

Nitrotyrosine (HM11): sc-32731

BACKGROUND

Nitrotyrosine is a marker for inflammation and nitric oxide (NO) production and is formed in the presence of the active metabolite NO. Because nitrotyrosine is a stable product of multiple pathways, such as the formation of peroxynitrite, its plasma concentration may be a useful determinant of NO-dependent damage *in vivo*. Nitrotyrosine has been detected in inflammatory processes such as septic shock, rheumatoid arthritis, celiac disease, atherosclerotic plaques and chronic renal failure.

REFERENCES

1. ter Steege, J., et al. 1997. Presence of inducible nitric oxide synthase, nitrotyrosine, CD68, and CD14 in the small intestine in celiac disease. *Lab. Invest.* 77: 29-36.
2. Buijn, L.I., et al. 1997. Elevated free nitrotyrosine levels, but not protein-bound nitrotyrosine or hydroxyl radicals, throughout amyotrophic lateral sclerosis (ALS)-like disease implicate tyrosine nitration as an aberrant *in vivo* property of one familial ALS-linked superoxide dismutase 1 mutant. *Proc. Natl. Acad. Sci. USA* 94: 7606-7611.
3. ter Steege, J.C., et al. 1998. Nitrotyrosine in plasma of celiac disease patients as detected by a new sandwich ELISA. *Free Radic. Biol. Med.* 25: 953-963.
4. Viera, L., et al. 1999. Immunohistochemical methods to detect nitrotyrosine. *Methods Enzymol.* 301: 373-381.
5. Xu, J., et al. 2001. iNOS and nitrotyrosine expression after spinal cord injury. *J. Neurotrauma* 18: 523-532.
6. Girault, I., et al. 2001. Immunodetection of 3-nitrotyrosine in the liver of zymosan-treated rats with a new monoclonal antibody: comparison to analysis by HPLC. *Free Radic. Biol. Med.* 31: 1375-1387.
7. Ogino, K., et al. 2002. Immunohistochemical artifact for nitrotyrosine in eosinophils or eosinophil containing tissue. *Free Radic. Res.* 36: 1163-1170.

SOURCE

Nitrotyrosine (HM.11) is a mouse monoclonal antibody raised against 3-Nitrotyrosine.

PRODUCT

Each vial contains 100 µg IgG_{2b} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Nitrotyrosine (HM.11) is recommended for detection of nitrosylated tyrosine containing proteins by Western Blotting (starting dilution 1:10, dilution range 1:1-1:100), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

SELECT PRODUCT CITATIONS

1. Cigremis, Y., et al. 2009. The effects of acute acetaminophen toxicity on hepatic mRNA expression of SOD, CAT, GSH-Px, and levels of peroxynitrite, nitric oxide, reduced glutathione, and malondialdehyde in rabbit. *Mol. Cell. Biochem.* 323: 31-38.
2. Yao, D. and Brownlee, M. 2010. Hyperglycemia-induced reactive oxygen species increase expression of the receptor for advanced glycation end products (RAGE) and RAGE ligands. *Diabetes* 59: 249-255.
3. Moreno, B., et al. 2011. Systemic inflammation induces axon injury during brain inflammation. *Ann. Neurol.* 70: 932-942.
4. Terra, V.A., et al. 2012. Nitric oxide is responsible for oxidative skin injury and modulation of cell proliferation after 24 hours of UVB exposures. *Free Radic. Res.* 46: 872-882.
5. Bayliss, C.R., et al. 2013. Myofibrillar Ca²⁺ sensitivity is uncoupled from troponin I phosphorylation in hypertrophic obstructive cardiomyopathy due to abnormal troponin T. *Cardiovasc. Res.* 97: 500-508.
6. Duong-Quy, S., et al. 2014. Early inhaled nitric oxide at high dose enhances rat lung development after birth. *Nitric Oxide* 38: 8-16.
7. Veeranki, S. and Tyagi, S.C. 2015. Mechanisms of hyperhomocysteinemia induced skeletal muscle myopathy after ischemia in the CBS^{-/-} mouse model. *Int. J. Mol. Sci.* 16: 1252-1265.
8. Bombicino, S.S., et al. 2016. Diabetes impairs heart mitochondrial function without changes in resting cardiac performance. *Int. J. Biochem. Cell Biol.* 81: 335-345.
9. Lee, B.W., et al. 2018. Exogenous recombinant human thioredoxin-1 prevents acetaminophen-induced liver injury by scavenging oxidative stressors, restoring the thioredoxin-1 system and inhibiting receptor interacting protein-3 overexpression. *J. Appl. Toxicol.* 38: 1008-1017.
10. Triquell, M.F., et al. 2018. Nitric oxide synthase and oxidative-nitrosative stress play a key role in placental infection by *Trypanosoma cruzi*. *Am. J. Reprod. Immunol.* 80: e12852.
11. Ma, M.W., et al. 2018. Deletion of NADPH oxidase 4 reduces severity of traumatic brain injury. *Free Radic. Biol. Med.* 117: 66-75.
12. Prince, P.D., et al. 2020. (-)-Epicatechin administration protects kidneys against modifications induced by short-term L-NAME treatment in rats. *Food Funct.* 11: 318-327.
13. Pasqual-Melo, G., et al. 2020. The progression of metastatic melanoma augments a pro-oxidative milieu locally but not systemically. *Pathol. Res. Pract.* 216: 153218.

CONJUGATES

See **Nitrotyrosine (39B6): sc-32757** for Nitrotyrosine antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor[®] 488, 546, 594, 647, 680 and 790.