

GMP Ultra-LEAF™ Purified anti-human CD28 SF Antibody

Catalog# / Size	377605 / 100 µg 377606 / 1 mg
Clone	S20013F
Other Names	T44, Tp44
Isotype	Mouse IgG1, κ
Description	CD28 is a 44 kD disulfide-linked homodimeric type I glycoprotein. It is a member of the immunoglobulin superfamily and is also known as T44 or Tp44. CD28 is expressed on most T lineage cells, NK cell subsets, and plasma cells. CD28 binds both CD80 and CD86 using a highly conserved motif MYPPY in the CDR3-like loop. CD28 is considered a major co-stimulatory molecule, inducing T lymphocyte activation and IL-2 synthesis, and preventing cell death. In vitro studies indicate that ligation of CD28 on T cells by CD80 and CD86 on antigen presenting cells provides a costimulatory signal required for T cell activation and proliferation.

Product Details

Reactivity	Human
Antibody Type	Monoclonal
Host Species	Mouse
Immunogen	Human CD28 transfected cells
Formulation	0.1 µm filtered in phosphate-buffered solution, pH 7.2, containing no preservative. Endotoxin level is < 0.01 EU/µg of the protein (< 0.001 ng/µg of the protein) as determined by the LAL test.
Preparation	The Ultra-LEAF™ (Low Endotoxin, Azide-Free) antibody was purified by affinity chromatography.
Concentration	1.0 mg/mL
Storage & Handling	The antibody solution should be stored undiluted between 2°C and 8°C. This Ultra-LEAF™ solution contains no preservative; handle under aseptic conditions.
Application	FC - Quality tested Costim - Verified
Recommended Usage	Each lot of this antibody is quality control tested by immunofluorescent staining with flow cytometric analysis . For flow cytometric staining, the suggested use of this reagent is ≤ 0.125 µg per million cells in 100 µL volume. S20013F antibody can be used at 1 µg/mL of antibody in PBS in combination with 1 µg/mL of anti-human CD3 antibody for T cell activation. It is recommended that the reagent be titrated for optimal performance for each application.
Application Notes	Clone S20013F antibody can completely block the binding of clone CD28.2 on target. Clone S20013F can partially block Clone S20013B on target. Clone S20013F can increase anti-CD3 induced human peripheral T-cell proliferation.
Additional Product Notes	This antibody is intended for activation and expansion of T cells for research and ex vivo cell culture applications. The antibody was GMP manufactured under serum-free conditions, including serum-free hybridoma cell culture, without additional animal or human-derived materials. For plate coating protocols, S20013F antibody (Cat. No. 377605/377606) can be used at 1 µg/mL in PBS in combination with 1 µg/mL of anti-human CD3 antibody (Cat. No. 317354) to efficiently activate T cells. Plates should be coated for 2 hours in a tissue culture incubator or overnight at 4°C. For soluble antibody activation protocols, we recommend 10 µg/mL of anti-human CD3 (Cat. No. 317354) antibody and 5 µg/mL of anti-human CD28 antibody (Cat. No. 377605).
Disclaimer	GMP Ultra-LEAF™ antibodies. BioLegend GMP Ultra-LEAF™ antibodies are manufactured in a dedicated GMP facility and compliant with ISO 13485:2016. For research or <i>ex vivo</i> cell processing use. Not for use in diagnostic or therapeutic procedures. Our processes include: <ul style="list-style-type: none"> • Batch-to-batch consistency • Material traceability

- Documented procedures
- Documented employee training
- Equipment maintenance and monitoring records
- Lot-specific certificates of analysis
- Quality audits per ISO 13485:2016
- QA review of released products

BioLegend GMP Ultra-LEAF™ antibodies are manufactured and tested in accordance with USP Chapter 1043, Ancillary Materials for Cell, Gene and Tissue-Engineered Products and Ph. Eur. Chapter 5.2.12

Antigen Details

Structure	Ig superfamily, type I transmembrane glycoprotein, homodimer, 44 kD
Distribution	Mature T cells, thymocytes, NK cell subsets, plasma cells, EBVpositive B cells
Function	T cell costimulation
Ligand/Receptor	CD80/CD86
Cell Type	Lymphocytes, T cells, Tfh, Th1, Th17, Th2, Thymocytes, Tregs
Biology Area	Adaptive Immunity, Cell Proliferation and Viability, Costimulatory Molecules, Immuno-Oncology, Immunology
Molecular Family	CD Molecules
Antigen References	<ol style="list-style-type: none"> 1. Schlossman S, <i>et al.</i> Eds. 1995. Leukocyte Typing V. Oxford University Press. New York. 2. June CH, <i>et al.</i> 1994. <i>Immunol Today</i>. 15:321-31. 3. Linsley PS and Ledbetter JA. 1993. <i>Annu Rev Immunol</i>. 11:191-212

Gene ID [940](#)

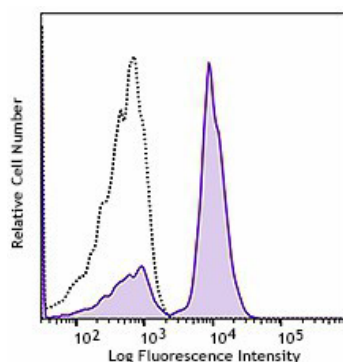
Related Protocols

[Cell Surface Flow Cytometry Staining Protocol](#)

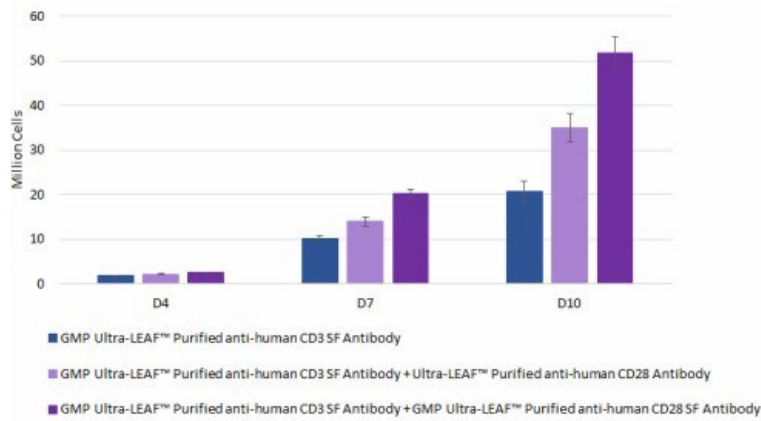
Other Formats

Ultra-LEAF™ Purified anti-human CD28, APC anti-human CD28, FITC anti-human CD28, PE anti-human CD28

Product Data



Human peripheral blood lymphocytes were stained with GMP Ultra-LEAF™ anti-human CD28 SF (Clone S20013F, filled histogram) or isotype control (Clone MG1-45, open histogram) followed by anti-mouse IgG FITC stain.



PBMC-derived T cells were activated in the presence of GMP Ultra-LEAF™ anti-human CD3 antibody (Cat. No. 317354) alone or combined with Ultra-LEAF™ anti-human CD28 (Cat. No. 377604) or GMP Ultra-LEAF™ anti-human CD28 SF antibody (Cat. No. 377606). Activation was done via plate coating with 1 µg/mL of each antibody. Cells were cultured for a total of 11 days and viable cell number was determined.

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