# Datasheet: MCA709SBR775

## BATCH NUMBER 100008346

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| **Description:** | RAT ANTI HUMAN CD28:StarBright Red 775 |
| **Specificity:** | CD28 |
| **Format:** | StarBright Red 775 |
| **Product Type:** | Monoclonal Antibody |
| **Clone:** | YTH913.12 |
| **Isotype:** | IgG2b |
| **Quantity:** | 100 TESTS/0.5ml |

## 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.

| | Yes | No | Not Determined | Suggested Dilution |
|---|---|---|---|---|
| Flow Cytometry | ▪ | | | Neat |

Where this product 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 product for use in their own system using appropriate negative/positive controls.

**Target Species**

Human

**Product Form**

Purified IgG conjugated to StarBright Red 775 - liquid

**Max Ex/Em**

| Fluorophore | Excitation Max (nm) | Emission Max (nm) |
|---|---|---|
| StarBright Red 775 | 653 | 778 |

**Preparation**

Purified IgG prepared by affinity chromatography on Protein G from tissue culture supernatant

**Buffer Solution**

Phosphate buffered saline

**Preservative Stabilisers**

0.09% Sodium Azide ($NaN_3$)
1% Bovine Serum Albumin
0.1% Pluronic F68
0.1% PEG 3350
0.05% Tween 20

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| **Immunogen** | Human peripheral blood T-cells. |

**External Database Links**

**UniProt:**

P10747     Related reagents

**Entrez Gene:**

940   CD28   Related reagents

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| **Fusion Partners** | Spleen cells from an immunized DA rat were fused with cells of the Y3/Ag 1.2.3 rat myeloma cell line. |

**Specificity**

**Rat anti Human CD28 antibody, clone YTH913.12** recognizes human CD28, a ~44 kDa single pass type 1 trans-membrane protein expressed as a homodimer on a major subset of human T-cells (Thompson *et al.* 1989), responsible for activation of these cells via interaction with the TCR. CD28 is involved in the tuning of the T-cell for activation via TCR, lowering the threshold for activation from around 8000 triggered TCRs to approximately 1500 (Viola *et al.*1996).

CD28 along with CD152, also known as CTLA-4 acts as a co-receptor for the co-stimulatory molecules CD80 and CD86 (Azuma *et al.* 1993). CD28 offers a positive stimulatory role on ligation of CD80 and CD86 while CTLA-4 offers a negative feedback signal preventing CD28 mediated T-cell activation of CD86 (Krummel *et al.* 1995).

Rat anti human CD28, clone YTH913.12 has been reported to recognize an epitope of CD28 expressed by NK cells, which is not recognized by other anti human CD28 clones such as 9.3 and CD28.2 (Galea-Lauri *et al* 1999.) Other reports however have failed to demonstrate CD28 staining on peripheral blood derived NK cells using clone YTH913.12 (Wilson *et al.* 1999).

**Flow Cytometry**

Use 5µl of the suggested working dilution to label $10^6$ cells in 100µl. Best practices suggest a 5 minutes centrifugation at 6,000g prior to sample application.

**References**

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19. Zenere, A. *et al.* (2023) Prominent epigenetic and transcriptomic changes in CD4(+) and CD8(+) T cells during and after pregnancy in women with multiple sclerosis and controls. J Neuroinflammation. 20 (1): 98.

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| **Storage** | Store at +4°C. DO NOT FREEZE.<br>This product should be stored undiluted. |
| **Guarantee** | 12 months from date of despatch |
| **Acknowledgements** | This product is covered by U.S. Patent No. 10,150,841 and related U.S. and foreign counterparts |
| **Health And Safety Information** | Material Safety Datasheet documentation #20471 available at:<br>https://www.bio-rad-antibodies.com/SDS/MCA709SBR775<br>20471 |
| **Regulatory** | For research purposes only |

# Related Products

## Recommended Useful Reagents

[HUMAN SEROBLOCK (BUF070A)](#)
[HUMAN SEROBLOCK (BUF070B)](#)

To find a batch/lot specific datasheet for this product, please use our online search tool at: bio-rad-antibodies.com/datasheets

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