

Product Specification Sheet

Cannabinoid Receptor 1 (CB1) Antibodies

Cat. # CB12-P	Rat CB1 Control Peptide # 2	SIZE: 100 ug
Cat. # CB12-S	Rabbit Anti-Rat CB1 antiserum # 2	SIZE: 100 ul
Cat. # CB12-A	Rabbit Anti-Rat CB1 Ig #2 (affinity pure)	SIZE: 100 ug

Cannabinoids, a group of C₂₁ compounds present in Cannabis sativa L., their carboxylic acids, analogs, and transformation products, are the active ingredients found in hashish and marihuana. (-)-trans-D₉-tetrahydrocannabinol (D₉-THC) is the major psychopharmacologically active component of cannabis. Cannabis affect cognition and memory, euphoria and sedation, and antinociception (analgesia) without the respiratory depression problems associated with opioid analgesics. To date, two sub-types of the G-protein coupled **cannabinoid receptor, CB1 and CB2**, have been identified. **CB1** (rat/mouse 473 aa, human 472 aa, ~95% sequence homology) has 7 TM domains with an extracellular N-terminus and cytoplasmic C-terminus. An alternative spliced N-terminal variant, CB1A, has also been reported. The CB1 receptor has been shown to inhibit adenylate cyclase activity in a pertussis-toxin sensitive manner and to be more responsive to psychoactive cannabinoids than to non-psychoactive cannabinoids. CB1 also couples to a pertussis-toxin sensitive G-protein to regulate Ca²⁺ currents, to activate inward rectifying K⁺ channels, and to activate MAP Kinases. CB1 receptor is distributed throughout the brain, with higher representation in the hippocampus, a brain region essential for storage of newly acquired information and changes of mood and behavioral state. In the cerebellum, CB1 is most dense in the molecular layer, consistent with the effects of cannabinoids on the coordination of motor function and motor learning. Outside the CNS, CB1 expression is found in testes, endothelial cells, and ileum longitudinal smooth muscle.

Source of Antigen and Antibodies

Antigen	20-aa peptide of rat CB-1 (1) ; Designated (CB12-P or control peptide) conjugated to KLH. Epitope location ~ C-terminal
Ab Host/type	Rabbit, Polyclonal antiserum # CB12-S and IgG, purified over antigen-agarose (Cat # CB12-A)
2-Ab	Cat # 20320, goat anti-rabbit IgG-HRP (AP, biotin, FITC conjugates also available).
-ve	Cat # 20009-1, Rabbit (non-immune) Serum IgG, purified, suitable for ELISA, Western, IHC as -ve control

Form & Storage of Antibodies/Peptide Control

Antiserum (unpurified)
100ul solution lyophilized powder
Supplied in Buffer: 0.05% azide
Reconstitute powder in 100 ul PBS

Affinity pure IgG
100 ug/100ul solution lyophilized powder
Supplied in **Buffer:** PBS+0.1% BSA

Reconstitute powder in PBS at 1mg/ml

Control/blocking peptide
100 ug/100 ul solution lyophilized powder
Supplied in Buffer: PBS pH 7.5,
Reconstitute powder in PBS at 1 mg/ml.

Storage
Short-term: unopened, undiluted liquid vials at -20OC and powder at 4oC or -20oC..

Long-term: at -20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at -20oC or below.

Recommended Usage

Western Blotting (1:1K-5K for neat serum and 1-10 ug/ml for affinity pure using Chemiluminescence technique).

ELISA (1:10K-1:100K; using 50-100 ng of control peptide/well).

Histochemistry: We recommend the use of 2-10 ug/ml of affinity pure antibody (see refs 2).

Specificity & Cross-reactivity

The rat CB12-P peptide sequence is 100% conserved in mouse, 94% in monkey and human, 88% in zebra finch., 75% in cat and newt (salamander), and 73% in puffer fish CB1. No significant sequence homology exists with CB2 or other receptors. Antibody crossreactivity in various species is not established. Control peptide, because of its low mol. Wt (<3 kDa), is not suitable for Western. It should be used for ELISA or antibody blocking experiments (use 5-10 ug control peptide per 1 ug of aff pure IgG or 1 ul antiserum) to confirm antibody specificity (see detailed protocol at: the web site).

General References: Gerard CM et al (1991) Biochem J. 279, 129-134; Gerard CM et al (1990) Nucl Acid Res. 18, 7142; Shire D et al (1995) J. Biol. Chem. 270, 3726-3731; Matsuda LA et al (1990) Nature 346, 561-564; Ho BY et al (1996) Neurosci. Lett. 212, 123-126; Chakraborty A et al (1995) DNA seq. 5, 385-388.

(2) Citations of ADI's Antibodies (see web site for updated list)

Williams E-J. 2003., J. Cell Biol., Feb 2003; 160: 481 – 486, IHC

*This product is for In vitro research use only.

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