Revision 1

#3719 Store at -20C

GNB3 Antibody

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	H M R	Endogenous	31	Rabbit	#P16520	2784

Product Usage Information

Application	Dilution
Western Blotting	1:1000

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. Do not aliquot the antibody.

Specificity/Sensitivity

GNB3 Antibody recognizes endogenous levels of total GNB3 protein.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Ile123 of human GNB3 protein. Antibodies are purified by protein A and peptide affinity chromatography.

Background

Heterotrimeric guanine nucleotide-binding proteins, G proteins, transduce ligand binding to G protein-coupled receptors (GPCRs) into intracellular responses (1). G proteins are comprised of 3 subunits, alpha (Gα), beta (Gβ), and gamma (Gγ). Upon activation of GPCRs, the receptor promotes the exchange of GDP to GTP of Gα, changing the confirmation of the switch regions within Gα. The receptor bound heterotimeric G protein (inactive) is then released, and dissociates into the GTP-bound Gα (active) monomer and the Gβ/Gγ heterodimer (1,2). Gα activates adenylyl cyclase, which converts ATP to the second messenger cAMP. Gα also activates phosphoinositide-specific phospholipase C (PLC), which catalyzes hydrolysis of the phospholipid of phosphatidylinositol 4,5-biphosphate (PIP_2), releasing the second messengers IP_3 and 1,2-diacylglycerol (DAG). IP_3 activates IP_3 receptors to release Ca^{2+} from the ER. DAG is an activator of protein kinase C (PKC), which in turn activates the Erk1/2 pathway (1,3). The primary function of the Gβ/Gγ heterodimer is to inhibit Gα, although it may also activate second messengers (e.g. PLC pathway) or gate ion channels (e.g. GIRK) (1). Guanine nucleotide-binding protein b3 (GNB3) is an isoform of the b subunit. Research studies have shown that a polymorphism in the GNB3 gene, C825T, is associated with hypertension, obesity, and depression (4).

Background References

1. Hamm, H.E. (1998) *J Biol Chem* 273, 669-72.
2. Ritchey, E.R. et al. (2010) *Neuroscience* 169, 1376-91.
3. Hisatsune, C. et al. (2005) *J Biol Chem* 280, 11723-30.
4. Rosskopf, D. et al. (2000) *Hypertension* 36, 33-41.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat

Trademarks and Patents

Limited Uses

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