

AANAT (P-20): sc-55612

BACKGROUND

AANAT (arylalkylamine N-acetyltransferase), also called serotonin N-acetyltransferase (SNAT) or serotonin acetylase, is a member of the acetyltransferase superfamily. It is almost exclusively expressed in the pineal gland and the retina. AANAT activity is high at night and low during the day due to the 10- to 100-fold increase in the amount of active AANAT at night. Retinal exposure to light causes cAMP levels to decrease in photoreceptor cells and, as a result, AANAT is targeted for degradation by proteasomal proteolysis. AANAT plays an important role as the rate limiting enzyme in melatonin synthesis. It is responsible for catalyzing the N-acetylation of serotonin to N-acetylserotonin, which is then converted to melatonin by hydroxyindole-O-methyltransferase. Melatonin is an important hormone that is involved in many physiological processes including immune function, seasonal reproduction, retinal physiology and circadian entrainment.

REFERENCES

1. Shi, Q., et al. 2004. Embryonic and post-embryonic expression of arylalkylamine N-acetyltransferase and melatonin receptor genes in the eye and brain of chum salmon (*Oncorhynchus keta*). Gen. Comp. Endocrinol. 136: 311-321.
2. Klein, D.C. 2006. Evolution of the vertebrate pineal gland: the AANAT hypothesis. Chronobiol. Int. 23: 5-20.
3. Simonneaux, V., et al. 2006. Rat and Syrian hamster: two models for the regulation of AANAT gene expression. Chronobiol. Int. 23: 351-359.
4. Ho, A.K., et al. 2006. Opposite effects of proteasome inhibitors in the adrenergic induction of arylalkylamine N-acetyltransferase in rat pinealocytes. Chronobiol. Int. 23: 361-367.
5. Tosini, G., et al. 2006. Regulation of arylalkylamine N-acetyltransferase (AANAT) in the retina. Chronobiol. Int. 23: 381-391.
6. Coon, S.L. and Klein, D.C. 2006. Evolution of arylalkylamine N-acetyltransferase: emergence and divergence. Mol. Cell. Endocrinol. 252: 2-10.

CHROMOSOMAL LOCATION

Genetic locus: AANAT (human) mapping to 17q25.1; Aanat (mouse) mapping to 11 E2.

SOURCE

AANAT (P-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of AANAT of mouse origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-55612 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

AANAT (P-20) is recommended for detection of AANAT of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

AANAT (P-20) is also recommended for detection of AANAT in additional species, including equine and canine.

Suitable for use as control antibody for AANAT siRNA (h): sc-61928, AANAT siRNA (m): sc-61929, AANAT shRNA Plasmid (h): sc-61928-SH, AANAT shRNA Plasmid (m): sc-61929-SH, AANAT shRNA (h) Lentiviral Particles: sc-61928-V and AANAT shRNA (m) Lentiviral Particles: sc-61929-V.

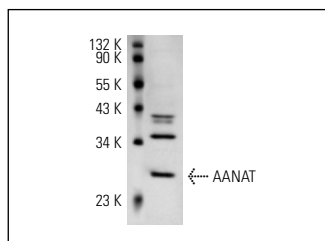
Molecular Weight of AANAT: 23 kDa.

Positive Controls: Y79 cell lysate: sc-2240.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



AANAT (P-20): sc-55612. Western blot analysis of AANAT expression in Y79 whole cell lysate.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.