# Human LILRB2/CD85d/ILT4 Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF2078

## DESCRIPTION

| | |
|---|---|
| **Species Reactivity** | Human |
| **Specificity** | Detects human LILRB2/CD85d/ILT4 in direct ELISAs and Western blots. In direct ELISAs and Western blots, approximately 35% cross-reactivity with recombinant human (rh) ILT2 is observed and 5% cross-reactivity with rhILT5 is observed. |
| **Source** | Polyclonal Goat IgG |
| **Purification** | Antigen Affinity-purified |
| **Immunogen** | Mouse myeloma cell line NS0-derived recombinant human LILRB2/CD85d/ILT4<br>Gly24-His458<br>Accession # Q8N423 |
| **Endotoxin Level** | <0.10 EU per 1 µg of the antibody by the LAL method. |
| **Formulation** | Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.<br>*Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS. |

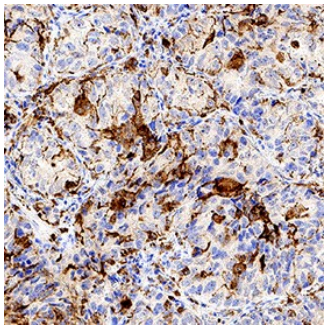
## APPLICATIONS

**Please Note:** *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

| | Recommended Concentration | Sample |
|---|---|---|
| **Western Blot** | 0.1 µg/mL | Recombinant Human LILRB2/CD85d/ILT4 Fc Chimera (Catalog # 2078-T4) |
| **Flow Cytometry** | 2.5 µg/$10^6$ cells | Human peripheral blood monocytes |
| **Immunocytochemistry** | 1-25 µg/mL | See Below |
| **CyTOF-ready** | Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation. | |
| **Neutralization** | Measured by its ability to neutralize LILRB2/CD85d/ILT4-mediated adhesion of the HSB2 human peripheral blood acute lymphoblastic leukemia cell line. Cosman, D. et al. (1997) Immunity ***7****:273*. The Neutralization Dose ($ND_{50}$) is typically 0.3-1.0 µg/mL in the presence of 35 µg/mL Recombinant Human LILRB2/CD85d/ILT4 Fc Chimera. | |

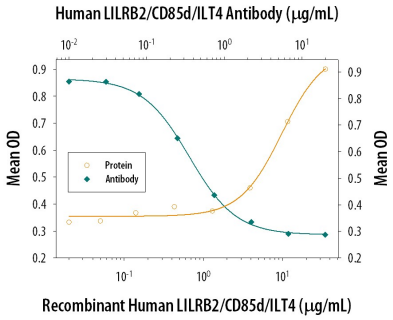
## DATA

### Immunocytochemistry



**LILRB2/CD85d/ILT4 in Human Lung.** LILRB2/CD85d/ILT4 was detected in immersion fixed paraffin-embedded sections of human lung using Goat Anti-Human LILRB2/CD85d/ILT4 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF2078) at 1 µg/mL for 1 hour at room temperature followed by incubation with the Anti-Goat IgG VisUCyte™ HRP Polymer Antibody (Catalog # VC004). Tissue was stained using DAB (brown) and counterstained with hematoxylin (blue). Specific staining was localized to macrophages. View our protocol for IHC Staining with VisUCyte HRP Polymer Detection Reagents.

### Neutralization




**Cell Adhesion Mediated by LILRB2/CD85d/ILT4 and Neutralization by Human LILRB2/CD85d/ILT4 Antibody.** Recombinant Human LILRB2/CD85d/ILT4 Fc Chimera (Catalog # 2078-T4), immobilized onto a microplate, supports the adhesion of the HSB2 human peripheral blood acute lymphoblastic leukemia cell line in a dose-dependent manner (orange line). Adhesion elicited by Recombinant Human LILRB2/CD85d/ILT4 Fc Chimera (35 µg/mL) is neutralized (green line) by increasing concentrations of Goat Anti-Human LILRB2/CD85d/ILT4 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF2078). The $ND_{50}$ is typically 0.3-1.0 µg/mL.

## PREPARATION AND STORAGE

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|---|---|
| **Reconstitution** | Reconstitute at 0.2 mg/mL in sterile PBS. |
| **Shipping** | The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.<br>*Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C |
| **Stability & Storage** | **Use a manual defrost freezer and avoid repeated freeze-thaw cycles.**<br>● 12 months from date of receipt, -20 to -70 °C as supplied.<br>● 1 month, 2 to 8 °C under sterile conditions after reconstitution.<br>● 6 months, -20 to -70 °C under sterile conditions after reconstitution. |



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## BACKGROUND

The immunoglobulin-like transcript (ILT) comprise a family of activating and inhibitory type immunoreceptors whose genes are located in the same locus that encodes killer cell Ig-like receptors (KIR) (1-3). ILT4, also known as LIR-2 and LILRB2, is a type I transmembrane protein expressed primarily on monocytes and dendritic cells (DC) (4). Human ILT4 is produced as a 598 amino acid (aa) precursor including a 21 aa signal sequence, a 440 aa extracellular domain (ECD), a 21 aa transmembrane segment, and a 116 aa cytoplasmic domain. The ECD contains four Ig-like domains, and the cytoplasmic domain contains three immunoreceptor tyrosine-based inhibitory motifs (ITIM) (5). The ECD of human ILT4 shares 76% aa identity with chimpanzee ILT4 and 74%, 81%, 33%, 52%, 77%, 61%, and 64% aa identity with human ILT1, 2, 3, 5, 6, 7, and 8, respectively. ILT4 binds to classical MHC I proteins as well as the non-classical HLA-G1 and HLA-F molecules (5-9). It competes with CD8α for MHC I binding but does not compete with KIR2DL1 (7). Ligation of ILT4 induces Tyr phosphorylation within its cytoplasmic ITIMs, a requirement for association with SHP-1 (4, 6). Activation of ILT4 inhibits signaling through FcγRI (4) and FcεRI (6) and causes DC to become tolerogenic by down-regulation of co-stimulatory molecules (10, 11). ILT4 mediates tolerogenic DC-induced $CD4^+$ T cell energy *in vitro* and *in vivo* (10-12).

**References:**

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