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Inspiration for Life Science

POLYCLONAL ANTIBODY

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Catalog No. KMU-P01

Anti-Nitroguanosine polyclonal 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]. Anti-Nitroguanosine polyclonal antibody, does not cross-react with normal nucleobases, it selectively reacts with nitrated nucleic acid such as nitroguanosine, nitroguanine, and nitroxanthine. Therefore, Anti-Nitroguanosine polyclonal antibody is universal antibody of nitrated guanine which modified 8th position of guanine with nitro group. Anti-Nitroguanosine polyclonal antibody has very high affinity for 8-nitroguanine and 8-nitroguanosine, but it does not cross-react with normal guanosine, guanine, 8-hydroxyguanine or 3-nitrotyrosine. Since this antibody was prepared using rabbits, it can be used for immuno-histostaining of rodent tissues.

Product type	Primary antibodies
Host	Rabbit
Form	Liquid
	200 ug/ml PBS solution; 0.1% ProClin as a preservative
Volume	200 ug

Application notes	IHC, ELISA
	Immunohistochemistry, 10 ug/ml
	ELISA, 10 ug/ml
	Optimal dilutions/concentrations should be determined by the end user.
Cross reactivity	Strongly reacts (1 umol/l)
	8-NO_2-guanosine, 8-NO_2-guanine
	No cross-reaction
	guanosine, guanine, 8-OH-guanine, 3-NO_2-tyrosine

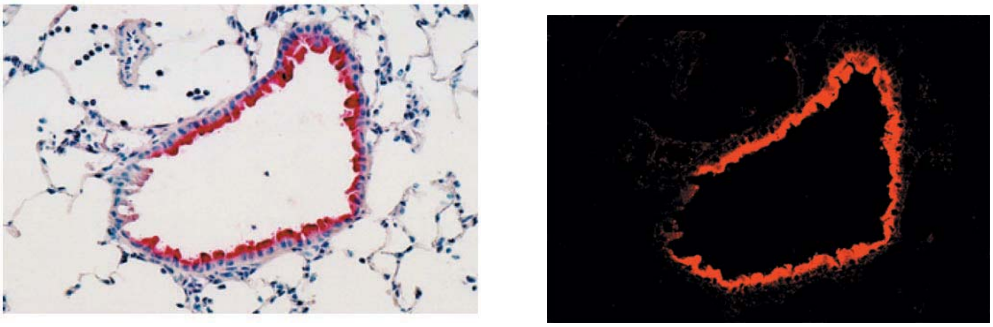

Fig. 1. Immunostaining example of influenza virus-infected mouse lung epithelial cell.

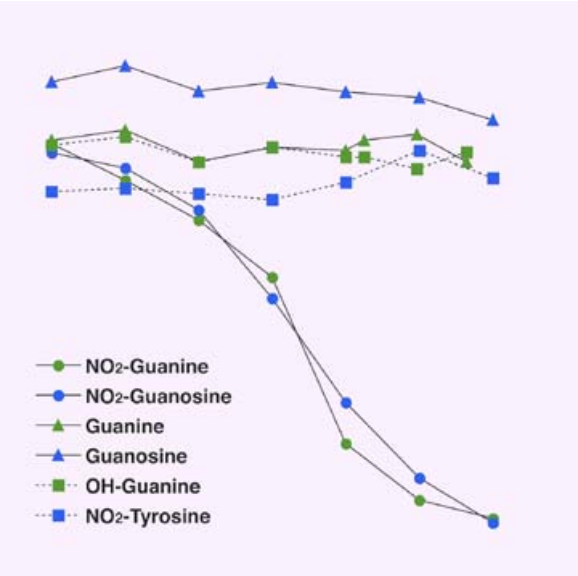

Fig. 2. Reactivity of Aniti-Nitroguanosine polyclonal antibody.

Storage

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

References

1) T. Akaike, S. Okamoto, T. Sawa, J. Yoshitake, F. Tamura, K. Ichimori, K. Miyazaki, K. Sasamoto and H. Maeda, 8-nitroguanosine formation in viral pneumonia and its implication for pathogenesis, *Proc. Natl. Acad. Sci. USA*, ***100***, 685-690 (2003).

2) J. Yoshitake, T. Akaike, T. Akuta, F. Tamura, T. Ogura, H. Esumi, and H. Maeda, Nitric oxide as an endogenous mutagen for Sendai virus without antiviral activity, *J. Virol.*, ***78***, 8709-8719 (2004).

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5) Y. Terasaki, T. Akuta, M. Terasaki, T. Sawa, T. Mori, T. Okamoto, M. Ozaki, M. Takeya and T. Akaike, Guanine nitration in idiopathic pulmonary fibrosis and its implication for carcinogenesis, *Am. J. Respir. Crit. Care. Med.*, ***174***, 665-673 (2006).
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