COSMO BIO CO., LTD.
Inspiration for Life Science

MONOCLONAL ANTIBODY

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Catalog No. KMU-M01

Anti-Nitroguanosine monoclonal antibody

BACKGROUND

8-Nitroguanosine is a nitrated nucleic acid which is formed by peroxynitrite, myeloperoxidase, nitrite, and peroxide. It is known that the nitration of guanine is enhanced in virus infection[1, 2], bacterial infection[3, 4], inflammatory disease[5], cancers[5], and diseases associated with smoking[6]. 8-nitroguanosine is thought to be one of the makers of DNA damage caused by oxidative stress. Cyclic GMP (cGMP) is one of the important substances for the signal transfer. On the other hand, 8-Nitro-cGMP (nitrated cGMP) has been identified *in vivo*[3]. Therefore, 8-Nitro-cGMP can potentially act as a mediator for reactive oxygen signaling[3, 7-9]. Although the product, Anti-Nitroguanosine monoclonal antibody (NO_2G52), does not cross-react with normal nucleotide bases, it selectively reacts with nitro functionalized nucleotides such as nitro-cGMP, nitro-GMP, and nitro-GTP. Therefore, Anti-Nitroguanosine monoclonal antibody is universal antibody of nitrated guanine which modified 8th position of guanine with nitro group. NO_2G52 is commonly used for immunostaining. In addition, NO_2G52 can potentially utilized for affinity purification of nitroguanine derivative[3,6].

Product type	Primary antibodies
Host	Mouse (BALB/c)
Form	Liquid 1 mg/ml PBS solution; 0.1% ProClin as a preservative
Volume	200 ug
Clone	NO_2G52
Isotype	IgG1

Application notes	IHC, ELISA Immunohistochemistry, 10 ug/ml ELISA, 1 ug/ml Optimal dilutions/concentrations should be determined by the end user.
Cross reactivity	Strongly reacts (10 umol/l) 8-NO_2-guanosine 8-NO_2-guanine Slightly cross-reacts (>1 mmol/l) 8-Br-guanosine 8-Br-guanine 8-Cl-guanine

No cross-reaction

guanosine, guanine, 8-OH-guanine, 8-OH-deoxyguanosine, xanthine, adenine, adenosine, thymine, deoxythymidine, uracil, uridine, 3-NO_2-tyrosine, 2-NO_2-imidazole, cytosine

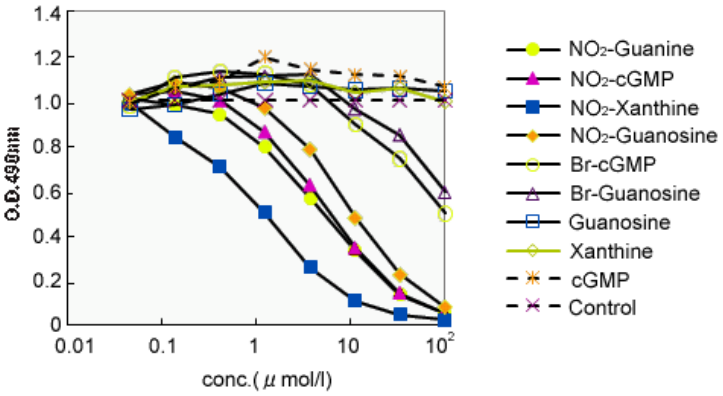

Fig. 1. The reactivity of Monoclonal Antibody(NO_2G52).

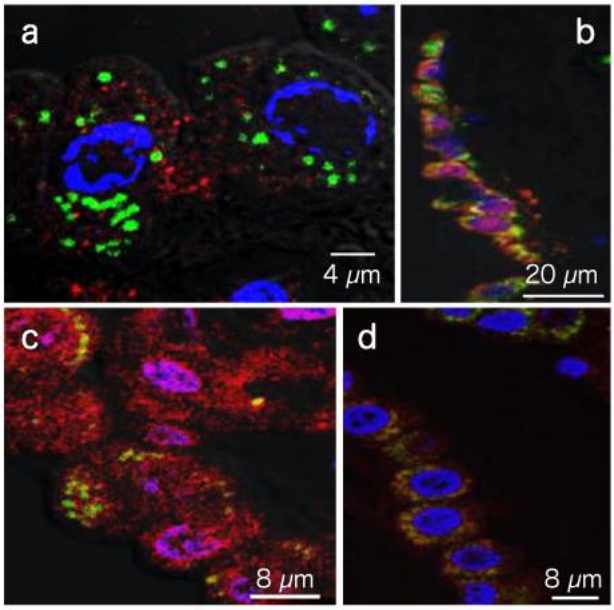

Fig. 2. Production of 8-nitroguanine by airway epithelial cell with Idiopathic Fibrosis (IPS).
A. 8-nitroguanine (green) and iNOS (red) **B.** Bright-field **C.** 8-nitroguanine (green) and 8-oxoguanine (Red) **D.** 8-nitroguanine (green) and mitochondria (red)

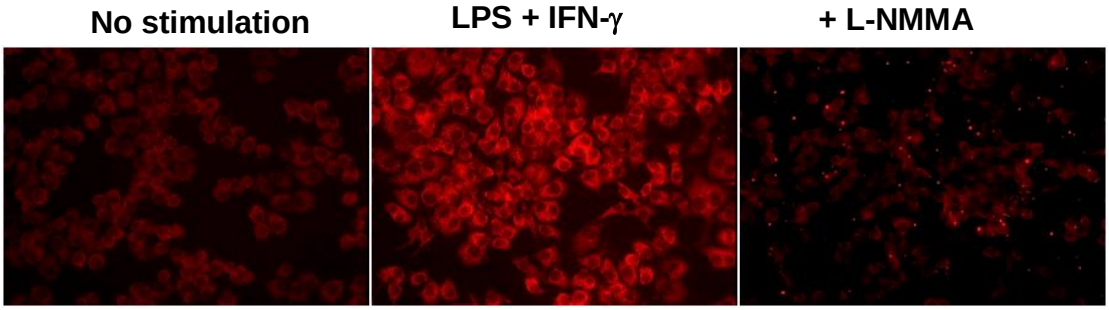

Fig. 3. Endogenous guanine nitration in RAW 264.7 cells, a murine macrophage cell line

Storage

Store below -20°C (below -70°C for prolonged storage).
Aliquot to avoid cycles of freeze/thaw.

References

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