

Datasheet: MCA5778

**BATCH NUMBER 156713**

<b>Description:</b>	MOUSE ANTI BOVINE CD28
<b>Specificity:</b>	CD28
<b>Format:</b>	Purified
<b>Product Type:</b>	Monoclonal Antibody
<b>Clone:</b>	CC220
<b>Isotype:</b>	IgG1
<b>Quantity:</b>	0.25 mg

## Product Details

### Applications

This product has been reported to work in the following applications. This information is derived from testing within our laboratories, peer-reviewed publications or personal communications from the originators. Please refer to references indicated for further information. For general protocol recommendations, please visit [www.bio-rad-antibodies.com/protocols](http://www.bio-rad-antibodies.com/protocols).

	Yes	No	Not Determined	Suggested Dilution
Flow Cytometry	▪			
Functional Assays	▪			

Where this antibody has not been tested for use in a particular technique this does not necessarily exclude its use in such procedures. Suggested working dilutions are given as a guide only. It is recommended that the user titrates the antibody for use in their own system using appropriate negative/positive controls.

<b>Target Species</b>	Bovine
<b>Product Form</b>	Purified IgG - liquid
<b>Preparation</b>	Purified IgG prepared by affinity chromatography on Protein A from tissue culture supernatant
<b>Buffer Solution</b>	Phosphate buffered saline.
<b>Preservative Stabilisers</b>	0.09% Sodium Azide (NaN <sub>3</sub> )
<b>Carrier Free</b>	Yes
<b>Approx. Protein Concentrations</b>	IgG concentration 1.0 mg/ml

Immunogen	Plasmid DNA encoding the bovine CD28 gene.
External Database Links	<p><b>UniProt:</b>  <a href="#">Q28071</a>    <a href="#">Related reagents</a></p> <p><b>Entrez Gene:</b>  <a href="#">281050</a>    CD28    <a href="#">Related reagents</a></p>
RRID	AB_10965063
Fusion Partners	Spleen cells from immunised Balb/c mice were fused with cells of the SP2/0 myeloma cell line.
Specificity	<p><b>Mouse anti Bovine CD28, clone CC220</b> recognizes the bovine homologue of human CD28, a co-stimulatory cell surface molecule expressed by T cell subsets. CD28 is the receptor for CD80 (B7.1) and CD86 (B7.2). Mouse anti Bovine CD28, clone CC220 is able to stimulate bovine T lymphocytes in combination with anti-bovine CD3 (<a href="#">Nishimori et al. 2017</a>).</p> <p>For functional use, the use of the preservative free format (<a href="#">MCA5778EL</a>) is recommended. Mouse anti Bovine CD28, clone CC220 has also been published under the alternative designation F849CD10 (<a href="#">Hogg et al. 2011</a> &amp; <a href="#">Guzman et al. 2014</a>).</p>
Flow Cytometry	Use 10ul of the suggested working dilution to label $1 \times 10^6$ cells in 100ul.
References	<ol style="list-style-type: none"> <li>Hogg, A.E. <i>et al.</i> (2011) Characterization of age-related changes in bovine CD8+ T-cells. <a href="#">Vet Immunol Immunopathol. 140 (1-2): 47-54.</a></li> <li>Goto, S. <i>et al.</i> (2017) Increase of cells expressing PD-1 and PD-L1 and enhancement of IFN-<math>\gamma</math> production via PD-1/PD-L1 blockade in bovine mycoplasmosis. <a href="#">Immun Inflamm Dis. 5 (3): 355-363.</a></li> <li>Nishimori, A. <i>et al.</i> (2017) <i>In vitro</i> and <i>in vivo</i> antiviral activity of an anti-programmed death-ligand 1 (PD-L1) rat-bovine chimeric antibody against bovine leukemia virus infection. <a href="#">PLoS One. 12 (4): e0174916.</a></li> <li>Cunha, P. <i>et al.</i> (2019) Expansion, isolation and first characterization of bovine Th17 lymphocytes. <a href="#">Sci Rep. 9 (1): 16115.</a></li> </ol>
Storage	<p>Store at +4°C or at -20°C if preferred.</p> <p>Storage in frost-free freezers is not recommended.</p> <p>This product should be stored undiluted.</p>
Guarantee	12 months from date of despatch
Health And Safety Information	Material Safety Datasheet documentation #10040 available at: <a href="https://www.bio-rad-antibodies.com/SDS/MCA577810040">https://www.bio-rad-antibodies.com/SDS/MCA577810040</a>
Regulatory	For research purposes only

## Related Products

### Recommended Secondary Antibodies

Rabbit Anti Mouse IgG (STAR12...)	<a href="#">RPE</a>
Goat Anti Mouse IgG IgA IgM (STAR87...)	<a href="#">HRP</a>
Goat Anti Mouse IgG (STAR76...)	<a href="#">RPE</a>
Rabbit Anti Mouse IgG (STAR13...)	<a href="#">HRP</a>
Goat Anti Mouse IgG (STAR70...)	<a href="#">FITC</a>
Goat Anti Mouse IgG (H/L) (STAR117...)	<a href="#">Alk. Phos.</a> , <a href="#">DyLight®488</a> , <a href="#">DyLight®550</a> , <a href="#">DyLight®650</a> , <a href="#">DyLight®680</a> , <a href="#">DyLight®800</a> , <a href="#">FITC</a> , <a href="#">HRP</a>
Rabbit Anti Mouse IgG (STAR9...)	<a href="#">FITC</a>
Goat Anti Mouse IgG (STAR77...)	<a href="#">HRP</a>
Goat Anti Mouse IgG (Fc) (STAR120...)	<a href="#">FITC</a> , <a href="#">HRP</a>

### Recommended Negative Controls

[MOUSE IgG1 NEGATIVE CONTROL \(MCA928\)](#)

<b>North &amp; South America</b>	Tel: +1 800 265 7376 Fax: +1 919 878 3751 Email: <a href="mailto:antibody_sales_us@bio-rad.com">antibody_sales_us@bio-rad.com</a>	<b>Worldwide</b>	Tel: +44 (0)1865 852 700 Fax: +44 (0)1865 852 739 Email: <a href="mailto:antibody_sales_uk@bio-rad.com">antibody_sales_uk@bio-rad.com</a>	<b>Europe</b>	Tel: +49 (0) 89 8090 95 21 Fax: +49 (0) 89 8090 95 50 Email: <a href="mailto:antibody_sales_de@bio-rad.com">antibody_sales_de@bio-rad.com</a>
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To find a batch/lot specific datasheet for this product, please use our online search tool at: [bio-rad-antibodies.com/datasheets](https://bio-rad-antibodies.com/datasheets)  
'M368380:200529'

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