Anti-mouse CD3 / DIA-303
Rat monoclonal anti-mouse T-cell marker CD3e (TCRE), Clone HH3E

Product Information

Catalog No.:	**DIA-303** (100µg)
Clone:	HH3E
Concentration:	0.2 mg/ml
Isotype:	Rat IgG1/kappa
Specificity:	Murine CD3 epsilon chain (TCRE) (Normal T-cells and T-cell neoplasms)
Immunogen:	Synthetic peptide from cytoplasmic epitope of CD3: ERPPPVPNPDYEPC
Species Reactivity:	Mouse, human, rabbit, canine, feline, equine, bovine, ovine, porcine, avian, simian
Physical State:	Lyophilized powder
Reconstitution:	DIA-303 (100 µg), restore to 500 µl Reconstitute with sterile distilled water by gentle shaking for 10 minutes
Presentation:	PBS with 2% BSA, 0.05% NaN3, pH 7.4. Antibody purified from culture supernatant
Applications:	Immunohistochemistry (standard formalin-fixed paraffin and frozen sections) WB, IP, Flow cytometry
Dilutions:	1:100 Immunohistochemistry (**IHC FFPE**) (General recommendation, validation of antibody performance/protocol using proper controls is the responsibility of the end user.)

Reactivity

Antibody clone HH3E has been validated specifically for the detection of murine CD3 in formalin-fixed paraffin-embedded tissue sections (mouse FFPE). It detects a conserved epitope on the CD3 epsilon chain in a broad variety of species. CD3 is a defining feature of cells belonging to the T cell lineage and can therefore be used as T cell marker.
Cluster of differentiation 3 (CD3) is composed of four distinct polypeptide chains CD3 gamma, CD3 delta, CD3 epsilon and CD3 zeta, that form a multimeric protein complex. The CD3 complex associates non-covalently with the T cell receptor (TCR) and serves as a T cell co-receptor. The CD3 components have long cytoplasmic tails that associate with cytoplasmic signal transduction molecules. The T cell antigen receptor (TCR) recognizes foreign antigens and translates such recognition events into intracellular signals that elicit a change in the cell from a dormant to an activated state. During T cell maturation the expression of CD3 migrates from the cytoplasm of pro-thymocytes to the cell-membrane of thymocytes. The specific appearance at all stages of T cell development make CD3 an ideal marker for normal T cells and T cell neoplasms (lymphomas, leukemias). Moreover, CD3 is a useful immunohistochemical marker for T cells in tissue sections.
In a clinical setting in humans, CD3 serves as an important T cell marker for the classification of malignant lymphomas and leukemias. It can also be used to detect T cells in coeliac disease, lymphocytic and collagenous colitis. An anti-CD3 epsilon antibody (Okt3) has been clinically approved for the induction of immunosuppression in organ transplantation. In animal studies anti-CD3 antibodies can induce tolerance to allografts.

Instructions for Use

Immunohistochemical staining of standard formalin-fixed paraffin sections

Deparaffinize and rehydrate according to standard procedures. Heat induced epitope retrival (HIER) is required. Different techniques can be used for immunohistochemical detection: Indirect immunoenzyme labeling with a secondary antibody conjugate, biotin/(strept)avidin-based detection, soluble enzyme immune complex or polymer-based detection. To detect antibody, follow the instructions provided with the particular visualization system.

Storage and Stability

The antibody clone HH3E in lyophilised form is stable for at least one year (-20°). As reconstituted liquid store at 2-8°C short term (several weeks). For long term storage aliquot and freeze at -20°C or -80°C. Avoid repeated freeze / thaw cycles.

Safety Notes

The material contains 0.05% sodium azide as preservative. Although the quantity of azide is very small, appropriate care should be taken when handling this material. Avoid skin and eye contact, inhalation, and ingestion.

For research use only. Not for diagnostic or therapeutic use.

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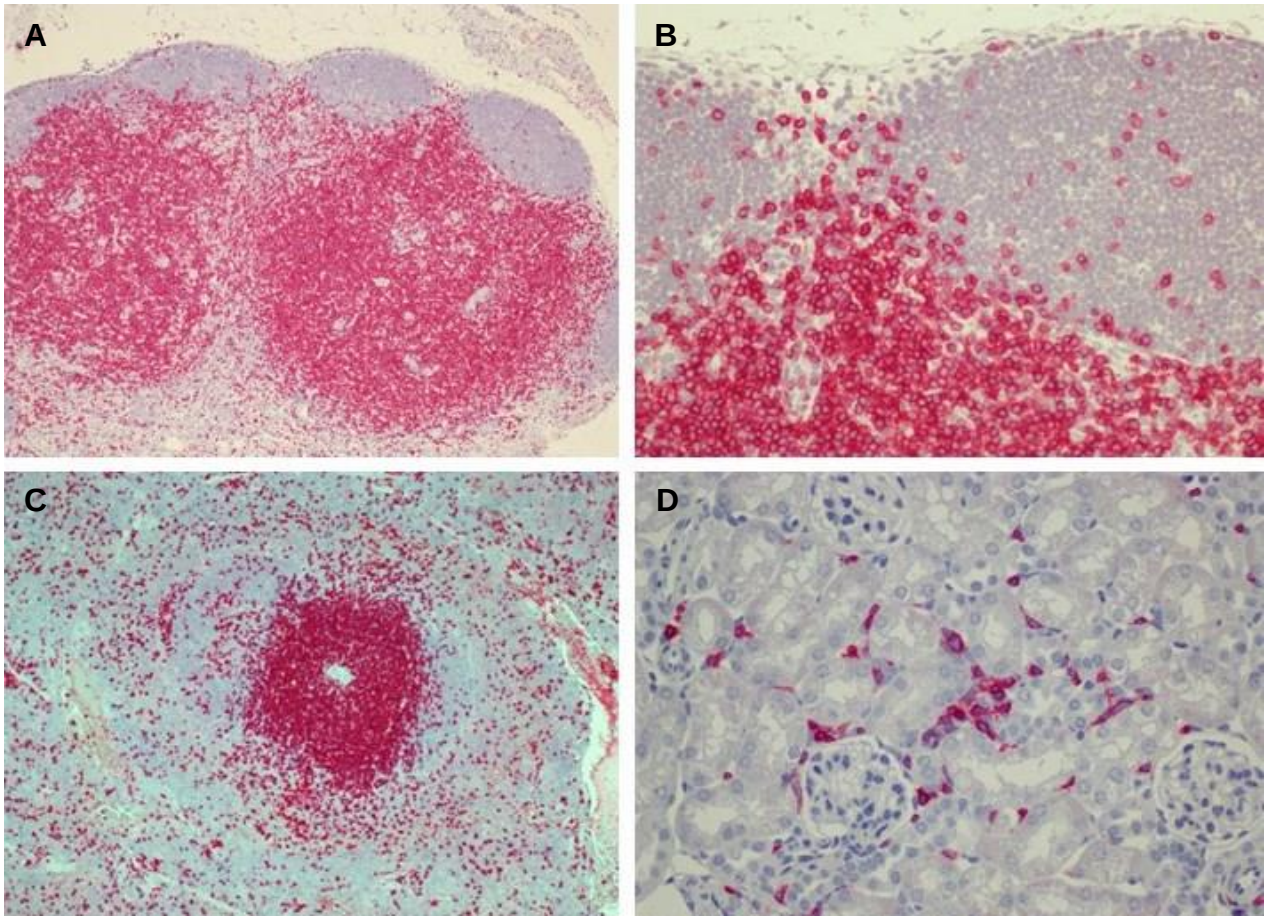
Figure 1



Immunohistochemistry of mouse CD3e (TCRE) in formalin-fixed paraffin-embedded tissue sections
(pictures courtesy of Prof. Dr. H. Stein, Pathodiagnostik-Berlin, Berlin, Germany)

The monoclonal antibody clone HH3E specifically stains mouse tissue sections by IHC-FFPE: Lymph nodes (**A**, **B**), spleen (**C**) and kidney (**D**). All sections were stained by an indirect alkaline phosphatase method according to standard procedures with antigen retrieval by high-temperature heating in citrate buffer and counterstaining with Haematoxylin.

Specific References for anti-ms CD3e, clone HH3E

1. Hashimoto A, Sato T, Iyama S, Yoshida M, Ibata S, Tatekoshi A, Kamihara Y, Horiguchi H, Murase K, Kawano Y, Takada K, Miyanishi K, Kobune M, Ichimiya S, Kato J. Narrow-Band Ultraviolet B Phototherapy Ameliorates Acute Graft-Versus-Host Disease of the Intestine by Expansion of Regulatory T Cells. PLoS ONE. 2016;11(3):e0152823. PMCID: PMC4816442

Related References

1. Leon F. Flow cytometry of intestinal intraepithelial lymphocytes in celiac disease. *Journal of Immunological Methods* 363: 177-186, 2011
2. Smith-Garvin JE et al.. T cell activation. *Annu Rev Immunol.* 27:591-619, 2009
3. Sapp H et al. The terminal ileum is affected in patients with lymphocytic or collagenous colitis. *Am J Surg Pathol.* 26(11):1484-1492, 2002
4. Vernau W, Moore PF. An immunophenotypic study of canine leukemias and preliminary assessment of clonality by polymerase chain reaction. *Vet Immunol Immunopathol.* 69:145-164, 1999
5. Mosnier et al. Lymphocytic and collagenous colitis: an immunohistochemical study. *Am J Gastroenterol.* 91(4):709-713, 1996
6. Chetty R, Gatter K. CD3: Structure, function, and role of immunostaining in clinical practice. *The Journal of Pathology* 173(4): 303–307, 1994
7. Salvadori S et al. Abnormal signal transduction by T cells of mice with parental tumors is not seen in mice bearing IL-2-secreting tumors. *J Immunol.* 153(11):5176-5182, 1994
8. Nicolls MR et al. Induction of long-term specific tolerance to allografts in rats by therapy with an anti-CD3-like monoclonal antibody. *Transplantation* 55(3):459-468, 1993

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