

Datasheet: MCA709SBB810

BATCH NUMBER 100007178

Description:	RAT ANTI HUMAN CD28:StarBright Blue 810
Specificity:	CD28
Format:	StarBright Blue 810
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 Blue 810 - liquid		
Max Ex/Em	Fluorophore	Excitation Max (nm)	Emission Max (nm)
	StarBright Blue 810	477	802
Preparation	Purified IgG prepared by affinity chromatography on Protein G from tissue culture supernatant		
Buffer Solution	Phosphate buffered saline		
Preservative	0.09% Sodium Azide (NaN ₃)		
Stabilisers	1% Bovine Serum Albumin		
	0.1% Pluronic F68		
	0.1% PEG 3350		
	0.05% Tween 20		

Immunogen Human peripheral blood T-cells.

External Database Links

UniProt:

[P10747](#) [Related reagents](#)

Entrez Gene:

[940](#) CD28 [Related reagents](#)

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

References

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13. Svensson-Arvelund, J. *et al.* (2015) The human fetal placenta promotes tolerance against the semiallogeneic fetus by inducing regulatory T cells and homeostatic M2 macrophages. [J Immunol. 194 \(4\): 1534-44.](#)
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16. Hellberg, S. *et al.* (2021) Progesterone Dampens Immune Responses in *In Vitro* Activated CD4⁺ T Cells and Affects Genes Associated With Autoimmune Diseases That Improve During Pregnancy. [Front Immunol. 12: 672168.](#)
17. 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.](#)

Storage	Store at +4°C. DO NOT FREEZE. 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: https://www.bio-rad-antibodies.com/SDS/MCA709SBB810 20471
Regulatory	For research purposes only

Related Products

Recommended Useful Reagents

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

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

North & South Tel: +1 800 265 7376

Worldwide Tel: +44 (0)1865 852 700

Europe Tel: +49 (0) 89 8090 95 21

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

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