# SANTA CRUZ BIOTECHNOLOGY, INC.

# GABA<sub>A</sub> Rθ (T-19): sc-27945



## BACKGROUND

 $\gamma$ -aminobutyric acid type A (GABA<sub>A</sub>) receptors mediate inhibitory neurotransmission in the mammalian central nervous system. The receptor exists as a pentameric ion channel composed by heteromeric combinations of  $\alpha$ ,  $\beta$ ,  $\gamma$ ,  $\delta$ ,  $\epsilon$ ,  $\tau$  or  $\pi$  subunits. Only specific subunit combinations produce viable receptors, while others never translocate to the cell surface from the ER where they are synthesized, and subsequently degraded. The  $\tau$  subunit forms a receptor in combination with  $\alpha 3$  subunits in monoaminergic cell groups. These receptors, found especially in the septum, preoptic areas, hypothalamic nuclei, amygdala and thalamus, likely have unique pharmacological properties linked to their expression in this particular cell type and not cholinergic cell groups, and may play a role in opiate withdrawl symptoms.

#### REFERENCES

- 1. Bonnert, T.P., et al. 1999.  $\tau$ , a novel  $\gamma$ -aminobutyric acid type A receptor subunit. Proc. Natl. Acad. Sci. USA 96: 9891-9896.
- Heikkila, A.T., et al. 2001. Morphine withdrawal increases expression of GABA<sub>A</sub> receptor epsilon subunit mRNA in locus coeruleus neurons. Neuroreport 12: 2981-2985.
- 3. Moragues, N., et al. 2002. Localisation of GABA<sub>A</sub> receptor  $\varepsilon$ -subunit in cholinergic and aminergic neurones and evidence for co-distribution with the  $\tau$ -subunit in rat brain. Neuroscience 111: 657-669.
- Bollan, K., et al. 2003. Multiple assembly signals in γ-aminobutyric acid (type A) receptor subunits combine to drive receptor construction and composition. Biochem. Soc. Trans. 31: 875-879.

#### CHROMOSOMAL LOCATION

Genetic locus: GABRQ (human) mapping to Xq28; Gabrq (mouse) mapping to X A7.3.

#### SOURCE

GABA<sub>A</sub> R $\theta$  (T-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an extracellular domain of GABA<sub>A</sub>  $\theta$  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-27945 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

# **STORAGE**

Store at 4° C, \*\*D0 NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

#### APPLICATIONS

GABA<sub>A</sub> R $\theta$  (T-19) is recommended for detection of precursor and mature GABA<sub>A</sub>  $\theta$  of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

Suitable for use as control antibody for GABA<sub>A</sub> R $\Theta$  siRNA (h): sc-105384, GABA<sub>A</sub> R $\Theta$  siRNA (m): sc-155896, GABA<sub>A</sub> R $\Theta$  shRNA Plasmid (h): sc-105384-SH, GABA<sub>A</sub> R $\Theta$  shRNA Plasmid (m): sc-155896-SH, GABA<sub>A</sub> R $\Theta$  shRNA (h) Lentiviral Particles: sc-105384-V and GABA<sub>A</sub> R $\Theta$  shRNA (m) Lentiviral Particles: sc-155896-V.

Molecular Weight (predicted) of GABAA R0: 72 kDa.

Molecular Weight (observed) of GABA<sub>A</sub> R0: 68 kDa.

# **RECOMMENDED SECONDARY REAGENTS**

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluo-rescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

#### **RESEARCH USE**

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