

# G $\alpha$ t1 (K-20): sc-389



The Power to Question

## BACKGROUND

Heterotrimeric G proteins function to relay information from cell surface receptors to intracellular effectors. Each of a very broad range of receptors specifically detects an extracellular stimulus (a photon, pheromone, odorant, hormone or neurotransmitter) while the effectors (i.e. adenylyl cyclase), which act to generate one or more intracellular messengers, are less numerous. In mammals, G protein  $\alpha$ ,  $\beta$  and  $\gamma$  polypeptides are encoded by at least 16, 4 and 7 genes, respectively. Most interest in G proteins has been focused on their  $\alpha$  subunits, since these proteins bind and hydrolyze GTP and most obviously regulate the activity of the best studied effectors. Four distinct classes of G $\alpha$  subunits have been identified; these include G $\alpha_s$ , G $\alpha_i$ , G $\alpha_q$  and G $\alpha_{12/13}$ . The G $\alpha_i$  class comprises all the known  $\alpha$  subunits that are susceptible to pertussis toxin modifications, including G $\alpha_{i-1}$ , G $\alpha_{i-2}$ , G $\alpha_{i-3}$ , G $\alpha_{o}$ , G $\alpha_{t1}$ , G $\alpha_{t2}$ , G $\alpha_z$  and G $\alpha_{gust}$ . In the well characterized visual system, photorhodopsin catalyzes the exchange of guanine nucleotides bound to the visual transducin G $\alpha$  subunits (G $\alpha_{t1}$  in rod cells and G $\alpha_{t2}$  in cone cells).

## CHROMOSOMAL LOCATION

Genetic locus: GNAT1 (human) mapping to 3p21.31; Gnat1 (mouse) mapping to 9 F1.

## SOURCE

G $\alpha_{t1}$  (K-20) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping within a highly divergent domain of G $\alpha_{t1}$  of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-389 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

G $\alpha_{t1}$  (K-20) is recommended for detection of G $\alpha_{t1}$  of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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).

G $\alpha_{t1}$  (K-20) is also recommended for detection of G $\alpha_{t1}$  in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for G $\alpha_{t1}$  siRNA (h): sc-43783, G $\alpha_{t1}$  siRNA (m): sc-45759, G $\alpha_{t1}$  shRNA Plasmid (h): sc-43783-SH, G $\alpha_{t1}$  shRNA Plasmid (m): sc-45759-SH, G $\alpha_{t1}$  shRNA (h) Lentiviral Particles: sc-43783-V and G $\alpha_{t1}$  shRNA (m) Lentiviral Particles: sc-45759-V.

Molecular Weight of G $\alpha_{t1}$ : 46 kDa.

Positive Controls: G $\alpha_{t1}$  (m2): 293T Lysate: sc-120374, rat brain extract: sc-2392 or cow brain extract.

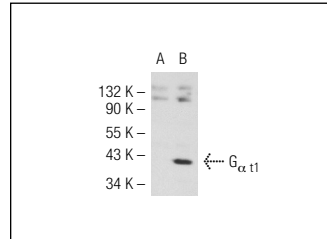
## RESEARCH USE

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

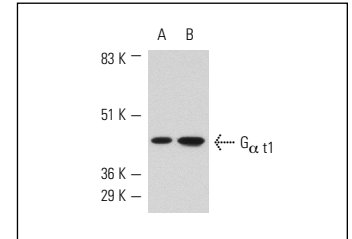
## STORAGE

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

## DATA



G $\alpha_{t1}$  (K-20): sc-389. Western blot analysis of G $\alpha_{t1}$  expression in non-transfected: sc-117752 (A) and mouse G $\alpha_{t1}$  transfected: sc-120374 (B) 293T whole cell lysates.



G $\alpha_{t1}$  (K-20): sc-389. Western blot analysis of G $\alpha_{t1}$  expression in rat (A) and cow (B) brain extracts.

## SELECT PRODUCT CITATIONS

- Boughter, J.D., Jr., et al. 1997. Differential expression of  $\alpha$ -Gustducin in taste bud populations of the rat and hamster. *J. Neurosci.* 17: 2852-2858.
- Saidi, T., et al. 2011. Diurnal rodents as animal models of human central vision: characterisation of the retina of the sand rat *Psammomys obesus*. *Graefes Arch. Clin. Exp. Ophthalmol.* 249: 1029-1037.
- Choi, R.Y., et al. 2011. Cone degeneration following rod ablation in a reversible model of retinal degeneration. *Invest. Ophthalmol. Vis. Sci.* 52: 364-373.
- Caprara, C., et al. 2011. HIF1A is essential for the development of the intermediate plexus of the retinal vasculature. *Invest. Ophthalmol. Vis. Sci.* 52: 2109-2117.
- Saidi, T., et al. 2011. The sand rat, *Psammomys obesus*, develops type 2 diabetic retinopathy similar to humans. *Invest. Ophthalmol. Vis. Sci.* 52: 8993-9004.
- Pang, J.J., et al. 2011. Long-term retinal function and structure rescue using capsid mutant AAV8 vector in the rd10 mouse, a model of recessive retinitis pigmentosa. *Mol. Ther.* 19: 234-242.
- Vogalis, F., et al. 2011. Ectopic expression of cone-specific G protein-coupled receptor kinase GRK7 in zqbrafish rods leads to lower photosensitivity and altered responses. *J. Physiol.* 589: 2321-2348.
- Kerov, V. and Artemyev, N.O. 2011. Diffusion and light-dependent compartmentalization of transducin. *Mol. Cell. Neurosci.* 46: 340-346.

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Try G $\alpha_{t1}$  (3): **sc-136143**, our highly recommended monoclonal alternative to G $\alpha_{t1}$  (K-20).