

FCGRT-B2M Heterodimer Protein, Rat (HEK293, C-His)

Cat. No.:	HY-P75760A
Synonyms:	FCGRT-B2M Heterodimer Protein; IgG receptor FcRn large subunit p51; Beta-2-microglobulin
Species:	Rat
Source:	HEK293
Accession:	P13599 (A23-S298)&P07151 (I21-M119)
Gene ID:	29558 & 24223
Molecular Weight:	Approximately 38-55 & 12 kDa

PROPERTIES

Biological Activity	Measured by its binding ability in a functional ELISA. When FCRN-B2M is immobilized at 2 µg/mL (100 µL/well), can bind Biotinylated Human IgG1. The ED ₅₀ for this effect is 109.3 ng/mL.
Appearance	Lyophilized powder
Formulation	Lyophilized from a 0.22 µm filtered solution of PBS, pH 7.4.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH ₂ O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background

The FCGRT-B2M heterodimer protein serves as a crucial cell surface receptor facilitating the transfer of passive humoral immunity from the mother to the newborn. Recognizing the Fc region of monomeric immunoglobulin gamma, it selectively uptakes IgG from milk, particularly at the apical surface of the intestinal epithelium. The formed FcRn-IgG complexes undergo transcytosis across the intestinal epithelium, releasing IgG from FcRn into blood or tissue fluids. This process contributes significantly to effective humoral immunity by recycling IgG and extending its half-life in the circulation. Mechanistically, monomeric IgG binding to FcRn in acidic endosomes of endothelial and hematopoietic cells facilitates the recycling of IgG to the cell surface, releasing it into circulation. Notably, besides its role in IgG homeostasis, the FCGRT-B2M heterodimer also regulates the homeostasis of another abundant circulating protein, albumin/ALB, through interactions with albumin. The FcRn complex, consisting of two subunits, p51, and p14 (equivalent to beta-2-microglobulin), forms an MHC class I-like heterodimer, highlighting its pivotal role in immune and protein homeostasis.

Caution: Product has not been fully validated for medical applications. For research use only.

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