

**GNAT3 / Gustducin Antibody (Internal)**  
**Goat Polyclonal Antibody**  
**Catalog # ALS13706****Specification**

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**GNAT3 / Gustducin Antibody (Internal) - Product Information**

Application	IHC
Primary Accession	<a href="#">A8MTJ3</a>
Reactivity	Human, Mouse, Rat, Rabbit, Hamster, Monkey, Pig, Horse, Bovine, Dog
Host	Goat
Clonality	Polyclonal
Calculated MW	40kDa KDa

**GNAT3 / Gustducin Antibody (Internal) - Additional Information****Gene ID** 346562**Other Names**

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

**Target/Specificity**

Human GNAT3.

**Reconstitution & Storage**

Store at -20°C. Minimize freezing and thawing.

**Precautions**

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

**GNAT3 / Gustducin Antibody (Internal) - 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:<a href="http://www.uniprot.org/citations/38600377" target="\_blank">38600377</a>, PubMed:<a href="http://www.uniprot.org/citations/38776963" target="\_blank">38776963</a>). 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:<a href="http://www.uniprot.org/citations/38600377" target="\_blank">38600377</a>, PubMed:<a href="http://www.uniprot.org/citations/38776963" target="\_blank">38776963</a>). Functions also as luminal sugar sensors in the gut to control the expression of the Na<sup>+</sup>-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**

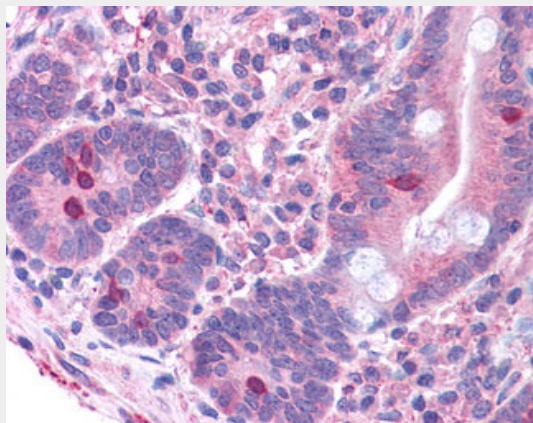
Expressed in taste buds (sensory organs of clustered epithelial cells) of the circumvallate and foliate papillae of the tongue at protein level. Expressed in enteroendocrine L cells of the gut. Detected also in spermatozoa.

#### **GNAT3 / Gustducin Antibody (Internal) - 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 / Gustducin Antibody (Internal) - Images**



Anti-GNAT3 antibody IHC of human small intestine.

#### **GNAT3 / Gustducin Antibody (Internal) - Background**

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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<sup>+</sup>-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 / Gustducin Antibody (Internal) - References**

- Hillier L.W., et al. Nature 424:157-164(2003).  
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Takami S., et al. Brain Res. Mol. Brain Res. 22:193-203(1994).  
Li X., et al. Proc. Natl. Acad. Sci. U.S.A. 99:4692-4696(2002).