

PRODUCT INFORMATION



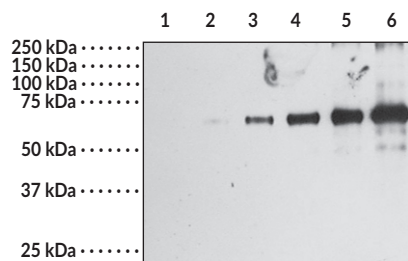
Nitrotyrosine Polyclonal Antibody

Item No. 10189540

Overview and Properties

Contents:	This vial contains 500 µl of hapten affinity-purified polyclonal antibody.
Synonyms:	3-Nitrotyrosine, NT
Immunogen:	Peroxynitrite-treated keyhole limpet hemocyanin
Species Reactivity:	(+) Species independent
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥3 years
Storage Buffer:	PBS, pH 7.2, with 50% glycerol and 0.02% sodium azide
Host:	Rabbit
Applications:	Western blot (WB); the recommended starting dilution is 1:200 for WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Image



Lane 1: BSA (1 µg)
Lane 2: Nitrotyrosine BSA (0.01 µg)
Lane 3: Nitrotyrosine BSA (0.025 µg)
Lane 4: Nitrotyrosine BSA (0.05 µg)
Lane 5: Nitrotyrosine BSA (0.1 µg)
Lane 6: Nitrotyrosine BSA (0.2 µg)

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user [must](#) review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

Nitrotyrosine is a post-translational modification that is formed by the nitration of tyrosine.¹ Under conditions of oxidative stress, tyrosine is oxidized by reactive oxygen species (ROS) or, in the presence of hydrogen peroxide and nitrite, by myeloperoxidase (MPO) to yield a tyrosine radical that reacts with reactive nitrogen species (RNS), such as nitric oxide or peroxynitrite, to form nitrotyrosine. It exists in a free or protein-bound form and is commonly used as a marker of nitrosative or oxidative stress.² Nitrotyrosine residues have been found in a variety of proteins, including LDL, surfactant protein A, angiotensin II, and human and bovine serum albumin.³ Free nitrotyrosine production induced by peroxynitrite is inhibited by the polyphenols epicatechin gallate, gallic acid, catechin, or epicatechin in cell-free assays, as well as in aortic rings isolated from normotensive and spontaneously hypertensive rats administered the antioxidant N-acetyl-cysteine (NAC; Item No. 20261).^{4,5} Nitrotyrosine levels are increased in the affected tissues of numerous pathological conditions, including atherosclerosis, cancer, ulcerative colitis, Alzheimer's disease, and Parkinson's disease.³ Autoantibodies that recognize nitrotyrosinated proteins are increased in the synovium of patients with rheumatoid arthritis and are positively correlated with joint and tendon inflammation.¹ Cayman's Nitrotyrosine Polyclonal Antibody can be used for Western blot (WB) applications.

References

1. Smallwood, M.J., Nissim, A., Knight, A.R., *et al.* Oxidative stress in autoimmune rheumatic diseases. *Free Radic. Biol. Med.* **125**, 3-14 (2018).
2. Teixeira, D., Fernandes, R., Prudêncio, C., *et al.* 3-Nitrotyrosine quantification methods: Current concepts and future challenges. *Biochimie* **125**, 1-11 (2016).
3. Oldreive, C. and Rice-Evans, C. The mechanisms for nitration and nitrotyrosine formation *in vitro* and *in vivo*: Impact of diet. *Free Radic. Res.* **35(3)**, 215-231 (2001).
4. Pannala, A.S., Rice-Evans, C.A., Halliwell, B., *et al.* Inhibition of peroxynitrite-mediated tyrosine nitration by catechin polyphenols. *Biochem. Biophys. Res. Commun.* **232(1)**, 164-168 (1997).
5. Cabassi, A., Dumont, E.C., Girouard, H., *et al.* Effects of chronic N-acetylcysteine treatment on the actions of peroxynitrite on aortic vascular reactivity in hypertensive rats. *J. Hypertens.* **19(7)**, 1233-1244 (2001).

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