

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived		
	Rat IL-1 RI (Leu20 - Lys338) Accession # Q02955	IEGRMDP	Mouse IgG _{2A} (Glu98 - Lys330)
	N-terminus		C-terminus

N-terminal Sequence Analysis	Leu20
Structure / Form	Disulfide-linked homodimer
Predicted Molecular Mass	64.3 kDa (monomer)

SPECIFICATIONS

SDS-PAGE	85-100 kDa, reducing conditions
Activity	Measured by its ability to inhibit IL-1 α -dependent proliferation in D10.G4.1 mouse helper T cells. Symons, J.A. <i>et al.</i> (1987) in <i>Lymphokines and Interferons, a Practical Approach</i> . Clemens, M.J. <i>et al.</i> (eds): IRL Press. 272. Approximately 5-20 μ g/mL of rrIL-1 RI/Fc Chimera will inhibit 50% of the biological response due to 15 μ g/mL of rrIL-1 α .
Endotoxin Level	<0.01 EU per 1 μ g of the protein by the LAL method.
Purity	>90%, by SDS-PAGE under reducing conditions and visualized by silver stain.
Formulation	Lyophilized from a 0.2 μ m filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 1 mg/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. <ul style="list-style-type: none"> ● 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 type I IL-1 receptor (IL-1 RI, designated IL-1 R1 and CD121a) is one of at least nine members of the IL-1 R family within the Toll/IL-1 R (TIR) superfamily (1 - 3). IL-1 RI is an 80 kDa type I transmembrane (TM) protein that binds the pleiotropic cytokines IL-1 α and IL-1 β , plus the IL-1 receptor antagonist (IL-1 Ra). Signal transduction requires complex formation with the IL-1 R accessory protein (IL-1 R AcP/IL-1 R3), another type I TM protein (1, 2). This complex recruits the adaptor protein MyD88, to initiate signaling in the NF κ B pathway (4, 5). Rat IL-1 RI cDNA encodes a 576 amino acid (aa) protein that contains a 19 aa signal sequence, a 319 aa extracellular domain (ECD) with three C2-type Ig-like domains, a 21 aa TM domain and a 217 aa cytoplasmic region with a TIR domain. Rat IL-1 RI shares 83%, 65%, 60%, 60% and 54% aa identity with mouse, human, canine, equine and bovine IL-1 RI, respectively. Two additional splice isoforms of rat IL-1 RI have been described (6). One has an N-terminus that is extended by 14 amino acids, but appears to have equivalent function. The other lacks the TM sequence and is secreted as an ~82 kDa protein that antagonizes the effect of IL-1 β . Thus, the role of IL-1 in inflammation is under several levels of control, including expression and activation of IL-1 α and IL-1 β , expression of IL-1 RI and its accessory and adaptor proteins, and inhibitory IL-1 R isoforms and decoys (1 - 6). IL-1 RI is expressed predominantly by T cells, fibroblasts, and endothelial cells and mediates acute phase inflammatory responses including fever (1, 2, 5, 7).

References:

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6. Yamada, M. *et al.* (2007) *Nitric Oxide* **17**:98.
7. Ching, S. *et al.* (2007) *J. Neurosci.* **27**:10476.