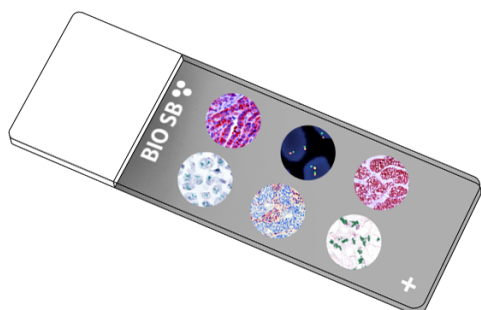


# CD147

## Control Slides



### Intended Use

For In Vitro Diagnostic Use.

### Summary and Explanation

CD147 is a transmembrane glycoprotein also known as Basigin or EMMPRIN (Extracellular Matrix Metalloproteinase Inducer), participating in tumor development and viral entry pathways. CD147 is a member of the immunoglobulin superfamily, upregulated in asthmatic, diabetic, and other inflammatory pathways where it induces expression of Matrix Metalloproteinase 1 and 9. CD147 and its effectors are induced by high-glucose concentration in monocytes and promote their migration. CD147 also participates in fibroblast differentiation through TGF- $\beta$ 1-induced signaling pathways, and is a marker of undifferentiated human embryonic stem cells. CD147 has been found to be upregulated in cancer stem cells, resulting in increased metabolism through lactic acid export, increased production of hyaluronan, inhibiting apoptosis, and acting as a main upstream stimulator of matrix metalloproteinases. In clinical studies, CD147 has been associated with larger tumors, deeper invasion, and more lymphocytes. CD147 also facilitates the entry of malaria parasite *Plasmodium falciparum* into red blood cells, and the entry of coronaviruses into human cells by binding the spike glycoprotein, functioning as the second receptor for SARS-CoV-2 and potential participant in pulmonary fibrosis.

### Presentation

Five slides of CD147 positive tissues, each mounted on Hydrophilic Plus Slides, provided in a plastic mailer.

Catalog No.	Quantity
BSB-9071-CS	5 slides
BSB-3704-CS	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. Wang, Ke, et al. SARS-CoV-2 invades host cells via a novel route: CD147-spike protein. bioRxiv. 2020 Mar 14. <https://www.biorxiv.org/content/10.1101/2020.03.14.988345v1>
2. Ulrich, Henning and Micheli M Pillat. CD147 as a Target for COVID-19 Treatment: Suggested Effects of Azithromycin and Stem Cell Engagement. Stem Cell Rev Rep. 2020 Apr 20: 1-7. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7167302/>
3. Xin, Xiaoyan, et al. CD147/EMMPRIN overexpression and prognosis in cancer: A systematic review and meta-analysis. Scientific Reports. 2016 Sept 9; 6:32804. <https://www.nature.com/articles/srep32804>
4. Landras, Alexandra et al. CD147 Is a Promising Target of Tumor Progression and a Prognostic Biomarker. Cancers (Basel). 2019 Nov; 11(11): 1803. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6896083/>
5. 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.

### Symbol Key / Légende des symboles/Erläuterung der Symbole

<b>EC</b> <b>REP</b> QAdvis EAR AB Ideon Science Park Scheelevägen 17 SE-223 70 Lund, Sweden	 Storage Temperature Limites de température Zulässiger Temperaturbereich	 Manufacturer Fabricant Hersteller	<b>REF</b> Catalog Number Référence du catalogue Bestellnummer
<b>IVD</b> 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 jusqu'à Verwendbar bis	<b>LOT</b> Lot Number Code du lot Chargenbezeichnung