Datasheet: MCA5951SBV440

BATCH NUMBER 64776190

Description:	MOUSE ANTI PIG CD3:StarBright Violet 440
Specificity:	CD3 EPSILON
Format:	StarBright Violet 440
Product Type:	Monoclonal Antibody
Clone:	PPT3
Isotype:	IgG1
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 (1)	▪			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.

(1)**Staining at lower temperatures generally requires longer incubation to reach antibody binding equilibrium, and this effect is more pronounced for StarBright Dyes due to their larger size. For optimum staining, Bio-Rad recommends incubating samples either overnight at 4°C or 1 hour at room temperature.**

Target Species

Pig

Species Cross Reactivity

Does not react with:Bovine, Goat, Horse, Human, Sheep

Product Form

Purified IgG conjugated to StarBright Violet 440 - liquid

Max Ex/Em

Fluorophore	Excitation Max (nm)	Emission Max (nm)
StarBright Violet 440	383	436

Preparation

Purified IgG prepared by affinity chromatography on Protein A 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
Approx. Protein Concentrations	For information on the concentration of our StarBright Dye conjugated reagents please visit our FAQ page.
Immunogen	Porcine PBMCs
External Database Links	**UniProt:** Q7YRN2 Related reagents **Entrez Gene:** 397455 CD3E Related reagents
Fusion Partners	Lymph node cells from immunized BALB/c mice were fused with cells of the NS0 myeloma cell line
Specificity	**Mouse anti Pig CD3, clone PPT3** recognizes the porcine homologue of human CD3ε, 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 CD3ε designated as CD3c (Pescovitz, M.D., *et al.* 1998). CD3 is a multimeric protein complex composed of four distinct polypeptide chains (ε, γ, δ, ζ) that assemble and function as three pairs of dimers (εγ, εδ, ζζ). 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 α/β 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).
Flow Cytometry	Use 5µl of the suggested working dilution to label $0.5x10^6$ cells in 100µl. Best practices suggest a 5 min centrifugation at 6,000g prior to sample application.
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* $^{-/-}$ *IL2Rγ* $^{-/Y}$ 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 β-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. Virol 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.
11. Xie, Q. *et al.* (2025) Immune cell response after intracerebral hemorrhage in piglets and the treatment effects of deferoxamine and minocycline. Exp Neurol. : 115354. 23 Jun [Epub ahead of print].
12. Arrigucci, R. *et al.* (2025) OMIP-113: Characterization of Cytokine Producing T Cells in Swine. Cytometry A. 107 (5): 289-292.
13. de Oliveira Barbosa, A. *et al.* (2026) Immunogenicity of an inactivated vaccine against senecavirus a and duration of the immune response in pigs. Arch Virol. 171 (2): 33.
14. Sedaghat-Rostami, E. *et al.* (2026) Pathogen-specific immune responses might underlie divergent outcomes of coronavirus and influenza infection in the natural porcine host. Commun Biol. 9 (1): 1043.

Further Reading	1. Guy, C.S. & Vignali, D.A. (2009) Organization of proximal signal initiation at the TCR:CD3 complex. Immunol Rev. 32: 7-21.
Storage	This product is shipped at ambient temperature. 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/MCA5951SBV440
Regulatory	For research purposes only

Product inquiries: 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

'M452577:260710'

Printed on 16 Oct 2026

© 2026 Bio-Rad Laboratories Inc | Legal | Imprint