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[Primary Antibody]

Rabbit Anti-phospho-AANAT (Thr29)antibody

Catalog Number: SL11448R

FOR RESEARCH USE ONLY

[DATASHEET]

Host:	Rabbit
Isotype:	IgG
Clonality:	Polyclonal
Target:	phospho-AANAT (Thr29)
Immunogen:	KLH conjugated synthesised phosphopeptide derived from human AANAT around the phosphorylation site of Thr29: RH(p-T)LP
Purification:	affinity purified by Protein A
Concentration:	1mg/ml
Storage:	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol. Shipped at 4℃. Store at -20 °C for one year. Avoid repeated freeze/thaw cycles.
Applications:	IHC-P=1:100-500 IHC-F=1:100-500 ICC/IF=1:100-500 IF=1:100-500 ELISA=1:5000-10000 （Paraffin sections need antigen repair） not yet tested in other applications. optimal dilutions/concentrations should be determined by the end user.
Reactivity:	(predicted: Human, Mouse, Rat, Chicken, Dog, Pig)
Predicted MW.:	23kDa
Subcellular Location:	cytoplasmic
Background:	Arylalkylamine N-acetyltransferase belongs to the superfamily of acetyltransferases. 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 seasonal reproduction, modulates the function of the circadian clock in the suprachiasmatic nucleus, and influences activity and sleep. This enzyme is rapidly inactivated when animals are exposed to light at night. This protein is 80% identical to sheep and rat AA-NAT. Arylalkylamine N-acetyltransferase may contribute a multifactorial genetic diseases such as altered behavior in sleep/wake cycle. **Function:** Controls the night/day rhythm of melatonin production in the pineal

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	gland. Catalyzes the N-acetylation of serotonin into N-acetylserotonin, the penultimate step in the synthesis of melatonin. **Subunit:** Monomer. 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. It may also prevent thiol-dependent inactivation. **Subcellular Location:** Cytoplasmic **Tissue Specificity:** Highly expressed in pineal gland and at lower levels in the retina. Weak expression in several brain regions and in the pituitary gland. **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. **Similarity:** Belongs to the acetyltransferase family. AANAT subfamily. Contains 1 N-acetyltransferase domain. **Database links:** **Entrez Gene:** 503504 Chimpanzee **Entrez Gene:** 15 Human **Entrez Gene:** 11298 Mouse **Entrez Gene:** 25120 Rat **SwissProt:** P79774 Chicken **SwissProt:** Q5IS55 Chimpanzee **SwissProt:** Q16613 Human **SwissProt:** O88816 Mouse **SwissProt:** Q64666 Rat **Unigene:** 431417 Human **Unigene:** 418559 Mouse **Unigene:** 42233 Mouse **Unigene:** 88180 Rat

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