Citrulline-specific Probe

Item No. 16172

**Formal Name:**

\[3',6'-bis\text{[dimethylamino]}-3\text{-oxo-N-}((1\text{-}{(1\text{-oxo-1-}{(3\text{-){(2-oxoacetyl)}

phenyl}amino}propan-2-yl})\text{-}1H-1,2,3\text{-triazol-4-yl}methyl)}\text{-}3H-

spiro\text[isobenzofuran-1,9\text{-xanthene]}\text{-}5\text{-carboxamide monohydrate}\]

**Synonyms:**

Rhodamine Phenylglyoxal, Rh-PG

**MF:**

\(\text{C}_{39}\text{H}_{35}\text{N}_{7}\text{O}_{7} \cdot \text{H}_{2}\text{O}\)

**FW:**

731.8

**Purity:**

\(\geq 90\%\)

**UV/Vis.:**

\(\lambda_{\text{max}}: 227, 355, 551 \text{ nm}\)

**Ex./Em. Max:**

532/580 nm

**Supplied as:**

A lyophilized solid

**Storage:**

-20°C

**Stability:**

\(\geq 1 \text{ year}\)

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

### Laboratory Procedures

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