

## Product datasheet for **TA328815**

### Gabra4 Rabbit Polyclonal Antibody

#### Product data:

Product Type:	Primary Antibodies
Applications:	IF, IHC, WB
Recommended Dilution:	WB: 1:200-1:2000; IHC: 1:100-1:3000
Reactivity:	Human, Mouse, Rat
Host:	Rabbit
Clonality:	Polyclonal
Immunogen:	Peptide NSKDEKLSPENFTR(C), corresponding to amino acid residues 37-50 of rat GABA(A) a4 with replacement of C44 with serine. Extracellular, N-terminus.
Formulation:	Lyophilized. Concentration before lyophilization ~0.8mg/ml (lot dependent, please refer to CoA along with shipment for actual concentration). Buffer before lyophilization: Phosphate buffered saline (PBS), pH 7.4, 1% BSA, 0.05% NaN <sub>3</sub> .
Reconstitution Method:	Add 50 ul double distilled water (DDW) to the lyophilized powder.
Purification:	Affinity purified on immobilized antigen.
Conjugation:	Unconjugated
Storage:	Store at -20°C as received.
Stability:	Stable for 12 months from date of receipt.
Gene Name:	gamma-aminobutyric acid type A receptor alpha4 subunit
Database Link:	<a href="#">NP_542154</a> <a href="#">Entrez Gene 2557 Human</a> <a href="#">Entrez Gene 14397 Mouse</a> <a href="#">Entrez Gene 140675 Rat</a> <a href="#">P28471</a>



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**Background:**

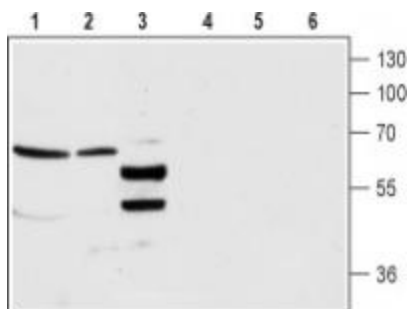
GABA ( $\gamma$ -aminobutyric acid) is the major inhibitory neurotransmitter in the brain. Its production, release, reuptake, and metabolism all occur in the nervous system. The GABA transmitter interacts with two major types of receptors: ionotropic GABA<sub>A</sub> receptors (GABA<sub>A</sub>R) and metabotropic receptors (GABA<sub>B</sub>R). GABA<sub>A</sub>Rs belong to the ligand-gated ion channel superfamily. GABA inhibits the activity of signal-receiving neurons by interacting with the GABA<sub>A</sub> receptor on these cells. Binding of GABA to its GABA<sub>A</sub> receptor results in conformational changes that open a Cl<sup>-</sup> channel, producing an increase in membrane conductance that results in inhibition of neural activity. GABA<sub>A</sub>Rs are heteropentamers, in which all five subunits contribute to the pore formation. To date, eight subunit isoforms have been cloned:  $\alpha$ ,  $\beta$ ,  $\gamma$ ,  $\delta$ ,  $\epsilon$ ,  $\rho$ ,  $\sigma$ , and  $\theta$ . Six  $\alpha$  subunit isoforms have been found to exist in mammals ( $\alpha$ 1- $\alpha$ 6). In most cases, native GABA<sub>A</sub> receptors consist of 2 $\alpha$ , 2 $\beta$ , and 1 $\gamma$  subunits. The  $\alpha$  subunit is the most common and is expressed ubiquitously. It determines the affinity of GABA<sub>A</sub>Rs for allosteric ligands. Each subtype has a unique regional expression in the brain, and individual neurons often express multiple subtypes. For example, the  $\alpha$ 4 subunit is detected in the hippocampus, cortex, olfactory bulb and in the basal forebrain.

**Synonyms:**

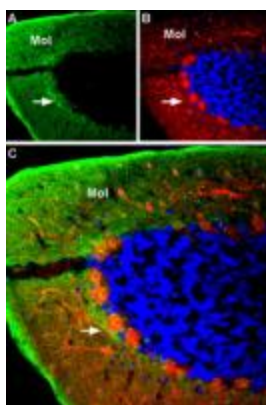
GABRA4

**Note:**

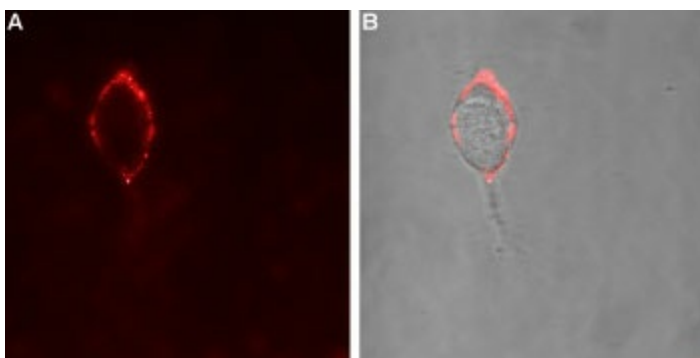
This antibody was tested in live cell imaging. Please see IF/ICC data for detail.

**Product images:**


Western blot analysis of rat brain lysate (lanes 1 and 4), mouse brain membrane (lanes 2 and 5) and CCF-STGI cell line lysate (lanes 3 and 6): 1-3. Anti-GABA(A)  $\alpha$ 4 Receptor (extracellular) antibody, (1:200). 4-6. Anti-GABA(A)  $\alpha$ 4 Receptor (extracellular) antibody, preincubated with the control peptide antigen.



IHC staining of rat cerebellum using Anti-GABA(A)  $\alpha$ 4 Receptor (extracellular) antibody. A GABRA4 staining (green) appears in the molecular layer (Mol) and around the soma of Purkinje cells (arrow). B. Parvalbumin (red), a marker of Purkinje and interneuronal cells, is stained in the same section. C. Merge of the images demonstrates expression of GABRA4 around the soma of Purkinje cells. DAPI is used as the counterstain (blue).



Expression of GABA(A)  $\alpha$ 4 Receptor in rat PC12 cells. Immunocytochemical staining of intact living rat pheochromocytoma PC12 cells. A. Extracellular staining of cells using Anti-GABA(A)  $\alpha$ 4 Receptor (extracellular) antibody, (1:50), (red). B. Merge of A with the live view of the cell.