

GNAT3 Antibody (Center)
Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP10484c**Specification**

GNAT3 Antibody (Center) - Product Information

Application	WB, IHC-P, FC,E
Primary Accession	A8MTJ3
Other Accession	NP_001095856.1
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	40357
Antigen Region	78-105

GNAT3 Antibody (Center) - Additional Information**Gene ID** 346562**Other Names**

Guanine nucleotide-binding protein G(t) subunit alpha-3, Gustducin alpha-3 chain, GNAT3

Target/Specificity

This GNAT3 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 78-105 amino acids from the Central region of human GNAT3.

Dilution

WB~~1:1000
IHC-P~~1:50~100
FC~~1:10~50

Format

Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.

Storage

Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions

GNAT3 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

GNAT3 Antibody (Center) - Protein Information**Name** GNAT3

Function Guanine nucleotide-binding protein (G protein) alpha subunit playing a prominent role in bitter and sweet taste transduction as well as in umami (monosodium glutamate, monopotassium glutamate, and inosine monophosphate) taste transduction (PubMed:[38600377](#), PubMed:[38776963](#)). Transduction by this alpha subunit involves coupling of specific cell- surface receptors with a cGMP-phosphodiesterase; Activation of phosphodiesterase lowers intracellular levels of cAMP and cGMP which may open a cyclic nucleotide-suppressible cation channel leading to influx of calcium, ultimately leading to release of neurotransmitter. Indeed, denatonium and strychnine induce transient reduction in cAMP and cGMP in taste tissue, whereas this decrease is inhibited by GNAT3 antibody. Gustducin heterotrimer transduces response to bitter and sweet compounds via regulation of phosphodiesterase for alpha subunit, as well as via activation of phospholipase C for beta and gamma subunits, with ultimate increase inositol trisphosphate and increase of intracellular Calcium. GNAT3 can functionally couple to taste receptors to transmit intracellular signal: receptor heterodimer TAS1R2/TAS1R3 senses sweetness and TAS1R1/TAS1R3 transduces umami taste, whereas the T2R family GPCRs such as TAS2R14 act as bitter sensors (PubMed:[38600377](#), PubMed:[38776963](#)). Functions also as luminal sugar sensors in the gut to control the expression of the Na⁺-glucose transporter SGLT1 in response to dietary sugar, as well as the secretion of Glucagon-like peptide-1, GLP-1 and glucose-dependent insulinotropic polypeptide, GIP. Thus, may modulate the gut capacity to absorb sugars, with implications in malabsorption syndromes and diet- related disorders including diabetes and obesity.

Cellular Location

Cytoplasm. Note=Dual distribution pattern; plasmalemmal pattern with apical region localization and cytosolic pattern with localization throughout the cytoplasm

Tissue Location

Expressed in taste buds (sensory organs of clustered epithelial cells) of the circumvallate and foliate papillae of the tongue at protein level. Expressed in enteroendocrine L cells of the gut. Detected also in spermatozoa.

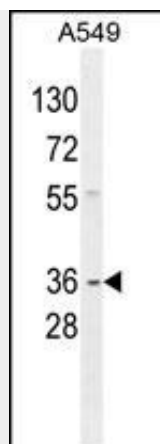
GNAT3 Antibody (Center) - Protocols

Provided below are standard protocols that you may find useful for product applications.

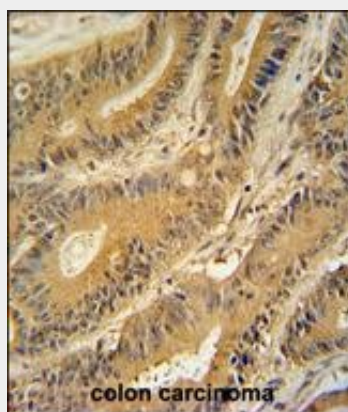
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

GNAT3 Antibody (Center) - Images

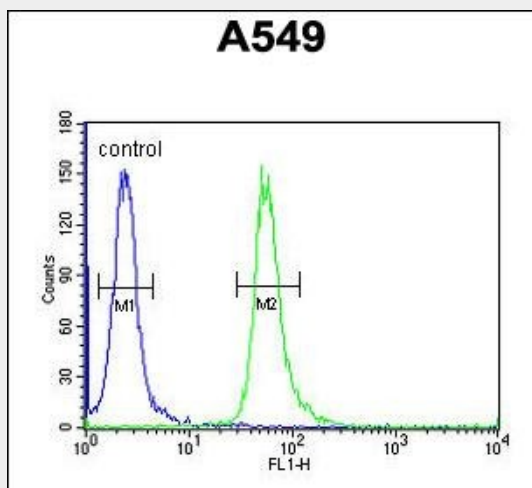




GNAT3 Antibody (Center) (Cat. #AP10484c) western blot analysis in A549 cell line lysates (35ug/lane). This demonstrates the GNAT3 antibody detected the GNAT3 protein (arrow).



GNAT3 antibody (Center) (Cat. #AP10484c) immunohistochemistry analysis in formalin fixed and paraffin embedded human colon carcinoma followed by peroxidase conjugation of the secondary antibody and DAB staining. This data demonstrates the use of the GNAT3 antibody (Center) for immunohistochemistry. Clinical relevance has not been evaluated.



GNAT3 Antibody (Center) (Cat. #AP10484c) flow cytometric analysis of A549 cells (right histogram) compared to a negative control cell (left histogram). FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

GNAT3 Antibody (Center) - Background

Guanine nucleotide-binding protein (G protein) alpha subunit playing a prominent role in bitter and sweet taste transduction as well as in umami (monosodium glutamate, monopotassium glutamate, and inosine monophosphate) taste transduction. Transduction by this alpha subunit involves coupling of specific cell-surface receptors with a cGMP-phosphodiesterase; Activation of phosphodiesterase lowers intracellular levels of cAMP and cGMP which may open a cyclic nucleotide-suppressible cation channel leading to influx of calcium, ultimately leading to release of neurotransmitter. Indeed, denatonium and strychnine induce transient reduction in cAMP and cGMP in taste tissue, whereas this decrease is inhibited by GNAT3 antibody. Gustducin heterotrimer transduces response to bitter and sweet compounds via regulation of phosphodiesterase for alpha subunit, as well as via activation of phospholipase C for beta and gamma subunits, with ultimate increase inositol trisphosphate and increase of intracellular Calcium. GNAT3 can functionally couple to taste receptors to transmit intracellular signal: receptor heterodimer TAS1R2/TAS1R3 senses sweetness and TAS1R1/TAS1R3 transduces umami taste, whereas the T2R family GPCRs act as bitter sensors. Functions also as luminal sugar sensors in the gut to control the expression of the Na⁺-glucose transporter SGLT1 in response to dietary sugar, as well as the secretion of Glucagon-like peptide-1, GLP-1 and glucose-dependent insulinotropic polypeptide, GIP. Thus, may modulate the gut capacity to absorb sugars, with implications in malabsorption syndromes and diet-related disorders including diabetes and obesity.

GNAT3 Antibody (Center) - References

- Fushan, A.A., et al. Chem. Senses 35(7):579-592(2010)
Luttrell, L.M. Mol. Biotechnol. 39(3):239-264(2008)
Margolskee, R.F., et al. Proc. Natl. Acad. Sci. U.S.A. 104(38):15075-15080(2007)
Jang, H.J., et al. Proc. Natl. Acad. Sci. U.S.A. 104(38):15069-15074(2007)
Fehr, J., et al. J. Comp. Physiol. A Neuroethol. Sens. Neural. Behav. Physiol. 193(1):21-34(2007)