

CD103/ITGAE Control Slides



Intended Use

For In Vitro Diagnostic Use.

Summary and Explanation

Integrin, alpha E, also known as CD103, is an integrin protein that in human is encoded by the ITGAE gene. CD103 binds integrin beta 7 to form the complete heterodimeric integrin molecule $\alpha E\beta 7$. CD103 is expressed widely on intraepithelial lymphocyte T cells (both $\alpha \beta$ T cells and $\gamma \delta$ T cells) and on some peripheral regulatory T cells. It has also been reported on lamina propria T cells. A subset of dendritic cells in the gut mucosa and in mesenteric lymph nodes also expresses this marker and is known as CD103 DCs. The chief ligand for $\alpha E\beta 7$ is E-cadherin, an adhesion molecule found on epithelial cells.

CD103 has been found in mononuclear cells in the interfollicular area of lymph nodes and in intraepithelial cells in the overlying mucosa located primarily toward the basal layer of the tonsil. CD103 is useful in identifying Hairy Cell Leukemia, which is positive for this marker in most cases in contrast to other hematologic malignancies which are negative for CD103, with the exception of Splenic Marginal Zone Lymphoma, which rarely expresses CD103. The high sensitivity of anti-CD103 for Hairy Cell Leukemia makes this marker valuable when distinguishing this malignancy from other B-cell neoplasms.

Presentation

Five slides of CD103/ITGAE positive tissues, each mounted on Hydrophilic Plus Slides, provided in a plastic mailer.

Catalog No.	Quantity
BSB-9059-CS	5 slides
BSB 2865	5 slides

Storage Store at 20-25°C

Precautions

1. For professional users only. Results should be interpreted by a qualified medical professional.
2. Ensure proper handling procedures are used with this reagent.
3. Always wear personal protective equipment such as a laboratory coat, goggles, and gloves when handling reagents.
4. Dispose of unused solution with copious amounts of water.
5. Follow safety precautions of the heating device used for epitope retrieval (TintoRetriever Pressure Cooker or similar).
8. For additional safety information, refer to Safety Data Sheet for this product.
9. For complete recommendations for handling biological specimens, please refer to the CDC document, "Guidelines for Safe Work Practices in Human and Animal Medical Diagnostic Laboratories" (see References in this document).

Stability

This product is stable up to the expiration date on the product label.

Do not use after expiration date listed on package label.

IHC Protocol

1. Subject tissues to heat induced epitope retrieval (HIER) using a suitable retrieval solution such as ImmunoDNA Retriever with Citrate (BSB 0020-BSB 0023) or EDTA (BSB 0030-BSB 0033).

2. Any of three heating methods may be used:

a. TintoRetriever Pressure Cooker or Equivalent

Place tissues/slides in a staining dish or coplin jar containing the ImmunoDNA Retriever with Citrate or EDTA and place on trivet in the pressure cooker. Add 1-2 inches of distilled water to the pressure cooker and turn heat to high. Incubate for 15 minutes. Open and immediately transfer slides to room temperature.

b. TintoRetriever PT Module or Water Bath Method

Place tissues/slides in a pre-warmed staining dish or coplin jar containing the ImmunoDNA Retriever with Citrate or EDTA at 95°-99° C. Incubate for 30-60 minutes.

c. Conventional Steamer Method

Place tissues/slides in a pre-warmed staining dish or coplin jar containing the ImmunoDNA Retriever with Citrate or EDTA in a steamer, cover and steam for 30-60 minutes.

3. After heat treatment, transfer slides in ImmunoDNA Retriever with Citrate or EDTA to room temperature and let stand for 15-20 minutes.
4. For manual staining, perform antibody incubation at ambient temperature. For automated staining methods, perform antibody incubation according to instrument manufacturer's instructions.
5. Wash slides with ImmunoDNA washer or DI water.
6. Continue IHC staining protocol. Wash slides between each step with ImmunoDNA washer solution.

Abbreviated Immunohistochemical Protocol

Step	ImmunoDetector AP/HRP	PolyDetector AP/HRP	PolyDetector Plus HRP
Peroxidase/AP Blocker	5 min.	5 min.	5 min.
Primary Antibody	30-60 min.	30-60 min.	30-60 min.
1st Step Detection	10 min.	30-45 min.	15 min.
2nd Step Detection	10 min.	Not Applicable	15 min.
Substrate- Chromogen	5-10 min.	5-10 min.	5-10 min.
Counterstain / Coverslip	Varies	Varies	Varies

Abbreviated IF Protocol

Step	Incubation Time
Rinse slides in IF wash buffer	5 minutes
Drain and wipe excess IF wash buffer off slide	
Conduct remaining steps in the dark	
Apply Antibody	30-60 minutes
Rinse with 3 changes of IF wash buffer	3x15 minutes each
Coverslip with IF mounting medium	

Mounting Protocols

For detailed instructions using biodegradable permanent mounting media such as XyGreen PermaMunter (BSB 0169-0174) or organic solvent based resin such as PermaMunter (BSB 0094-0097), refer to PI0174 or PI0097.

Product Limitations

Due to inherent variability present in immunohistochemical procedures (including fixation time of tissues, dilution factor of antibody, retrieval method utilized, and incubation time), optimal performance should be established through the use of positive and negative controls. Results should be interpreted by a qualified medical professional.

References

1. Kilshaw PJ, Higgins JM. Alpha E: no more rejection?. J. Exp. Med. 2002; 196 (7): 873-5.
2. Lehmann J, et al. Expression of the integrin alpha Ebeta 7 identifies unique subsets of CD25+ as well as CD25- regulatory T cells. Proc. Natl. Acad. Sci. U.S.A. 2002; 99 (20): 13031-6.
3. Aziz S, et al. Replication of M-tropic HIV-1 in activated human intestinal lamina propria lymphocytes is the main reason for increased virus load in the intestinal mucosa. J. Acquir. Immune Defic. Syndr. 2005; 38 (1): 23-30.
4. Johansson-Lindbom B, et al. Functional specialization of gut CD103+ dendritic cells in the regulation of tissue-selective T cell homing. J. Exp. Med. 2005; 202 (8): 1063-73.
5. Swerdlow SH, et al. WHO Classification of Tumours of Haematopoietic and Lymphoid Tissues. World Health Organization Classification of Tumours, 2008; 4 ed. Geneva: World Health Organization. ISBN 92-832-2431-0.
6. Hadley GA, et al. The epithelial cell-specific integrin, CD103 (alpha E integrin), defines a novel subset of alloreactive CD8+ CTL J. Immunol. 1997; 159 (8): 3748-56.
7. Agace WW, et al. T-lymphocyte-epithelial-cell interactions: integrin alpha(E)(CD103)beta(7), LEEP-CAM and chemokines". Curr. Opin. Cell Biol. 2000; 12(5): 563-8
8. Dong HY, et al. Immunophenotypic analysis of CD103+ B-lymphoproliferative disorders: hairy cell leukemia and its mimics. Am J Clin Pathol. 2009; 131:586-95.
9. Morgan EA, et al. Immunohistochemical detection of hairy cell leukemia in paraffin sections using a highly effective CD103 rabbit monoclonal antibody. Am J Clin Pathol. 2013; 139: 220-30.
10. U.S. Department of Health and Human Services: Centers for Disease Control and Prevention. Guidelines for Safe Work Practices in Human and Animal Medical Diagnostic Laboratories. Supplement / Vol. 61, January 6, 2012. <https://www.cdc.gov/mmwr/pdf/other/su6101.pdf>

Symbol Key / Légende des symboles/Erläuterung der Symbole

EC REP	QAdvis EAR AB Ideon Science Park Scheelevägen 17 SE-223 70 Lund, Sweden	 Storage Temperature Limites de température Zulässiger Temperaturbereich	 Manufacturer Fabricant Hersteller	REF	Catalog Number Référence du catalogue Bestellnummer
IVD	In Vitro Diagnostic Medical Device Dispositif médical de diagnostic in vitro In-Vitro-Diagnostikum	 Read Instructions for Use Consulter les instructions d'utilisation Gebrauchsanweisung beachten	 Expiration Date Utiliser jusque Verwendbar bis	LOT	Lot Number Code du lot Chargenbezeichnung