Recombinant Mouse pIgR

Catalog Number: 2800-PG

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived mouse pIgR protein Lys19-Lys645, with a C-terminal 6-His tag Accession # O70570
N-terminal Sequence Analysis	Lys19
Predicted Molecular Mass	70.1 kDa

SPECIFICATIONS

SDS-PAGE	93-97 kDa, reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When Recombinant Mouse pIgR is coated at 2 µg/mL (100 µL/well), the concentration of mouse IgM that produces 50% of the optimal binding response is 20-100 ng/mL.
Endotoxin Level	<0.01 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

The mouse polymeric immunoglobulin receptor (p/gR; also known as membrane secretory component) is a 115 kDa type I transmembrane glycoprotein that is synthesized as a 771 amino acid (aa) precursor. It includes an 18 aa signal sequence, a 627 aa extracellular domain (ECD) (aa 19-645), a 23 aa transmembrane segment (aa 646-668), and a 143 aa cytoplasmic region (aa 669-771) (1-3). The ECD consists of five V-type Ig-like domains and a sixth non-Ig domain that connects to the transmembrane region. The ECD of mouse p/gR is 65%, 69%, 85%, 62% and 62% aa identical to the equivalent region in human, porcine, rat, bovine and canine, respectively. p/gR is expressed on secretory epithelial cells and serves as a carrier that transports IgA and IgM across epithelium (1, 2, 4). On the basolateral surface of epithelial cells, the receptor initially binds non-covalently to IgA via domains #1 and #5 of the p/gR. A rearrangement then occurs where a disulfide bond forms between domain #5 of the p/gR and an IgA heavy chain (2). This complex is then internalized and transcytosed to the apical surface. A soluble covalent complex called secretory IgA (SIgA) is generated by proteolytic cleavage of the complex in the sixth extracellular domain of p/gR and released into the lumen (5). This proteolytically generated p/gR fragment is referred to as secretory component (SC). Notably, in human, p/gR transcytoses constitutively, with or without ligand, creating both a bound and free, 78 kDa SC following cleavage (3). In mouse, this event would be expected to generate a 95 kDa fragment (1). The receptor component of the complex anchors the SIgA molecule to mucous (6), where it serves to protect mucous membranes that form a barrier between the interior of the body and the external environment (7).

References:

1. de Groot, N. *et al.* (1999) Transgenic Res. **8**:125.
2. Piskurich, J. *et al.* (1995) J. Immunol. **154**:1735.
3. Brandtzaeg, P. and F-E. Johansen (2001) Trends Immunol. **22**:545.
4. Ben-Hur, H. *et al.* (2004) Int. J. Mol. Med. **14**:35.
5. Asano, M. *et al.* (2004) Immunology **112**:583.
6. Phalipon, A. and B. Corthesy (2003) Trends Immunol. **24**:55.
7. Uren, T. *et al.* (2003) J. Immunol. **170**:2531.

bio-techne®
Global bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL +1 612 379 2956
USA TEL 800 343 7475 Canada TEL 855 668 8722 China TEL +86 (21) 52380373
Europe | Middle East | Africa TEL +44 (0)1235 529449