

## TotalSeq™-C0204 anti-mouse CD28 Antibody

<b>Catalog# / Size</b>	102133 / 10 µg
<b>Clone</b>	37.51
<b>Regulatory Status</b>	RUO
<b>Other Names</b>	Tp44, T44
<b>Isotype</b>	Syrian Hamster IgG
<b>Barcode Sequence</b>	ATTAAGAGCGTGTTG
<b>Description</b>	CD28 is a 44 kD glycoprotein, also known as Tp44 or T44. It is a member of the Ig superfamily, expressed on thymocytes, most peripheral T cells, and NK cells. In association with CD80 (B7-1) and CD86 (B7-2), CD28 acts as the second signal for T and NK cell activation and proliferation. The 37.51 antibody has been reported to augment <i>in vitro</i> T cell proliferation and cytokine production, and promote CTL development.

### Product Details

<b>Verified Reactivity</b>	Mouse
<b>Antibody Type</b>	Monoclonal
<b>Host Species</b>	Syrian Hamster
<b>Immunogen</b>	C57BL/6 mouse T-cell lymphoma EL-4
<b>Formulation</b>	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide and 1 mM EDTA
<b>Preparation</b>	The antibody was purified by chromatography and conjugated with TotalSeq™-C oligomer under optimal conditions.
<b>Concentration</b>	0.5 mg/mL
<b>Storage &amp; Handling</b>	The antibody solution should be stored undiluted between 2°C and 8°C. <b>Do not freeze.</b>
<b>Application</b>	<a href="#">PG - Quality tested</a>
<b>Recommended Usage</b>	<p>Each lot of this antibody is quality control tested by <a href="#">immunofluorescent staining with flow cytometric analysis</a> and the oligomer sequence is confirmed by sequencing. TotalSeq™-C antibodies are compatible with 10x Genomics Chromium Single Cell Immune Profiling <a href="#">Solution</a>.</p> <p>To maximize performance, it is strongly recommended that the reagent be titrated for each application, and that you centrifuge the antibody dilution before adding to the cells at 14,000xg at 2 - 8°C for 10 minutes. Carefully pipette out the liquid avoiding the bottom of the tube and add to the cell suspension. For Proteogenomics analysis, the suggested starting amount of this reagent for titration is ≤ 1.0 µg per million cells in 100 µL volume. Refer to the corresponding TotalSeq™ protocol for specific staining instructions.</p> <p>Buyer is solely responsible for determining whether Buyer has all intellectual property rights that are necessary for Buyer's intended uses of the BioLegend TotalSeq™ products. For example, for any technology platform Buyer uses with TotalSeq™, it is Buyer's sole responsibility to determine whether it has all necessary third party intellectual property rights to use that platform and TotalSeq™ with that platform.</p>
<b>Application Notes</b>	Additional reported applications (for the relevant formats) include: immunoprecipitation <sup>1</sup> , <i>in vitro</i> costimulation of T and NK cells <sup>1</sup> , <i>in vitro</i> blocking of allogeneic mixed leukocyte response and inhibition of MHC-unrestricted CTL cytotoxicity <sup>3,4</sup> , <i>in vitro</i> induction of thymocyte differentiation <sup>2,5-9,11</sup> , and immunohistochemical staining of acetone-fixed frozen sections. For <i>in vivo</i> studies or highly sensitive assays, we recommend Ultra-LEAF™ purified antibody (Endotoxin < 0.01 EU/µg, Azide-Free, 0.2 µm filtered) (Cat. No. 102116).
<b>Additional Product Notes</b>	TotalSeq™ reagents are designed to profile protein levels at a single cell level following an optimized protocol similar to the CITE-seq workflow. A compatible single cell device (e.g. <a href="#">10x Genomics Chromium System and Reagents</a> ) and sequencer (e.g. Illumina analyzers) are required.

Please contact [technical support](#) for more information, or visit [biolegend.com/totalseq](http://biolegend.com/totalseq).

The barcode flanking sequences are CGGAGATGTGTATAAGAGACAGNNNNNNNNNN (PCR handle), and NNNNNNNNNCCCATATAAGA\*A\*A (capture sequence). N represents either randomly selected A, C, G, or T, and \* indicates a phosphorothioated bond, to prevent nuclease degradation.

View more applications data for this product in our [Scientific Poster Library](#).

## Application References

(PubMed link indicates BioLegend citation)

1. Gross JA, et al. 1992. *J. Immunol.* 149:380. (IP, Costim)
2. Cibotti R, et al. 1997. *Immunity* 6:245. (Costim)
3. Masten BJ, et al. 1997. *Am. J. Respir. Cell Mol. Biol.* 16:335. (Block)
4. Nishio M, et al. 1996. *J. Immunol.* 157:4347. (Block)
5. Zhang N and He Y-W, 2005. *J. Exp. Med.* 202:395. (Costim)
6. Terrazas LI, et al. 2005. *Intl. J. Parasitology.* 35:1349. (Costim)
7. Perchonock CE, et al. 2006. *Mol Cell Biol.* 26(16):6005. (Costim)
8. Wang W, et al. 2007. *J. Immunol.* 178:4885. (Costim)
9. Pua HH, et al. 2007. *J. Exp. Med.* 204:25. (Costim)
10. Perchonock CE, et al. 2007. *J. Immunol.* 179:1768.
11. Barbi J, et al. 2007. *Blood* 110:2215.
12. Milpied P, et al. 2011. *Blood* 118:2993. [PubMed](#)
13. Cunningham NR, et al. 2011. *Int Immunol.* 23:693. [PubMed](#)
14. Crispin JC, et al. 2012. *J. Immunol.* 188:3567. [PubMed](#)
15. Li CR, et al. 2014. *J Immunol.* 192:1425. [PubMed](#)
16. Blankenhaus B, et al. 2014. *PLoS Pathog.* 10:1003913. [PubMed](#)

RRID

AB\_2832287 (BioLegend Cat. No. 102133)

## Antigen Details

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<b>Structure</b>	Ig superfamily, 44 kD
<b>Distribution</b>	Thymocytes, CD4 <sup>+</sup> , CD8 <sup>+</sup> peripheral T cells, NK cells
<b>Function</b>	Costimulates T and NK cells
<b>Ligand/Receptor</b>	CD80 (B7-1), CD86 (B7-2)
<b>Cell Type</b>	NK cells, T cells, Thymocytes, Tregs
<b>Biology Area</b>	Costimulatory Molecules, Immunology
<b>Molecular Family</b>	CD Molecules
<b>Antigen References</b>	<ol style="list-style-type: none"><li>1. Barclay AN, et al. 1997. <i>The Leukocyte Antigen FactsBook</i> Academic Press.</li><li>2. Lenschow DJ, et al. 1996. <i>Annu. Rev. Immunol.</i> 14:233.</li><li>3. Gross JA, et al. 1992. <i>J. Immunol.</i> 149:380.</li></ol>
<b>Gene ID</b>	<a href="#">12487</a>

## Related Protocols

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[TotalSeq™-B or -C with 10x Feature Barcoding Technology](#)

## Other Formats

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APC anti-mouse CD28, Biotin anti-mouse CD28, PE anti-mouse CD28, PE/Cyanine5 anti-mouse CD28, Purified anti-mouse CD28, PerCP/Cyanine5.5 anti-mouse CD28, Ultra-LEAF™ Purified anti-mouse CD28, Purified anti-mouse CD28 (Maxpar® Ready), PE/Cyanine7 anti-mouse CD28, PE/Dazzle™ 594 anti-mouse CD28, Brilliant Violet 421™ anti-mouse CD28, TotalSeq™-C0204 anti-mouse CD28, KIRAVIA Blue 520™ anti-mouse CD28

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