

## Datasheet: MCA5951SBUV445

**BATCH NUMBER 64628408**

<b>Description:</b>	MOUSE ANTI PIG CD3:StarBright UltraViolet 445
<b>Specificity:</b>	CD3 EPSILON
<b>Format:</b>	StarBright UltraViolet 445
<b>Product Type:</b>	Monoclonal Antibody
<b>Clone:</b>	PPT3
<b>Isotype:</b>	IgG1
<b>Quantity:</b>	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](http://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.

<b>Target Species</b>	Pig		
<b>Species Cross Reactivity</b>	Does not react with:Bovine, Goat, Horse, Human, Sheep		
<b>Product Form</b>	Purified IgG conjugated to StarBright UltraViolet 445 - liquid		
<b>Max Ex/Em</b>	<b>Fluorophore</b>	<b>Excitation Max (nm)</b>	<b>Emission Max (nm)</b>
	StarBright UltraViolet 445	347	440
<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> ) 1% Bovine Serum Albumin		

0.1% Pluronic F68

0.1% PEG 3350

0.05% Tween 20

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**Immunogen** Porcine PBMCs

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**External Database Links**

**UniProt:**

[Q7YRN2](#)

[Related reagents](#)

**Entrez Gene:**

[397455](#)

CD3E

[Related reagents](#)

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**Fusion Partners**

Lymph node cells from immunized BALB/c mice were fused with cells of the NS0 myeloma cell line

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**Specificity**

**Mouse anti Pig CD3, clone PPT3** recognizes the porcine homologue of human CD3 $\epsilon$ , a 24 kDa single pass type I membrane protein expressed by T-lymphocytes. Clone PPT3, also known under the clone designation FY1H2, was clustered at the second international swine CD workshop and found to specifically recognise an epitope on the porcine CD3 $\epsilon$  designated as CD3c ([Pescovitz, M.D., et al. 1998](#)).

CD3 is a multimeric protein complex composed of four distinct polypeptide chains ( $\epsilon$ ,  $\gamma$ ,  $\delta$ ,  $\zeta$ ) that assemble and function as three pairs of dimers ( $\epsilon\gamma$ ,  $\epsilon\delta$ ,  $\zeta\zeta$ ). The CD3 complex serves as a T cell co-receptor that associates non-covalently with the T cell receptor (TCR) ([Guy, C.S & Vignali, D.G. 2009](#)). CD3 is a defining feature of cells belonging to the T cell lineage, antibodies recognising pig CD3 therefore provide useful markers of porcine T cells.

Clone PPT3 has been demonstrated to recognise an epitope that is expressed both intracellularly and extracellularly, additionally clone PPT3 has been demonstrated to activate  $\alpha/\beta$  T-cells ([Kirkham P.A., et al. 1996](#)).

Clone PPT3 was tested on PBL from a range of other mammalian species and found to be negative suggesting that the epitope recognised by this clone is specific to porcine ([Yang, H. et al. 1996](#)).

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**Flow Cytometry**

Use 5 $\mu$ l of the suggested working dilution to label 10<sup>6</sup> cells in 100 $\mu$ l. Best practices suggest a 5 minutes centrifugation at 6,000g prior to sample application.

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**References**

1. Kirkham, P.A. *et al.* (1996) Porcine CD3 epsilon: its characterization, expression and involvement in activation of porcine T lymphocytes. [Immunology. 87 \(4\): 616-23.](#)
2. Uehlein, S. *et al.* (2021) Human-like Response of Pig T Cells to Superagonistic Anti-CD28 Monoclonal Antibodies. [J Immunol. 207 \(10\): 2473-88.](#)
3. Zhao, H. *et al.* (2022) Development of *RAG2*<sup>-/-</sup> *IL2R $\gamma$* <sup>-/-</sup> immune deficient FAH-knockout miniature pig. [Front Immunol. 13: 950194.](#)
4. Maciag, S.S. *et al.* (2022) On the influence of the source of porcine colostrum in the development of early immune ontogeny in piglets. [Sci Rep. 12 \(1\): 15630.](#)

5. dos Santos, M.C. *et al.* (2023) Effect of yeast extracted  $\beta$ -glucans on the immune response and reproductive performance of gilts in the adaptation, gestation, and lactation periods [Livestock Science. 275: 105289.](#)
6. Haach, V. *et al.* (2023) A polyvalent virosomal influenza vaccine induces broad cellular and humoral immunity in pigs. [Virology J. 20 \(1\): 181.](#)
7. Hu, Z. *et al.* (2019) Genomic variant in porcine TNFRSF1A gene and its effects on TNF signaling pathway in vitro. [Gene. 700: 105-109.](#)
8. Boschetto, F. *et al.* (2024) Protocol for extracting and isolating porcine bone-marrow-derived macrophages from ribs. [STAR Protoc. 5 \(2\): 103085.](#)
9. Maciag, S. *et al.* (2022) Effects of freezing storage on the stability of maternal cellular and humoral immune components in porcine colostrum. [Vet Immunol Immunopathol. 254: 110520.](#)
10. Forner, R. *et al.* (2021) Distribution difference of colostrum-derived B and T cells subsets in gilts and sows. [PLoS One. 16 \(5\): e0249366.](#)

<b>Further Reading</b>	1. Guy, C.S. & Vignali, D.A. (2009) Organization of proximal signal initiation at the TCR:CD3 complex. <a href="#">Immunol Rev. 32: 7-21.</a>
<b>Storage</b>	Store at +4°C. DO NOT FREEZE. This product should be stored undiluted.
<b>Guarantee</b>	12 months from date of despatch
<b>Acknowledgements</b>	This product is covered by U.S. Patent No. 10,150,841 and related U.S. and foreign counterparts
<b>Health And Safety Information</b>	Material Safety Datasheet documentation #20471 available at: <a href="https://www.bio-rad-antibodies.com/SDS/MCA5951SBUV445">https://www.bio-rad-antibodies.com/SDS/MCA5951SBUV445</a>
<b>Regulatory</b>	For research purposes only

**Product inquiries:** [www.bio-rad-antibodies.com/technical-support](http://www.bio-rad-antibodies.com/technical-support)

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