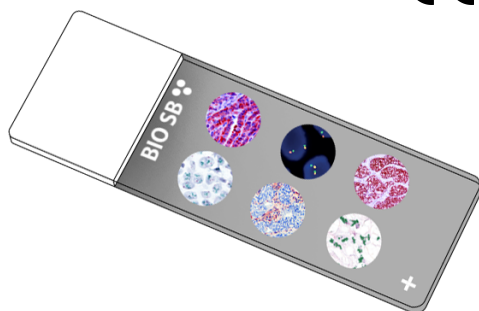


LIN28 Control Slides



Intended Use

For In Vitro Diagnostic Use.

Summary and Explanation

LIN28 homolog A is a protein that in humans is encoded by the LIN28 gene. LIN28 is thought to regulate the self-renewal of stem cells, is highly expressed in human embryonic stem cells and can enhance the efficiency of the formation of induced pluripotent stem cells from human fibroblasts.

LIN28 has been found to be a highly sensitive marker for testicular intratubular germ cell neoplasias, classic seminomas, embryonal carcinomas, and yolk sac tumors with relatively high specificity. LIN28 can be used as a diagnostic marker for these tumors and has demonstrated a similar level of diagnostic utility as SALL4. The major advantage of LIN28 over OCT4 is in diagnosing yolk sac tumors (yolk sac tumors negative for OCT4). In another study, LIN28 was found to be a sensitive marker of ovarian primitive germ cell tumors like Gonadoblastomas, Dysgerminomas, Embryonal Carcinomas, and YSTs. LIN28 can be used to distinguish them from non- testicular germ cell tumors. High expression of Lin28 is associated with poor prognosis and high tumor aggressiveness in esophageal cancer and these effects are mediated through increased proliferation and invasiveness of esophageal cancer cells.

Presentation

Five slides of LIN28 positive tissues, each mounted on Hydrophilic Plus Slides, provided in a plastic mailer.

<i>Catalog No.</i>	<i>Quantity</i>
BSB-9261-CS	5 slides
BSB 3566	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. Moss EG, Tang L (Jun 2003). "Conservation of the heterochronic regulator Lin-28, its developmental expression and microRNA complementary sites". *Developmental Biology*. 2003; 258 (2): 432-42.
2. Richards M, et al. "The transcriptome profile of human embryonic stem cells as defined by SAGE". *Stem Cells*. 2004; 22 (1): 51-64.
3. Yu J, et al. "Induced pluripotent stem cell lines derived from human somatic cells". *Science*. 2007; 318 (5858): 1917-20.
4. Cao D, et al. RNA-binding protein LIN28 is a marker for testicular germ cell tumors. *Hum Pathol*. 2011 May;42(5):710-8.
5. Xe D, et al. RNA-binding protein LIN28 is a sensitive marker of ovarian primitive germ cell tumours. *Histopathology*. 2011 Sep;59(3):452-9.
6. Hamano R, et al. High expression of Lin28 is associated with tumour aggressiveness and poor prognosis of patients in oesophagus cancer. *Br J Cancer*. 2012 Apr 10;106(8):1415-23.
7. 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