Recombinant Human IL-1RL1 (ST2)-Fc Chimera (carrier-free)

Catalog# / Size	557908 / 500 µg 557904 / 25 µg 557906 / 100 µg
Regulatory Status	RUO
Other Names	ST2, IL-1 R4, T1, DER4, ST2L, FIT-1, IL-33Rα, IL-33R alpha, IL-33Ra, IL1RL1
Description	IL-1RL1/ST2 was initially identified in stimulated Balc3T3 cells and is encoded by the IL-1RL1 gene that produces different isoforms by alternative splicing. In humans, four isoforms have been described: a membrane attached ST2L isoform and a soluble protein (sST2/ IL1RL-a) that lacks the transmembrane and cytoplasmic domains, which acts as a natural antagonist of IL-33. The other splice variants are ST2V and ST2LV. ST2V lacks the third immunoglobulin motif and C-terminal portion of ST2 and is mainly present in the gut whereas ST2LV does not have the transmembrane domain. The membrane isoform of ST2L (IL-1RL1) associates with IL-1 receptor accessory proteins (IL-1RAcP) to form the IL-33R. The interaction of IL-33 to its receptor activates NF-kB and MAP kinases and induces Th2 cytokines from *in vitro* polarized Th2 cells. *In vivo*, IL-33 promotes the expression of IL-4, IL-5, and IL-13. IL-33 acts as an inflammatory cytokine in Th2-type immune responses during asthma and atopic dermatitis. It is host-protective against helminth infections and reduces atherosclerosis by promoting Th2-type immune responses. Human aortic, coronary artery, and heart microvascular endothelial cells express mRNA for ST2L and sST2 isoforms, acting as a source for sST2 proteins. In fact, sST2 is considered as a prognostic biomarker in myocardial infarction and heart failure. In addition, sST2 has been associated with other human diseases including asthma with acute exacerbation, eosinophilic pneumonia, sepsis and trauma, and exacerbated idiopathic pulmonary fibrosis.

Product Details

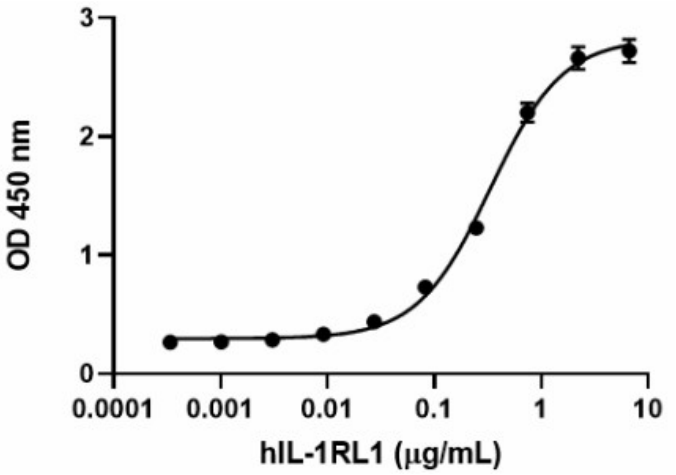
Source	Human IL-1RL1, amino acids (Lys19 - Phe328) (Accession# D12763), with a C-terminal Fc-6His tag was expressed in 293E cells.
Molecular Mass	The 550 amino acid recombinant protein has a predicted molecular mass of approximately 62 kD. The DTT-reduced and non-reduced protein migrate approximately at 100 kD and 200 kD by SDS-PAGE. The predicted N-terminal amino acid is Lys.
Purity	>95%, as determined by Coomassie stained SDS-PAGE.
Formulation	0.22 µm filtered protein solution is in 10mM NaHPO4, 0.3M NaCl, and pH 7.2.
Endotoxin Level	Less than 0.01 ng per µg cytokine as determined by the LAL method.
Concentration	10 and 25 µg sizes are bottled at 200 µg/mL. 100 µg size and larger sizes are lot-specific and bottled at the concentration indicated on the vial. To obtain lot-specific concentration, please enter the lot number in our Concentration and Expiration Lookup or Certificate of Analysis online tools.
Storage & Handling	Unopened vial can be stored between 2°C and 8°C for up to 2 weeks, at -20°C for up to six months, or at -70°C or colder until the expiration date. For maximum results, quick spin vial prior to opening. The protein can be aliquoted and stored at -20°C or colder. Stock solutions can also be prepared at 50 - 100 µg/mL in appropriate sterile buffer, carrier protein such as 0.2 - 1% BSA or HSA can be added when preparing the stock solution. Aliquots can be stored between 2°C and 8°C for up to one week and stored at -20°C or colder for up to 3 months. **Avoid repeated freeze/thaw cycles.**
Activity	ED_{50} = 15 - 90 ng/ml, corresponding to a specific activity of 1.1 - 6.6 x 10^4 units/mg , as determined by inhibition of D10.G4.1 cell proliferation induced by IL-33. When recombinant human IL-33 (Cat. No. 581802) is immobilized at 2 µg/mL, recombinant human IL-1RL1 binds in a dose-dependent manner with EC_{50} range of 0.2 - 0.8 µg/mL.
Application	Bioassay
Application Notes	BioLegend carrier-free recombinant proteins provided in liquid format are shipped on blue-ice. Our comparison testing data indicates that when handled and stored as recommended, the liquid format has equal or better stability and shelf-life compared to commercially available lyophilized

proteins after reconstitution. Our liquid proteins are verified in-house to maintain activity after shipping on blue ice and are backed by our 100% satisfaction guarantee. If you have any concerns, contact us at tech@biolegend.com.

Antigen Details

Structure	Cytokine receptor.
Distribution	Membrane-ST2 is expressed by Th2 lymphocytes, $CD8^+$ T cells, mast cells, macrophages, dendritic cells (DCs), eosinophils, basophils, endothelial, and epithelial cells. Aortic, coronary artery, and heart microvascular endothelial cells are sources of sST2.
Function	Acts as a decoy receptor for IL-33 and prevents its signaling through ST2L.
Ligand/Receptor	IL-33
Biology Area	Immunology
Molecular Family	Cytokine/Chemokine Receptors, Soluble Receptors
Antigen References	1. Schmitz *et al.* 2007. *Immunity* 23:479. 2. Chakerian EA, *et al.* 2007. *J. Immunol.* 179:2551. 3. Hayakawa H, *et al.* 2007. *J. Biol. Chem.* 282:26369. 4. Pulmori SK, *et al.* 2012. *J. Immunol.* 189:50. 5. Demyanets S, *et al.* 2013. *J. Mol. Cell Cardiol.* 60:16. 6. Lin J, *et al.* 2013. *PLoS One* 8(4):e60963.
Gene ID	9173

Product Data



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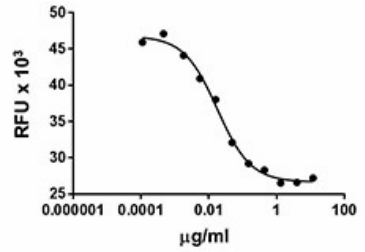

Human IL-1R1L1 inhibits the proliferation of D10.G4.1 cells induced by IL-33 in a dose dependent manner.

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