).[4]

References

1. Reddie, K.G. and Carroll, K.S. Expanding the functional diversity of proteins through cysteine oxidation. *Curr. Opin. Chem. Biol.* **12(6)**, 746-754 (2008).
2. Seo, Y.H. and Carroll, K.S. Facile synthesis and biological evaluation of a cell-permeable probe to detect redox-regulated proteins. *Bioorg. Med. Chem. Lett.* **19(2)**, 356-359 (2009).
3. Reddie, K.G., Seo, Y.H., Muse, W.B., III, *et al.* A chemical approach for detecting sulfenic acid-modified proteins in living cells. *Mol. Biosyst.* **4(6)**, 521-531 (2008).
4. Leonard, S.E., Reddie, K.G., and Carroll, K.S. Mining the thiol proteome for sulfenic acid modifications reveals new targets for oxidation in cells. *ACS Chem. Biol.* **4(9)**, 783-799 (2009).

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