

BACKGROUND

Adrenergic receptors (AR) mediate the physiological effects of the biogenic amine hormones/neurotransmitters adrenaline and noradrenaline. These catecholamine messengers have important roles in the regulation of diverse physiological systems. Thus, adrenergic receptors are widely distributed throughout the body. ARs can be divided into three main classes, alpha₁-AR, alpha₂-AR, and beta-AR, each of which is represented by three subtypes in humans and other mammals (alpha_{1A}, alpha_{1B}, and alpha_{1D}; alpha_{2A}, alpha_{2B}, and alpha_{2C}; beta₁, beta₂, and beta₃). ARs belong to a large family of cell surface receptors that control intracellular second messenger systems by activating guanine nucleotide-binding regulatory proteins (G-proteins). The alpha-adrenergic receptor is the primary adrenergic receptor that causes vasoconstriction with stimulation from an agonist.¹ The alpha_{2A}-adrenoceptor (AR) subtype is located both pre- and postsynaptically, mediates adrenaline/noradrenaline functions. The alpha₂ adrenergic receptors activate the G_{i/o} class of guanine nucleotide binding regulatory proteins (G proteins). The activation of the G protein, in turn, regulates several effectors, including adenylyl cyclase (inhibition), calcium channels (stimulation/inhibition), and potassium channels and H⁺/Na⁺ antiporter (stimulation).² It was shown that alpha₂ adrenergic receptors play an important role in regulating the neuronal release of norepinephrine through presynaptic feedback inhibition in the locus ceruleus. Therefore, alpha₂ adrenergic autoreceptors may underlie some aspects of the pathogenesis and symptomatic expression of depressive illness.³ In addition, Among adrenergic receptor subtypes that regulate lipid mobilization, the alpha₂-AR is involved in the inhibition of fatty acid mobilization from adipose tissue.⁴

References:

1. Ruuskanen, J. O. et al: J. Neurochem. 94:1559-69, 2005
2. Ampatzis, K. et al: J. Comparat. Neurol. 508:72-93, 2008
3. Wang, Z. et al: J. Affect. Disorders 25:191-6, 1992
4. Garenc, C. et al: Mol. Med. 8:88-94, 2002

TECHNICAL INFORMATION

Source:

ADRA2 Antibody is a rabbit antibody raised against a short peptide from human ADRA2 sequence.

Specificity and Sensitivity:

This antibody detects endogenous levels of ADRA2 proteins without cross-reactivity with other family members.

Storage Buffer: PBS and 30% glycerol

Storage:

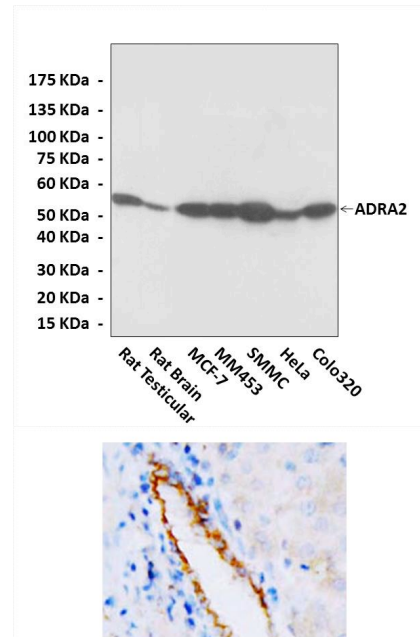
Store at -20°C for at least one year. Store at 4°C for frequent use. Avoid repeated freeze-thaw cycles.

APPLICATIONS

Application:	*Dilution:
WB	1:1000
IP	n/d
IHC	1:50 - 1:200
ICC	n/d
FACS	n/d

**Optimal dilutions must be determined by end user.*

QUALITY CONTROL DATA



Top: Western Blot detection of ADRA2 proteins in various liver tissue and cell lysates using ADRA2 Antibody. **Bottom:** This antibody stains paraffin-embedded rat liver tissue in immunohistochemical analysis.

