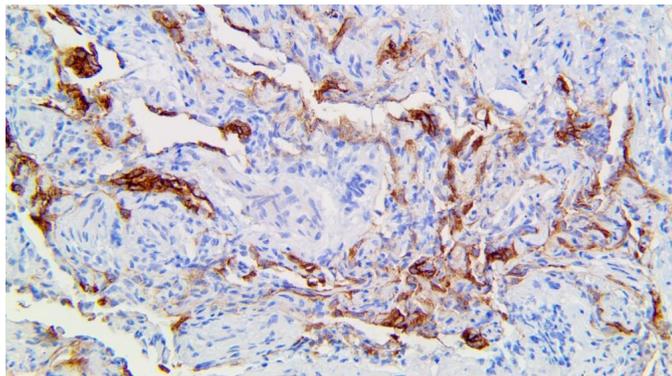


CD142/TF/Coagulation Factor III

Clone: BSB-143
Mouse Monoclonal



Inset: IHC of CD142/TF/Coagulation Factor III on a FFPE SARS-CoV-2 Infected Lung Tissue

Intended Use

For In Vitro Diagnostic Use.

This antibody is intended for use in Immunohistochemical applications on formalin-fixed paraffin-embedded tissues (FFPE), frozen tissue sections, and cell preparations. Interpretation of results should be performed by a qualified medical professional.

Immunogen

Synthetic peptide corresponding to the internal region of the human CD142 protein.

Summary and Explanation

CD142, also known as Tissue Factor (TF) or Coagulation Factor III or Thromboplastin, is encoded by the *F3* gene located on chromosome 1p21.3. CD142/TF is a 46 kDa sized integral membrane glycoprotein. Upon complex formation with coagulation factor VII, extrinsic blood coagulation is activated by a catalytic cascade that involves specific proteolysis.

CD142/TF is not only associated with the progression, but also with the overall survival rate of many cancers, including breast, gastrointestinal, liver, pancreatic, and prostate cancer. A study that investigated CD142 expression in non-small-cell lung cancer (NSCLC) found that immunohistochemical staining was increased in NSCLC patients with metastasis, compared to patients without metastasis, indicating the critical role of CD142 in the progression of NSCLC. A study found increased CD142 levels in breast cancer tissue as well as a correlation between poor survival and high levels of CD142 expression in breast cancer patients. Overexpression of TF in fibrosarcoma, in gastric cancer cells and in melanoma cells enhances tumour growth by diminishing the transcription of antiangiogenic thrombospondins and/or by increasing the transcription of pro-angiogenic VEGF.

The SARS-CoV-2 virus triggers the synthesis and release of pro-inflammatory cytokines, including IL-6 and TNF- α and also promotes downregulation of ACE-2, which promotes a concomitant increase in levels of angiotensin II (AT-II). Both TNF- α and AT-II have been implicated in promoting overexpression of tissue factor (TF) in platelets and macrophages. Additionally, the generation of antiphospholipid antibodies associated with COVID-19 may also promote an increase in TF. TF may be a critical mediator associated with the development of thrombotic phenomena in COVID-19.

Antibody Type	Mouse Monoclonal	Clone	BSB-143
Isotype	IgG2b	Reactivity	Paraffin, Frozen
Localization	Cytoplasmic, Membranous	Species Reactivity	Human, Mouse, Rat
Control	Placenta, Cervix, Colon, Pancreas, Brain, Kidney, Testis, Pancreatic Carcinoma, Colon Adenocarcinoma		
Application	Lung Cancer, Breast Cancer, Colon & Gastrointestinal Cancer, Prostate Cancer, Liver Cancer, Gall Bladder & Pancreatic Cancer & Infectious Diseases		

Presentation

Anti-CD142/TF/Coagulation Factor III is a mouse monoclonal antibody derived from cell culture supernatant that is concentrated, dialyzed, filter sterilized and diluted in buffer pH 7.5, containing BSA and sodium azide as a preservative.

Catalog No.	Presentation	Dilution	Volume
BSB-3718-3	Predilute	Ready-to-Use	3.0 mL
BSB-3718-7	Predilute	Ready-to-Use	7.0 mL
BSB-3718-15	Predilute	Ready-to-Use	15.0 mL
BSB-3718-01	Concentrate	1:50-1:200	0.1 mL
BSB-3718-05	Concentrate	1:50-1:200	0.5 mL
BSB-3718-1	Concentrate	1:50-1:200	1.0 mL

Control Slides Available

Catalog No.	Quantity
BSB-9069-CS	5 slides

Storage Store at 2-8°C (Control Slides: Store at 20-25°C)

Precautions

- For professional users only. Results should be interpreted by a qualified medical professional.
- This product contains <0.1% sodium azide (NaN₃) as a preservative. Ensure proper handling procedures are used with this reagent.
- Always wear personal protective equipment such as a laboratory coat, goggles, and gloves when handling reagents.
- Dispose of unused solution with copious amounts of water.
- Do not ingest reagent. If reagent is ingested, seek medical advice immediately.
- Avoid contact with eyes. If contact occurs, flush with large quantities of water.
- Follow safety precautions of the heating device used for epitope retrieval (TintoRetriever Pressure Cooker or similar).
- For additional safety information refer to Safety Data Sheet for this product.
- 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 the package label. Temperature fluctuations should be avoided. Store appropriately when not in use, and avoid prolonged exposure to room temperature conditions.

Specimen Preparation

Paraffin sections: The antibody can be used on formalin-fixed paraffin-embedded (FFPE) tissue sections. Ensure tissue undergoes appropriate fixation for best results. Pre-treatment of tissues with heat-induced epitope retrieval (HIER) is recommended using Bio SB ImmunoDNA Retriever with Citrate (BSB 0020-BSB 0023), ImmunoDNA Retriever with EDTA (BSB 0030-BSB 0033), or ImmunoDNA Digestor (BSB 0108-0112). See reverse side for complete protocol. Tissue should remain hydrated via use of Bio SB Immuno/DNA Washer solutions (BSB 0029 & BSB 0042).

Frozen sections and cell preparations: The antibody can be used on acetone-fixed frozen sections and acetone-fixed cell preparations.

IHC Protocol

1. Cut and mount 3-5 micron formalin-fixed paraffin-embedded tissues on positively charged slides such as Bio SB Hydrophilic Plus Slides (BSB 7028).
2. Air dry for 2 hours at 58° C.
3. Deparaffinize, dehydrate and rehydrate tissues.
4. 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).
5. 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.
6. After heat treatment, transfer slides in ImmunoDNA Retriever with Citrate or EDTA to room temperature and let stand for 15-20 minutes.
 7. For manual IHC, perform antibody incubation at ambient temperature. For automated IHC methods, perform antibody incubation according to instrument manufacturer's instructions.
 8. Wash slides with ImmunoDNA washer or DI water.
 9. Continue IHC protocol. Wash slides between each step with ImmunoDNA washer solution.

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

Mounting Protocols

For detailed instructions using biodegradable permanent mounting media such as XyGreen PermaMounter (BSB 0169-0174) or organic solvent based resin such as PermaMounter (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. Chu AJ. Tissue factor, blood coagulation, and beyond: an overview. *Int J Inflam.* 2011;2011:367284. doi: 10.4061/2011/367284.
2. F3 coagulation factor III, tissue factor [Homo sapiens (human)]. <https://www.ncbi.nlm.nih.gov/gene?Db=gene&Cmd=DetailsSearch&Term=2152>.
3. Sawada M, et al. Expression of tissue factor in non-small-cell lung cancers and its relationship to metastasis. *Br J Cancer.* 1999;79(3-4):472-7. doi: 10.1038/sj.bjc.6690073.
4. Ueno T, et al. Tissue factor expression in breast cancer tissues: its correlation with prognosis and plasma concentration. *Br J Cancer.* 2000;83(2):164-70. doi: 10.1054/bjoc.2000.1272.
5. Van den Berg YW, et al. The relationship between tissue factor and cancer progression: insights from bench and bedside. *Blood.* 2012;119(4):924-32. doi: 10.1182/blood-2011-06-317685.
6. Bautista Vargas, M., et al. Potential role for tissue factor in the pathogenesis of hypercoagulability associated with in COVID-19. *J Thromb Thrombolysis.* 2020 Jun 9: 1-5. doi: 10.1007/s11239-020-02172-x
7. U.S. Department of Health and Human Services: Centers for Disease Control and Prevention. Guidelines for Safe WorkPractices in Human and Animal Medical Diagnostic Laboratories. Supplement / Vol. 61, January 6, 2012. <https://www.cdc.gov/mmwr/pdf/other/su6101.pdf>

Abbreviated Immunohistochemical Protocol

Symbol Key / Légende des symboles/Erläuterung der Symbole

	QAdvis EAR AB Ideon Science Park Scheelevägen 17 SE-223 70 Lund, Sweden	 Storage Temperature Limites de température Zulässiger Temperaturbereich	 Manufacturer Fabricant Hersteller	 Catalog Number Référence du catalogue Bestellnummer
	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 Number Code du lot Chargenbezeichnung