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Anti-nNOS Antibody

Catalog # AN2043

Product Information

Application	WB
Primary Accession	P29475
Host	Rabbit
Clonality	Rabbit Polyclonal
Isotype	IgG
Calculated MW	160970

Additional Information

Gene ID	4842
Other Names	neuronal nitric oxide synthase, BNOS, Constitutive NOS, IHPS1, N-NOS, Nitric oxide synthase 1, NOS type I, NC-NOS
Dilution	WB~~1:1000
Storage	Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	Anti-nNOS Antibody is for research use only and not for use in diagnostic or therapeutic procedures.
Shipping	Blue Ice

Background

Nitric oxide (NO) is a colorless, free radical gas that carries a variety of messages between cells. Vasorelaxation, [[URL:https://www.novusbio.com/research-areas/neuroscience/neurotransmission.html]][[Caption:neurotransmission]] and cytotoxicity can all be potentiated through cellular response to NO. NO production is mediated by members of the nitric oxide synthase (NOS) family including the two constitutive isoforms: brain, bNOS, or neuronal NOS, [[URL:https://www.novusbio.com/common-name/nnos]][[Caption:nNOS]] (type I) and endothelial cell NOS, [[URL:https://www.novusbio.com/common-name/enos]][[Caption:eNOS]] (type III); along with the inducible isoform, [[URL:https://www.novusbio.com/common-name/inos]][[Caption:iNOS]] (type II). NOS catalyzes the oxidization of L-arginine to produce L-citrulline and NO, requiring the cofactors [[URL:https://www.novusbio.com/common-name/calmodulin]][[Caption:calmodulin]], nicotinamide adenine dinucleotide phosphate (NADPH), flavin adenine dinucleotide (FAD), and flavin mononucleotide (FMN), [[URL:https://www.novusbio.com/common-name/heme]][[Caption:heme]], and [[URL:https://www.novusbio.com/common-name/tetrahydrobiopterin]][[Caption:tetrahydrobiopterin]] (1).

The 131 kDa enzyme, iNOS, is found in a variety of cell types including macrophages, hepatocytes, synoviocytes, and smooth muscle cells. While constitutively expressed in kidneys, in other tissues iNOS is induced by bacterial lipopolysaccharides (LPS), growth factors, and [[URL:https://www.novusbio.com/research-areas/immunology/chemokines-cytokines]][[Caption:cytokines]]

such as [[URL:https://www.novusbio.com/common-name/ifn-gamma]][[Caption:IFN-gamma]], [[URL:https://www.novusbio.com/common-name/tnf-alpha]][[Caption:TNF]], [[URL:https://www.novusbio.com/common-name/il-1-beta-il-1f2]][[Caption:IL-1]] and [[URL:https://www.novusbio.com/common-name/il-2]][[Caption:IL-2]]. iNOS is not regulated by the level of intracellular Ca2+ and is constantly active as a dimer when expressed. iNOS activity is elevated in a variety of diseases including atherosclerosis, heart failure, sepsis, solid tumors, and [[URL:https://www.novusbio.com/research-areas/lipid-and-metabolism-diabetes-research.html]][[Caption:type 2 diabetes]]. Acting as a critical mediator of [[URL:https://www.novusbio.com/research-areas/immunology/inflammation]][[Caption:inflammation]] and [[URL:https://www.novusbio.com/research-areas/apoptosis]][[Caption:apoptosis]], iNOS inhibitors have been shown to alleviate obesity and stress inducted insulin resistance in mouse models (2,3).

References

1. Forstermann U, and Sessa WC. (2012) Nitric oxide synthases: regulation and function. Eur Heart J. 33(7): 829-837. PMID: 21890489

2. Aktan F. (2004) iNOS-mediated nitric oxide production and its regulation. Life Sci. 75(6):639-53. PMID: 15172174

3. Cinelli MA, Do HT, Miley GP, Silverman RB. (2020) Inducible nitric oxide synthase: Regulation, structure, and inhibition. Med Res Rev. 40(1):158-189. PMID: 31192483