

## Product Information

### ANTI- $\beta_1$ ADRENERGIC RECEPTOR, Developed In Rabbit, Affinity Isolated Antibody

Product Number **A-272**

#### Product Description

Anti- $\beta_1$  Adrenergic Receptor was developed in rabbits using a synthetic peptide (His-Gly-Asp-Arg-Pro-Arg-Ala-Ser-Gly-Cys-Leu-Ala-Arg-Ala-Gly), derived from amino acids 394-408 of mouse and rat  $\beta_1$  adrenergic receptor C-terminal domain, as immunogen. The antibody is purified from rabbit serum by epitope affinity chromatography.

Anti- $\beta_1$  Adrenergic Receptor detects rat and mouse  $\beta_1$  adrenergic receptors by immunoblotting and immunofluorescence. By immunoblotting, Anti- $\beta_1$  Adrenergic Receptor detects a ~64 kDa band representing  $\beta_1$  receptors in tissues expressing this receptor subtype although some non-specific bands have been observed.

Adrenergic receptors (ARs) are members of the 7-transmembrane domain G protein-coupled receptor superfamily that bind the endogenous catecholamines epinephrine and norepinephrine. Pharmacological, structural, and molecular cloning data indicate significant heterogeneity within this receptor family. Nine receptor subtypes have been identified thus far including three  $\alpha_1$ AR subtypes ( $\alpha_{1A/D}$ ,  $\alpha_{1B}$ , and  $\alpha_{1C}$ ), three  $\alpha_2$ ARs ( $\alpha_{2A}$ ,  $\alpha_{2B}$ , and  $\alpha_{2C}$ ), and three  $\beta$  AR subtypes ( $\beta_1$ ,  $\beta_2$ , and  $\beta_3$ ). Adrenergic receptors participate in either the onset or maintenance of several disease states including hypertension, cardiac dysfunction (congestive heart failure, ischemia, arrhythmias), diabetes, glaucoma, depression, and impotence.

$\beta$ -adrenergic receptors participate in diverse processes including development, behavior, cardiac function, smooth muscle tone, and metabolism. In gene-knockout experiments, the majority of mice that lack the  $\beta_1$ AR gene die prenatally and those which survive until adulthood display abnormal cardiac function. Other

studies have shown that the direct regulation of cardiac  $\beta_1$ AR density by thyroid hormones occurs at the transcriptional level and is modulated by the catecholamine sensitive-adenylyl cyclase system. Evidence for the effects of cAMP on  $\beta_1$ AR regulation has come from a study of members of the cAMP response element (CRE) modulator (CREM) family of transcription factors in transformed cell lines.

#### Reagents

Anti- $\beta_1$  Adrenergic Receptor is supplied in solution with phosphate buffered saline containing 1.0 mg/ml BSA and 0.05% sodium azide as a preservative.

#### Precautions and Disclaimer

Due to the sodium azide content, a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazardous and safe handling practices.

#### Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, solution may be frozen in working aliquots. Storage in "frost-free" freezers is not recommended. Repeated freezing and thawing is not recommended. If slight turbidity occurs upon prolonged storage, clarify by centrifugation before use.

#### Product Profile

Recommended working dilutions for Anti- $\beta_1$  Adrenergic Receptor are 1:500 for immunoblotting; 1:500 for immunofluorescence.

#### References

1. Fitzgerald, L.R. et al., *J. Neurochem.*, **67**, 490 (1996).

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