

PRODUCT INFORMATION



Citrulline-specific Probe-rhodamine

Item No. 16172

CAS Registry No.: 2309313-01-5
Formal Name: 3',6'-bis(dimethylamino)-3-oxo-N-((1-(1-oxo-1-((3-(2-oxoacetyl)phenyl)amino)propan-2-yl)-1H-1,2,3-triazol-4-yl)methyl)-3H-spiro[isobenzofuran-1,9'-xanthene]-5-carboxamide, monohydrate

Synonyms: Rhodamine Phenylglyoxal, Rh-PG

MF: C₃₉H₃₅N₇O₇ • H₂O

FW: 731.8

Purity: ≥90%

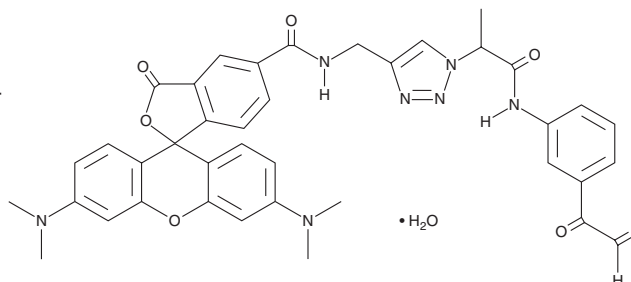
UV/Vis.: λ_{max}: 227, 355, 551 nm

Ex./Em. Max: 532/580 nm

Supplied as: A lyophilized solid

Storage: -20°C

Stability: ≥2 years



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

Laboratory Procedures

Citrulline-specific probe-rhodamine is supplied as a lyophilized solid. A stock solution may be made by dissolving the citrulline-specific probe-rhodamine in the solvent of choice, which should be purged with an inert gas. Citrulline-specific probe-rhodamine is soluble in organic solvents such as acetonitrile:water (2:1) and dimethyl formamide. The solubility of citrulline-specific probe-rhodamine in these solvents is approximately 1 mg/ml.

Description

Protein arginine deiminases (PADs) catalyze the posttranslational modification of arginine residues on proteins to form citrulline, which plays a large role in regulating gene expression.¹ Abnormally high PAD activity has been observed in a host of human diseases.^{1,2} Citrulline-specific probe-rhodamine is a highly sensitive, rhodamine phenylglyoxal-based fluorophore that specifically detects protein citrullination *via* a chemoselective reaction between glyoxal and citrulline.³ This chemical probe (comprised of a single isomer) is capable of reacting with any citrulline-containing protein and can be analyzed with fluorescent imaging (excitation 532 nm; emission 580 nm).³ When added at 100 μM for 30 minutes at acidic pH, this probe has a reported limit of detection of ~10 ng for citrullinated histone H3 and ~1 ng for autodeiminated PAD4.³

References

1. Jones, J.E., Causey, C.P., Knuckley, B., *et al.* Protein arginine deiminase 4 (PAD4): Current understanding and future therapeutic potential. *Curr. Opin. Drug Discov. Devel.* **12**(5), 616-627 (2009).
2. Hill, J.A., Southwood, S., Sette, A., *et al.* Cutting edge: The conversion of arginine to citrulline allows for a high-affinity peptide interaction with the rheumatoid arthritis-associated HLA-DRB1*0401 MHC class II molecule. *J. Immunol.* **171**, 538-541 (2003).
3. Bicker, K.L., Subramanian, V., Chumanevich, A.A., *et al.* Seeing citrulline: Development of a phenylglyoxal-based probe to visualize protein citrullination. *J. Am. Chem. Soc.* **134**(41), 17015-17018 (2012).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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