## SANTA CRUZ BIOTECHNOLOGY, INC.

# α<sub>1D</sub>-AR (431-572): sc-4471 WB



### BACKGROUND

Alpha <sub>1D</sub>-adrenergic receptors ( $\alpha_{1D}$ -ARs) couple to Gq/11 and participate directly in sympathetic regulation of systemic blood pressure by vasoconstriction.  $\alpha_{1D}$ -AR can form hetero-oligomers with  $\alpha_{1B}$  receptors.  $\alpha_{1D}$ -AR transcripts are abundant in prostate and aorta.  $\alpha_{1A}$  adrenergic receptors ( $\alpha_{1A}$ -ARs) mediate actions in the sympathetic nervous system through the binding of the catecholamines, epinephrine and norepinephrine.  $\alpha_{1A}$ -adrenergic receptors couple to Gq/11 and regulate blood pressure due to changes in vascular tone and cardiac output. Alternative splicing of this gene generates four isoforms with distinct C-termini, and the different expression profile of these subtypes produces distinct patterns of activation.  $\alpha_{1A}$ -AR transcripts are abundant in heart, brain, liver, and prostate.  $\alpha_{1A}$ -AR transcript sizes of 6.0, 4.0, 3.0, and 2.0 kb have been detected in liver.  $\alpha_{1A}$ -AR transcript sizes of 6.0, 4.0 and 3.0 kb transcripts have been detected in heart, and 6.0 kb and 4.0 kb transcripts have been detected in prostate.

#### REFERENCES

- 1. Hausdorff, W.P., Lohse, M.J., Bouvier, M., Liggett, S.B., Caron, M.G., and Lefkowitz, R.J. 1990. Two kinases mediate agonist-dependent phosphorylation and desensitization of the  $\beta_2$ -Adrenergic receptor. Symp. Soc. Exper. Biol. 44: 225-240.
- Cotecchia, S., Kobilka, B.K., Daniel, K.W., Nolan, R.D., Lapetina, E.Y., Caron, M.G., Lefkowitz, R.J., and Regan, J.W. 1990. Multiple second messenger pathways of α-Adrenergic receptor subtypes expressed in eukaryotic cells. J. Biol. Chem. 265: 63-69.
- Bertin, B., Freissmuth, M., Breyer, R.M., Schutz, W., Strosberg, A.D., and Marullo, S. 1992. Functional expression of the human serotonin 5-HT1A receptor in *Escherichia coli*. Ligand binding properties and interaction with recombinant G protein α subunits. J. Biol. Chem. 267: 8200-8206.
- Levy, F.O., Gudermann, T., Birnbaumer, M., Kaumann, A.J., and Birnbaumer, L. 1992. Molecular cloning of a human gene (S31) encoding a novel serotonin receptor mediating inhibition of adenylyl cyclase. FEBS Lett. 296: 201-206.
- 5. Weinberg, D.H., et al. 1994. Cloning, expression and characterization of human  $\alpha$ -Adrenergic receptors  $\alpha$  1a,  $\alpha$  1b and  $\alpha$  1c. Biochem. Biophys. Res. Commun. 201: 1296-1304.
- 6. Barak, L.S., Menard, L., Ferguson, S.S., Colapietro, A.M., and Caron, M.G. 1995. The conserved seven-transmembrane sequence NP(X)2, 3Y of the G protein-coupled receptor superfamily regulates multiple properties of the  $\beta_2$ -Adrenergic receptor. Biochem. 34: 15407-15414.
- Pandey, S.C., Davis, J.M., and Pandey, G.N. 1995. Phosphoinositide system-linked serotonin receptor subtypes and their pharmacological properties and clinical correlates. J. Psych. Neuro. 20: 215-225.
- 8. Tanoue, A., et al. 2002. The  $\alpha_{1D}$ -Adrenergic receptor directly regulates arterial blood pressure via vasoconstriction. J. Clin. Invest. 109: 765-775.
- 9. Hague, C., et al. 2004. Cell surface expression of  $\alpha_{1D}$ -Adrenergic receptors is controlled by heterodimerization with  $\alpha_{1B}$ -Adrenergic receptors. J. Biol. Chem. 279: 15541-15549.

## SOURCE

 $\alpha_{1D}\text{-}AR$  (431-572) is expressed in *E. coli* as a 44 kDa tagged fusion protein corresponding to amino acids 431-572 of  $\alpha_{1D}\text{-}AR$  of human origin.

## PRODUCT

 $\alpha_{1D}\text{-}AR$  (431-572) is purified from bacterial lysates (>98%) by glutathione agarose affinity chromatography; supplied as 10  $\mu g$  in 0.1 ml SDS-PAGE loading buffer.

#### **APPLICATIONS**

 $\alpha_{1D}\text{-}AR$  (431-572) is suitable as a Western blotting control for sc-1475 and sc-10721.

### **STORAGE**

Store at -20° C; stable for one year from the date of shipment.

#### **RESEARCH USE**

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