

PD-1 (NAT105)

Mouse anti-human PD-1 Monoclonal Antibody (Clone NAT105)

REFERENCES AND PRESENTATIONS¹

- **ready-to-use (manual or LabVision AutoStainer)**
MAD-000671QD-3
MAD-000671QD-7
MAD-000671QD-12
- **Ready-to-use (MD-Stainer)²**
MAD-000671QD-3/V
MAD-000671QD/V
- **concentrated**
MAD-000671Q - 1:50 recommended dilution

COMPOSITION

Anti-human PD-1 mouse monoclonal antibody purified from serum and prepared in 10mM PBS, pH 7.4, with 0.2% BSA and 0.09% sodium azide

INTENDED USE : Immunohistochemistry (IHC) on paraffin embedded tissues. Not tested on frozen tissues or Western-Blotting

CLONE: NAT105

Ig ISOTYPE: Mouse IgG1

SPECIES REACTIVITY: In vitro diagnostics in humans. Not tested in other species

DESCRIPTION AND APPLICATIONS: Programmed death-1 (PD-1) is a member of the CD28 family of receptors that includes CD28, cytotoxic T-lymphocyte-associated antigen 4 (CTLA-4), inducible costimulator (ICOS), and B- and T-lymphocyte attenuator. These receptors play a role in the cellular immune response. For example, CD28 serves as a costimulatory receptor that enhances T-cell activation, whereas CTLA-4 serves as an inhibitor of T-cell activation. PD-1 also has an inhibitory function on T cells and B cells, and is important in peripheral tolerance. There are at least 2 ligands for PD-1, PD-L1, and PD-L2, which are expressed on a range of cells. CD28 is constitutively expressed on most or all CD4+ T cells and approximately 50% of CD8+ T cells, whereas CTLA-4 is

not expressed on resting T cells. PD-1 is also expressed on activated T cells, B cells, and myeloid cells. Iwai and coworkers studied the microanatomic distribution of PD-1 in human tonsil and found that PD-1 is expressed on most T cells and a small subset of B cells in the light zone of germinal centers, but not elsewhere in the tonsil. On that basis, it was postulated that PD-1 may play a role in the process of clonal selection of centrocytes, which occurs in this subanatomic site in germinal centers.

IHC POSITIVE CONTROL: Tonsil or lymph node

VISUALIZATION: Cytoplasmic

IHC RECOMMENDED PROCEDURE:

- 4µm thick section should be taken on charged slides; dry overnight at 60°C
- Deparaffinise, rehydrate and HIER (heat induced epitope retrieval) – boil tissue in the Pt Module using Vitro S.A EDTA buffer pH8³ for 20 min at 95°C. Upon completion rinse with 3-5 changes of distilled or deionised water followed by cooling at RT for 20 min
- Endogenous peroxidase block - Blocking for 10 minutes at room temperature using peroxidase solution (ref. MAD-021540Q-125)
- Primary antibody: incubate for 10 minutes [The antibody dilution (when concentrated) and protocol may vary depending on the specimen preparation and specific application. Optimal conditions should be determined by the individual laboratory]
- For detection use Master Polymer Plus Detection System (HRP) (DAB included; ref. MAD-000237QK)
- Counterstaining with haematoxylin and final mounting of the slide

STORAGE AND STABILITY:  Stored at 2-8°C. Do not freeze.  Once the packaging has been opened it can be stored until the expiration date of the reagent indicated on the label. If the reagent has been stored under other conditions to those indicated in this document, the user must first check its correct performance taking into account the product warranty is no longer valid.

¹ These references are for presentation in vials of Low Density Polyethylene (LDPE) dropper. In case the products are used in automated stainers, a special reference is assigned as follows:

- / L: Cylindrical screw-cap vials (QD-3 / L, QD-7 / L, QD-12 / L).

- / N: Polygonal screw-cap vials (QD-3 / N, QD-7 / N, QD-12 / N).

For different presentations (references / volumes) please contact the supplier.

² For Technical specifications for MD-Stainer, please contact your distributor.

³ Ref: MAD-004072R/D



Vitro S.A

Calle Luís Fuentes Bejarano 60 Ed. Nudo Norte Local 3 41020 Sevilla (Spain)
Tel: +34 954 933 200. vitra@vitro.bio; www.vitro.bio



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WARNINGS AND PRECAUTIONS:

1. Avoid contact of reagents with eyes and mucous membranes. If reagents come into contact with sensitive areas, wash with copious amounts of water.
2. This product is harmful if swallowed.
3. Consult local or state authorities with regard to recommended method of disposal.
4. Avoid microbial contamination of reagents.

SAFETY RECOMMENDATIONS

This product is intended for laboratory professional use only. The product is NOT intended to be used as a drug or for domestic purposes. The current version of the Safety Data Sheet for this product can be downloaded by searching the reference number at www.vitro.bio or can be requested at regulatory@vitro.bio.

BIBLIOGRAPHY

1. Iwai Y, Okazaki T, Nishimura H, Kawasaki A, Yagita H, Honjo T. Microanatomical localization of PD-1 in human tonsils. *Immunol Lett*; 83(3): 215-220. 2002.
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3. Konishi J, Yamazaki K, Azuma M, Kinoshita I, Dosaka-Akita H, Nishimura M. B7-H1 expression on non-small cell lung cancer cells and its relationship with tumor-infiltrating lymphocytes and their PD-1 expression. *Clin Cancer Res*; 10(15): 5094-100. 2004.
4. Kobayashi M, Kawano S, Hatachi S, Kurimoto C, Okazaki T, Iwai Y, Honjo T, Tanaka Y, Minato N, Komori T, Maeda S, Kumagai S. Enhanced expression of programmed death-1 (PD-1)/PD-L1 in salivary glands of patients with Sjögren’s syndrome. *J Rheumatol*; 32(11): 2156-2163. 2005.
5. Dorfman DM, Brown JA, Shahsafaei A, Freeman GJ. Programmed death-1 (PD-1) is a marker of germinal center-associated T cells and angioimmuno-blastic T-cell lymphoma. *Am J Surg Pathol*; 30(7):802-810. 2006.
6. Mataka N, Kikuchi K, Kawai T, Higashiyama M, Okada Y, Kurihara C, Hokari R, Kawaguchi A, Nagao S, Kondo T, Itoh K, Miyakawa H, Miura S. Expression of PD-1, PD-L1, and PD-L2 in the liver in autoimmune liver diseases. *Am J Gastroenterol*; 102(2): 302-312. 2007.
7. Hamanishi J, Mandai M, Iwasaki M, Okazaki T, Tanaka Y, Yamaguchi K, Higuchi T, Yagi H, Takakura K, Minato N, Honjo T, Fujii S. Programmed cell death 1 ligand 1 and tumor-infiltrating CD8+ T lymphocytes are prognostic factors of human ovarian cancer. *Proc Natl Acad Sci U S A*; 104(9): 3360-3365. 2007.

LABEL AND BOX SYMBOLS

Explanation of the symbols of the product label and box:

	Expiration date
	Temperature limit
	Manufacturer
	Sufficient content for <n> assays
	Catalog number
	Lot code
	Refer to the instructions of use
	Medical product for <i>in vitro</i> diagnosis.
	Material safety data sheet