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Product Information

Anti-S-Nitroso-Cysteine (SNO-Cys)
produced in rabbit, IgG fraction of antiserum

Catalog Number **N5411**

Product Description

Anti-S-Nitroso-Cysteine (SNO-Cys) is produced in rabbit using as immunogen S-nitrosylated cysteine-KLH. Whole antiserum is purified to provide the IgG fraction of antiserum

Anti-S-Nitroso-Cysteine (SNO-Cys) recognizes S-nitrosylated proteins. Applications include immuno-blotting, ELISA, and immunocytochemistry. The antibody specifically recognizes S-nitroso-cysteine-BSA in immunoblotting and ELISA, but does not recognize unmodified BSA.

Nitric oxide (NO), generated by cell type-specific NO-synthase (NOS) isoforms, is a freely diffusible intercellular messenger that functions in target cells in NOS-dependent signaling, including the generation of endothelium-derived relaxing factor (EDRF) via eNOS, synaptic transmission and plasticity via bNOS, and antimicrobial activity via iNOS. S-nitrosylation of cysteine thiols in proteins by the highly labile NO radical has been identified as a important effector of NO-related bioactivity both in NOS-containing cells and intercellular signaling, regulating NO-derived signal transduction pathways.[1]

All mammalian cells contain low levels of nitrosylated proteins that are thought to be regulated by S-nitrosylation and denitrosylation. S-nitrosylation of proteins serves as a ubiquitous post-translational modification that dynamically regulates a broad functional spectrum of proteins.[1-4] The majority of these proteins are regulated by S-nitrosylation on a single critical cysteine residue within an acidic/basic or hydrophobic structural motif, that may also be subject to oxygen- or glutathione-dependent modification, suggesting that S-nitrosylation is a prototypic redox signal. NO can act via cGMP-dependent and independent pathways. S-nitrosylation of cysteine thiols has been shown to contribute to the cGMP-independent effects of NO. NO-sensitive ion channels, including the cardiac and skeletal muscle ryanodine receptor (RyR1), N-methyl-D-aspartate receptor (NMDAR) complex, and cyclic-nucleotide gated ion channel, are modulated by S-nitrosylation of critical cysteine residues.[5-7]

S-nitrosylation of capsase-3 inhibits apoptosis signaling.[8] S-nitrosylation activates matrix metalloproteinase-9 (MMP-9) and induces neuronal apoptosis.[9] The small G-protein p21Ras and Jun kinase are regulated by S-nitrosylation.[10,11] The activity of transcription factors such as NFκB, c-jun, and c-fos is modulated by S-nitrosylation.[12] In addition, the formation of S-nitrosylated glutathione (GSNO), has been proposed to be one of the major storage forms of NO *in vivo*.[13]

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

Store at –20 °C. For continuous use, store at 2-8 °C for up to one month. For prolonged storage, freeze in working aliquots at –20 °C. Repeated freezing and thawing, or storage in frost-free freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a minimum working antibody dilution of 1:2,000- 1:4,000 is recommended using S-nitrosylated cysteine-BSA.

Indirect ELISA: a minimum working antibody dilution of 1:500 is recommended using S-nitrosylated cysteine-KLH.

Immunocytochemistry: a minimum working antibody dilution of 1:100 is recommended using bovine endothelial cells treated with Ca^{2+} ionophore A23187.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining the optimal working dilutions by titration.

References

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