

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

Catalog# / Size	302979 / 100 µg 302980 / 1 mg
Clone	CD28.2
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
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 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 ≤ 0.5 µg per million cells in 100 µL volume or 100 µl of whole blood. It is recommended that the reagent be titrated for optimal performance for each application.
Application Notes	This GMP Ultra-LEAF™ Purified antibody (Endotoxin < 0.01 EU/µg, Azide-Free, 0.1 µm filtered) is recommended for highly sensitive assays.
Additional Product Notes	This antibody is intended for flow cytometry and activation/expansion of T cells for research use only. Please inquire any additional application right by contacting BioLegend. The antibody was GMP manufactured under serum-free conditions including serum-free hybridoma cell culture, without additional animal or human-derived materials or preservatives. For plate coating protocols, CD28.2 antibody (Cat. No. 302979/302980) 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. 302979/302980).
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 use only. 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, CD28 glycoprotein
Distribution	Mature T cells, thymocytes, NK cell subsets, plasma cells, EBV-positive B cells
Function	T cell costimulation
Ligand/Receptor	CD80/CD86
Cell Type	B cells, NK cells, Plasma cells, T cells, Thymocytes, Tregs
Biology Area	Costimulatory Molecules, Immunology
Molecular Family	CD Molecules
Antigen References	<ol style="list-style-type: none"> 1. Schlossman S, <i>et al.</i> Eds. 1995. <i>Leukocyte Typing V</i>. 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](#)

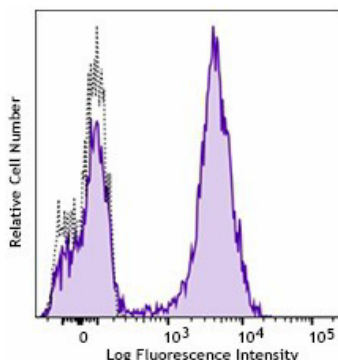
Related Protocols

[Cell Surface Flow Cytometry Staining Protocol](#)

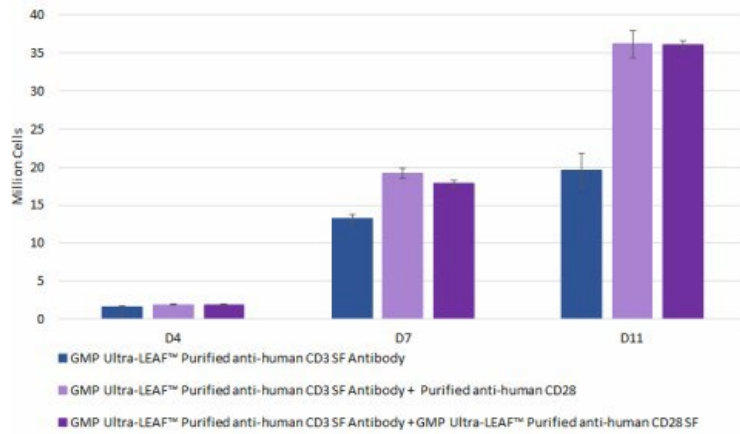
Other Formats

APC anti-human CD28, Biotin anti-human CD28, FITC anti-human CD28, PE anti-human CD28, PE/Cyanine5 anti-human CD28, Purified anti-human CD28, Alexa Fluor® 488 anti-human CD28, Alexa Fluor® 700 anti-human CD28, PerCP/Cyanine5.5 anti-human CD28, Pacific Blue™ anti-human CD28, PE/Cyanine7 anti-human CD28, Ultra-LEAF™ Purified anti-human CD28, Brilliant Violet 421™ anti-human CD28, Brilliant Violet 510™ anti-human CD28, Purified anti-human CD28 (Maxpar® Ready), PE/Dazzle™ 594 anti-human CD28, Brilliant Violet 785™ anti-human CD28, Brilliant Violet 650™ anti-human CD28, Brilliant Violet 711™ anti-human CD28, APC/Fire™ 750 anti-human CD28, Alexa Fluor® 647 anti-human CD28, TotalSeq™-A0386 anti-human CD28, TotalSeq™-B0386 anti-human CD28, TotalSeq™-C0386 anti-human CD28, Brilliant Violet 605™ anti-human CD28, APC/Cyanine7 anti-human CD28, Brilliant Violet 750™ anti-human CD28, PE/Fire™ 810 anti-human CD28, GMP PE anti-human CD28, TotalSeq™-D0386 anti-human CD28, Spark Violet™ 423 anti-human CD28

Product Data



Human peripheral blood lymphocytes were stained with GMP Ultra-LEAF™ anti-human CD28 SF (Clone CD28.2, filled histogram) followed by anti-mouse IgG PE 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. 302934) or GMP Ultra-LEAF™ anti-human CD28 SF antibody (Cat. No. 302980). 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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