abcam

Product datasheet

Recombinant rat nNOS (neuronal) protein ab59110

Overview

Product name	Recombinant rat nNOS (neuronal) protein
Protein length	Full length protein

Description

Nature	Recombinant
Source	Baculovirus infected Sf9 cells

Amino Acid Sequence

Species	Rat

Specifications

Our Abpromise guarantee covers the use of **ab59110** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Biological activity	Specific Activity: >200 units/mg protein. The activity of recombinant rat nNOS (neuronal) is determined by an oxyhemoglobin assay that measures the reaction of nitric oxide with oxyhemoglobin to yield methemoglobin. One unit of enzyme produces 1 nmole of nitric oxide per minute at 37°C in 50 mM HEPES, pH 7.4, containing 5µM oxyhemoglobin, 1 mM $CaCl_2$, 20µg/ml calmodulin, 0.1 mM NADPH, 50µM arginine, 12µM tetrahydrobiopterin, and 170µM DTT. nNOS (neuronal) is calcium/ calmodulin dependent and has a K_m for arginine of approximately 2µM.
Purity	> 95 % SDS-PAGE. Produced in SF9 cells from a Baculovirus over-expression system. Purity of the protein is >95%.
Form	Liquid
Additional notes	The enzyme loses approximately 40% of its activity during a single freeze thaw cycle. During use, keep the solution on ice at all times since the enzyme is unstable at higher temperatures. Specific Activity: >300 units/mg protein. The activity of recombinant rat nNOS (neuronal) is determined by an oxyhemoglobin assay that measures the reaction of nitric oxide with oxyhemoglobin to yield methemoglobin. One unit of enzyme produces 1 nmole of nitric oxide per minute at 37°C in 50 mM HEPES, pH 7.4, containing 5µM oxyhemoglobin, 1 mM $CaCl_2$, 20µg/ml calmodulin, 0.1 mM NADPH, 50µM arginine, 12µM tetrahydrobiopterin, and 170µM DTT. nNOS (neuronal) is calcium/ calmodulin dependent and has a K_m for arginine of

approximately 2μM.

Preparation and Storage

Stability and Storage

Shipped at 4°C. Upon delivery aliquot. Store at -80°C. Avoid freeze / thaw cycle.

Preservative: None
Constituents: 1μM Tetrahydrobiopterin, 20% Glycerol, 50mM HEPES, 100mM Sodium chloride, pH 7.4

This product is an active protein and may elicit a biological response in vivo, handle with caution.

General Info

Function

Produces nitric oxide (NO) which is a messenger molecule with diverse functions throughout the body. In the brain and peripheral nervous system, NO displays many properties of a neurotransmitter. Probably has nitrosylase activity and mediates cysteine S-nitrosylation of cytoplasmic target proteins such SRR.

Tissue specificity

Isoform 1 is ubiquitously expressed: detected in skeletal muscle and brain, also in testis, lung and kidney, and at low levels in heart, adrenal gland and retina. Not detected in the platelets. Isoform 3 is expressed only in testis. Isoform 4 is detected in testis, skeletal muscle, lung, and kidney, at low levels in the brain, but not in the heart and adrenal gland.

Sequence similarities

Belongs to the NOS family.
Contains 1 FAD-binding FR-type domain.
Contains 1 flavodoxin-like domain.
Contains 1 PDZ (DHR) domain.

Domain

The PDZ domain in the N-terminal part of the neuronal isoform participates in protein-protein interaction, and is responsible for targeting nNos to synaptic membranes in muscles. Mediates interaction with VAC14.

Post-translational modifications

Ubiquitinated; mediated by STUB1/CHIP in the presence of Hsp70 and Hsp40 (in vitro).

Cellular localization

Cell membrane > sarcolemma. Cell projection > dendritic spine. In skeletal muscle, it is localized beneath the sarcolemma of fast-twitch muscle fiber by associating with the dystrophin glycoprotein complex. In neurons, enriched in dendritic spines.

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