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AANAT Rabbit pAb

Catalog # AP99967

Product Information

Application	WB, IHC-P, IHC-F, IF
Primary Accession	Q16613
Other Accession	Q16613
Reactivity	Rat, Mouse
Predicted	Human, Dog
Host	Rabbit
Clonality	Polyclonal
Calculated MW	23344
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human AANAT
Epitope Specificity	141-207/207
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Belongs to the acetyltransferase family. AANAT subfamily.Contains 1 N-acetyltransferase domain.
SUBUNIT	Monomer (By similarity). Interacts with several 14-3-3 proteins, including YWHAB, YWHAE, YWHAG and YWHAZ, preferentially when phosphorylated at Thr-31. Phosphorylation on Ser-205 also allows binding to YWHAZ, but with lower affinity. The interaction with YWHAZ considerably increases affinity for arylalkylamines and acetyl-CoA and protects the enzyme from dephosphorylation and proteasomal degradation (By similarity). It may also prevent thiol-dependent inactivation (By similarity).
Post-translational modifications	cAMP-dependent phosphorylation on both N-terminal Thr-31 and C-terminal Ser-205 regulates AANAT activity by promoting interaction with 14-3-3 proteins.
DISEASE	Delayed sleep phase syndrome (DSPS) [MIM:614163]: A circadian rhythm sleep disorder characterized by sleep-onset insomnia and difficulty in awakening at the desired time. Patients with DSPS have chronic difficulty in adjusting their sleep-onset and wake-up times to occupational, school, and social activities. Note=Disease susceptibility may be associated with variations affecting the gene represented in this entry. Susceptibility to delayed sleep phase syndrome can be conferred by variant Thr-129. Thr-129 shows a significantly higher frequency in affected individuals than in healthy controls.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	The protein encoded by this gene belongs to the acetyltransferase superfamily. It is the penultimate enzyme in melatonin synthesis and controls the night/day rhythm in melatonin production in the vertebrate pineal gland. Melatonin is essential for the function of the circadian clock that influences activity and sleep. This enzyme is regulated by cAMP-dependent phosphorylation that promotes its interaction with 14-3-3 proteins and thus protects the enzyme against proteasomal degradation. This gene may contribute to numerous genetic diseases such as delayed sleep phase syndrome. Alternatively spliced transcript variants encoding different

isoforms have been found for this gene. [provided by RefSeq].

Additional Information

Gene ID	15
Other Names	CK820_G0040892; DSPS; SNAT; AA-NAT; Nat-2; Nat4; SNAT_CHICK; AANAT; Serotonin acetylase; Aralkylamine N-acetyltransferase (AA-NAT); 2.3.1.87; SNAT_PANTR; SNAT_HUMAN; SNAT_MOUSE; SNAT_RAT; aralkylamine N-acetyltransferase; arylalkylamine N-acetyltransferase; serotonin N-acetyltransferase
Dilution	WB=1:500-2000,IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	AANAT
Synonyms	SNAT
Function	Controls the night/day rhythm of melatonin production in the pineal gland. Catalyzes the N-acetylation of serotonin into N- acetylserotonin, the penultimate step in the synthesis of melatonin.
Cellular Location	Cytoplasm.
Tissue Location	Highly expressed in pineal gland and at lower levels in the retina. Weak expression in several brain regions and in the pituitary gland.

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