Technical Data Sheet

BV421 Hamster Anti-Mouse CD279

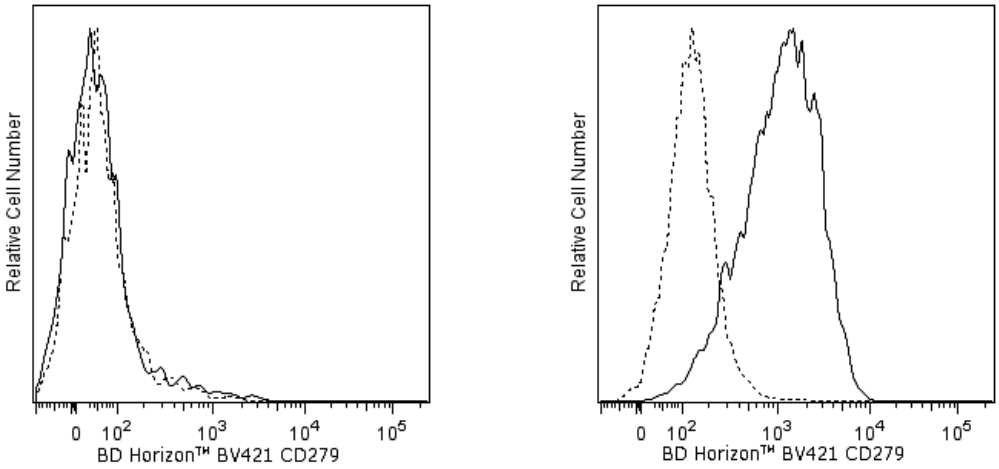
Product Information

Material Number:	**562584**
Alternate Name:	PD-1; Pdcd1; Pd1; Pdc1; Ly101; programmed cell death 1
Size:	50 µg
Concentration:	0.2 mg/ml
Clone:	J43
Immunogen:	Syrian Hamster kidney cell line BKH transfected with Pdcd1 cDNA
Isotype:	Armenian Hamster IgG2, κ
Reactivity:	QC Testing: Mouse
Storage Buffer:	Aqueous buffered solution containing BSA and ≤0.09% sodium azide.

Description

The J43 monoclonal antibody specifically binds to CD279 (PD-1), a 50-55-kDa glycoprotein encoded by the *Pdcd1* gene of the CD28 family of the Ig superfamily. The expression of *Pdcd1* mRNA and PD-1 protein is tightly regulated. PD-1 is transiently expressed on CD4-CD8thymocytes, it is upregulated on some cell lines upon induction of apoptosis, it is induced on thymocytes and splenic T and B lymphocytes after stimulation through their antigen receptors, and it is induced on activated myeloid cells. In addition, *Pdcd1* mRNA is transiently expressed in developing B lymphocytes at the pro-B-cell stage. The presence of an ITIM (*I*mmunoreceptor *T*yrosine-based *I*nhibitory *M*otif) on PD-1's intracytoplasmic region and the development of splenomegaly and breakdown of peripheral tolerance in PD-1[-/-] mice suggest that PD-1 may be involved in the negative regulation of immune responses. The PD-1 ligands, B7-H1 (also known as PD-L1) and B7-DC (PD-L2), are members of the B7 family of the Ig superfamily. The J43 antibody blocks the binding of PD-1 to its two ligands.

The antibody was conjugated to BD Horizon™ BV421 which is part of the BD Horizon™ Brilliant Violet™ family of dyes. With an Ex Max of 407-nm and Em Max at 421-nm, BD Horizon™ BV421 can be excited by the violet laser and detected in the standard Pacific Blue™ filter set (eg, 450/50-nm filter). BD Horizon™ BV421 conjugates are very bright, often exhibiting a 10 fold improvement in brightness compared to Pacific Blue™ conjugates.



Flow cytometric analysis of CD279 expression on resting and activated mouse splenocytes. *Splenocytes from a C57BL/6 mouse were activated in culture with plate-bound Purified NA/LE Hamster Anti-Mouse CD3e antibody (Cat. No. 553057) for 3 days. The resting (Left Panel) or activated (Right Panel) splenocytes were stained with either a BD Horizon™ BV421 Hamster IgG2, κ isotype control (Cat. No. 562612; dashed line histogram) or with the BD Horizon™ BV421 Hamster Anti-Mouse CD279 antibody (Cat. No. 562584; solid line histogram). The fluorescence histograms were derived from events with the forward and side light-scatter characteristics of viable splenocytes. Flow cytometry was performed using a BD™ LSR II Flow Cytometer System.*

Preparation and Storage

Store undiluted at 4°C and protected from prolonged exposure to light. Do not freeze.

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.

The antibody was conjugated with BD Horizon™ BV421 under optimum conditions, and unconjugated antibody and free BD Horizon™ BV421 were removed.

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Application Notes

Application

Flow cytometry	Routinely Tested

Suggested Companion Products

Catalog Number	Name	Size	Clone
562612	BV421 Hamster IgG2, κ Isotype Control	50 µg	B81-3
554656	Stain Buffer (FBS)	500 ml	(none)
553057	Purified NA/LE Hamster Anti-Mouse CD3e	0.5 mg	145-2C11

Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
3. An isotype control should be used at the same concentration as the antibody of interest.
4. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.
5. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
6. For fluorochrome spectra and suitable instrument settings, please refer to our Multicolor Flow Cytometry web page at www.bdbiosciences.com/colors.
7. Pacific Blue™ is a trademark of Molecular Probes, Inc., Eugene, OR.
8. Brilliant Violet™ 421 is a trademark of Sirigen.
9. Although hamster immunoglobulin isotypes have not been well defined, BD Biosciences Pharmingen has grouped Armenian and Syrian hamster IgG monoclonal antibodies according to their reactivity with a panel of mouse anti-hamster IgG mAbs. A table of the hamster IgG groups, Reactivity of Mouse Anti-Hamster Ig mAbs, may be viewed at http://www.bdbiosciences.com/documents/hamster_chart_11x17.pdf.

References

Agata Y, Kawasaki A, Nishimura H, Ishida Y, Tsubata T, Yagita H, Honjo T. Expression of the PD-1 antigen on the surface of stimulated mouse T and B lymphocytes. *Int Immunol.* 1996 May; 8(5):765-772. (Immunogen: Flow cytometry, Immunoprecipitation)

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Nishimura H, Minato N, Nakano T, Honjo T. Immunological studies on PD-1 deficient mice: implication of PD-1 as a negative regulator for B cell responses. *Int Immunol.* 1998; 10(10):1563-1572. (Biology)

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