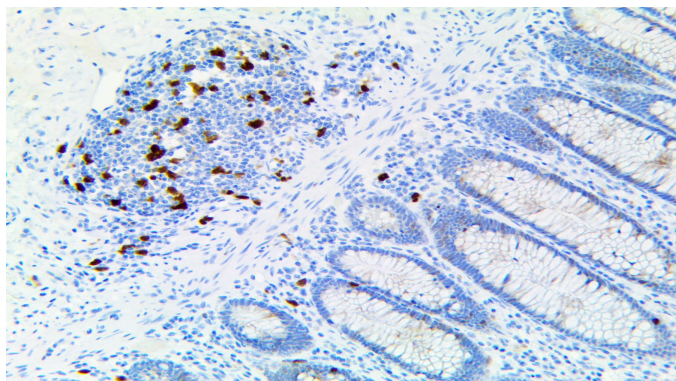


Thymidylate Synthase/TS

Clone: BSB-160
Mouse Monoclonal



Inset: IHC of Thymidylate synthase/TS on a FFPE Colon 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 C-terminus of human TS protein.

Summary and Explanation

Thymidylate synthase (TS) catalyzes the methylation of deoxyuridine monophosphate to deoxythymidine monophosphate using 5, 10-methylenetetrahydrofolate as a cofactor. This enzyme is critical for DNA repair and replication. Polymorphism of the gene *TYMS*, which encodes TS, may be associated with etiology of neoplasia and responses to chemotherapy. TS inhibitors like 5-fluorouracil have been successful in down-regulating tumor progression and increasing immune responses in pancreatic, breast, gastric, ovarian, lung, and head & neck cancer.

A study reported TS protein expression (PE) and gene copy number (GCN) were assayed using IHC and silver in situ hybridization (SISH), respectively, on primary tumors of resected non-small cell lung (NSCLC) patients and concluded that TS PE and GCN vary widely in NSCLC and correlate significantly to each other. TS GCN is higher in SCCs, whereas TS PE does not associate with histological subtypes, clinical features or survival. Variability of TS PE and GCN may indicate potential benefit from pemetrexed therapy in selected SCC patients. A number of studies have investigated the relationship between thymidylate synthase (TS) expression and survival in colorectal cancer (CRC) patients. Most have reported poorer overall and progression-free survival with high TS expression. Another study suggests that immunostaining for TS and p53 protein is useful for pretreatment selection of gastric cancer patients unresponsive to S-1/cisplatin chemotherapy.

Antibody Type	Mouse Monoclonal	Clone	BSB-160
Isotype	IgG2a	Reactivity	Paraffin, Frozen
Localization	Nuclear, Cytoplasmic, Membranous	Species Reactivity	Human, Mouse, Rat
Control	Bone Marrow, Colon, Tonsil, Testis, T Cell Lymphoblastic Lymphoma, Ductal Breast Carcinoma		
Application	Gallbladder and Pancreatic Cancer, Breast Cancer, Ovarian Cancer, Lung Cancer, Head and Neck Cancer		

Presentation

Anti-Thymidylate synthase/TS 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.

<i>Catalog No.</i>	<i>Presentation</i>	<i>Dilution</i>	<i>Volume</i>
BSB-3750-3	Predilute	Ready-to-Use	3.0 mL
BSB-3750-7	Predilute	Ready-to-Use	7.0 mL
BSB-3750-15	Predilute	Ready-to-Use	15.0 mL
BSB-3750-01	Concentrate	1:25-1:100	0.1 mL
BSB-3750-05	Concentrate	1:25-1:100	0.5 mL
BSB-3750-1	Concentrate	1:25-1:100	1.0 mL

Control Slides Available

<i>Catalog No.</i>	<i>Quantity</i>
BSB-3750-CS	5 slides

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

Precautions

1. For professional users only. Results should be interpreted by a qualified medical professional.
2. This product contains <0.1% sodium azide (NaN₃) as a preservative. 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. Do not ingest reagent. If reagent is ingested, seek medical advice immediately.
6. Avoid contact with eyes. If contact occurs, flush with large quantities of water.
7. 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 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.

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

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.

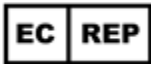







Product Limitations

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

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Symbol Key/Légende des symboles/Erläuterung der Symbole

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