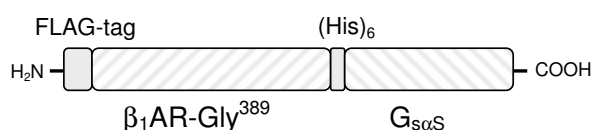


β_1 -AR-Gly³⁸⁹-G_{s α S}

β_1 -Adrenergic Receptor G_{s α S} fusion protein
 human, recombinant, Sf9 insect cells

Cat. No.	Amount
PR-523	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 MgCl₂ and 1 mM EDTA.

Molecular Weight

104 kDa

Receptor expression level

2 - 10 pmol/mg

Description

β_1 -Adrenergic receptor-Gly³⁸⁹-G_{s α S} is a fusion protein in which the G_{s α S} N-terminus is linked to the β_1 -adrenoreceptor (β_1 AR) C-terminus via a hexahistidine (His₆)-tag.

The β_1 AR is activated by the catecholamines epinephrine and norepinephrine and couples to the G-protein G_s to mediate adenylate cyclase (AC) stimulation. The β_1 AR exists as several polymorphic forms of which the Gly³⁸⁹ and Arg³⁸⁹ variants are among the best known. There is a controversy whether or not there are functional differences between the two β_1 AR polymorphisms.

β_1 ARs are mainly found in the heart, kidney, and fat tissue. These receptors are involved in physiological processes such as heart contraction, renin release and lipolysis. G_{s α S} is the short splice variant of the α -subunit of the heterotrimeric G-protein G_s. G_{s α S} differs from the long splice variant (G_{s α L}) by the absence of a 15-amino acid insert between the ras-like domain and the α -helical domain. G_{s α S} (cat.# PR-505) possesses a higher GDP-affinity than G_{s α L} (cat.# PR-501).

The β_1 AR-Gly³⁸⁹-G_{s α S} fusion protein ensures a defined 1:1 stoichiometry of the receptor and the G_{s α S} subunit as well as high coupling efficiency. In contrast to β_1 AR-Arg³⁸⁹-G_{s α L} (cat.# PR-525), β_1 AR-Gly³⁸⁹-G_{s α S} does not exhibit hallmarks of high constitutive activity, i.e. high efficacy and potency of partial agonists at activating [³⁵S]GTP γ S binding and high efficiency of agonist-free β_1 AR-Gly³⁸⁹-G_{s α L} (cat.# PR-522) 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 β_1 - and β_2 -adrenoreceptors to G_{s α} splice variants. *Biochem. Pharmacol.* **64**:9.
- Wenzel-Seifert *et al.* (2003) Properties of Arg³⁸⁹- β_1 -adrenoceptor-G_{s α} fusion proteins: Comparison with Gly³⁸⁹- β_1 -adrenoceptor-G_{s α} fusion proteins. *Receptors Channels* **9**:315.
- Small *et al.* (2003) Pharmacology and physiology of human adrenergic receptor polymorphism. *Annu. Rev. Pharmacol. Toxicol.* **42**:381.