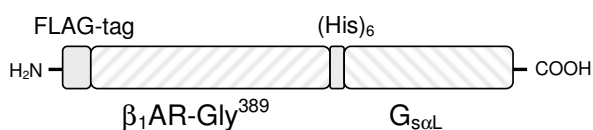


**$\beta_1$ -AR-Gly<sup>389</sup>-G<sub>s $\alpha$ L</sub>**  
 **$\beta_1$ -Adrenergic Receptor G<sub>s $\alpha$ L</sub> fusion protein**  
**human, recombinant, Sf9 insect cells**

Cat. No.	Amount
PR-522	1 ml



For *in vitro* use only  
 Quality guaranteed for 12 months  
 Store at - 80°C

**Avoid freeze / thaw cycles**

**Form**

Membrane suspension. Supplied in 75 mM Tris-HCl  
 pH 7.4, 12.5 mM MgCl<sub>2</sub> and 1 mM EDTA.

**Molecular Weight**

111 kDa

**Activity**

4.5 - 10 pmol/mg

**Description**

$\beta_1$ -Adrenergic receptor-Gly<sup>389</sup>-G<sub>s $\alpha$ L</sub> is a fusion protein in which the G<sub>s $\alpha$ L</sub> N-terminus is linked to the  $\beta_1$ -adrenoceptor ( $\beta_1$ AR) C-terminus via a hexahistidine (His<sub>6</sub>)-tag.

The  $\beta_1$ AR is activated by the catecholamines epinephrine and norepinephrine and couples to the G-protein G<sub>s</sub> to mediate adenylate cyclase (AC) stimulation. The  $\beta_1$ ARs exists as several polymorphic forms of which the Gly<sup>389</sup> and Arg<sup>389</sup> variants are among the best known. There is a controversy whether or not there are functional differences between the two  $\beta_1$ AR polymorphisms.

$\beta_1$ ARs are mainly found in the heart, kidney, and fat tissue. These receptors are involved in physiological processes such heart contraction, renin release and lipolysis.

G<sub>s $\alpha$ L</sub> is the long splice variant of the  $\alpha$ -subunit of the heterotrimeric G-protein G<sub>s</sub>. G<sub>s $\alpha$ L</sub> differs from the short splice variant (G<sub>s $\alpha$ S</sub>) by a 15-amino acid insert between the ras-like domain and the  $\alpha$ -helical domain. G<sub>s $\alpha$ L</sub> (cat.# PR-501) possesses a lower GDP-affinity than G<sub>s $\alpha$ S</sub> (cat.# PR-505).

The  $\beta_1$ AR-Gly<sup>389</sup>-G<sub>s $\alpha$ L</sub> fusion protein ensures a defined 1:1 stoichiometry of the receptor and the G<sub>s $\alpha$ L</sub> subunit as well as high coupling efficiency. In contrast to  $\beta_1$ AR-Arg<sup>389</sup>-G<sub>s $\alpha$ S</sub> (cat.# PR-524),  $\beta_1$ AR-Gly<sup>389</sup>-G<sub>s $\alpha$ L</sub> exhibits hallmarks of high constitutive activity, i.e. high efficacy and potency of partial agonists at activating [<sup>35</sup>S]GTP $\gamma$ S binding and high efficiency of agonist-free  $\beta_1$ AR-Gly<sup>389</sup>-G<sub>s $\alpha$ L</sub> at activating AC.

The fusion protein contains a N-terminal FLAG-tag® for immunochemical detection.

**Selected References:**

Wenzel-Seifert *et al.* (2002) Similarities and differences in the coupling of human  $\beta_1$ - and  $\beta_2$ -adrenoreceptors to G<sub>s $\alpha$</sub>  splice variants. *Biochem. Pharmacol.* **64**:9.

Wenzel-Seifert *et al.* (2003) Properties of Arg<sup>389</sup>- $\beta_1$ -adrenoceptor-G<sub>s $\alpha$</sub>  fusion proteins: Comparison with Gly<sup>389</sup>- $\beta_1$ -adrenoceptor-G<sub>s $\alpha$</sub>  fusion proteins. *Receptors Channels* **9**:315.

Small *et al.* (2003) Pharmacology and physiology of human adrenergic receptor polymorphism. *Annu. Rev. Pharmacol. Toxicol.* **42**:381.