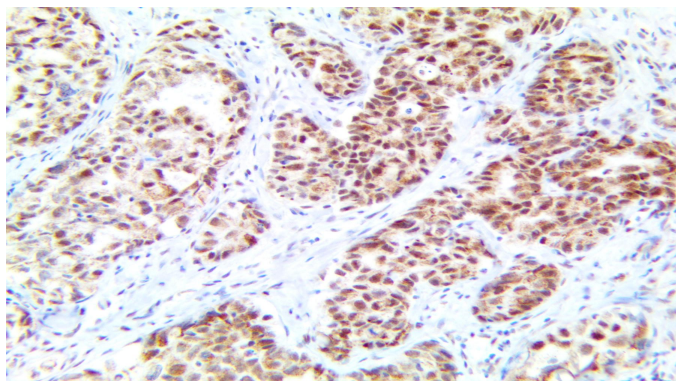


TDP-43/TARDBP

Clone: BSB-166
Mouse Monoclonal



Inset: IHC of TDP-43/TARDBP on a FFPE Lung Adenocarcinoma 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 N-terminus of the human TARDBP protein.

Summary and Explanation

Transactive Response DNA binding protein 43 (TDP-43 or TARDBP) is an RNA and DNA binding protein in the heterogeneous nuclear ribonucleoprotein (hnRNP) family, where it regulates RNA associated with glucose and lipid metabolism.

TDP-43/TARDBP is associated with several neurodegenerative conditions amyotrophic lateral sclerosis (ALS) and frontotemporal lobar degeneration (FTLD) and metabolic regulation in cancer cells. TDP-43/TARDBP regulation of miRNAs has both tumor supporting and suppressive roles. Upregulation of TDP-43/TARDBP can lead to continued autophagy for survival and suppression of apoptosis pathways, promoting cancer cell survival under conditions of nutrient stress, as was seen in a study of glioblastomas. TDP-43/TARDBP and its targeted miRNAs have been associated with increased cell growth and migration in hepatocellular and lung cancers, but also with tumor inhibition in rhabdomyosarcomas through miRNA miR-500a-3p. TDP-43/TARDBP may also influence the function and targets of MiR-152, and miRNA associated with hepatocellular carcinoma, endometrial, gastric, and ovarian cancers. TDP-43/TARDBP has been found to be a novel oncogene in melanoma and regulates melanoma proliferation and metastasis potentially through modulation of glucose metabolism. TDP43, has been found to promote triple-negative breast cancer (TNBC) progression.

Antibody Type	Mouse Monoclonal	Clone	BSB-166
Isotype	IgG2a	Reactivity	Paraffin, Frozen
Localization	Nuclear, Cytoplasmic	Species Reactivity	Human, Mouse, Rat, reactive with Horse, Dog, Bovine
Control	Breast, Fallopian Tube, Testis, Skin, Transitional Cell Carcinoma, Glioblastoma		
Application	Breast Cancer, Melanoma and Skin Cancer, Liver Cancer, Lung Cancer, Sarcoma and Soft Tissue Cancer, Endometrial Cancer, Gastric Cancer, Ovarian Cancer		

Presentation

Anti-TDP-43/TARDBP 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-3776-3	Predilute	Ready-to-Use	3.0 mL
BSB-3776-7	Predilute	Ready-to-Use	7.0 mL
BSB-3776-15	Predilute	Ready-to-Use	15.0 mL
BSB-3776-01	Concentrate	1:50-1:200	0.1 mL
BSB-3776-05	Concentrate	1:50-1:200	0.5 mL
BSB-3776-1	Concentrate	1:50-1:200	1.0 mL

Control Slides Available

<i>Catalog No.</i>	<i>Quantity</i>
BSB-9402-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 the 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

1. Chen X, Fan Z, McGee W, et al. TDP-43 regulates cancer-associated microRNAs. Protein Cell. 2018;9(10):848-866.

doi:10.1007/s13238-017-0480-9

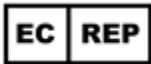







2. Lin TW, Chen MT, Lin LT, et al. TDP-43/HDAC6 axis promoted tumor progression and regulated nutrient deprivation-induced autophagy in glioblastoma. Oncotarget. 2017;8(34):56612-56625. Published 2017 May 18. doi:10.18632/oncotarget.17979

3. Zeng Q, Cao K, Liu R, et al. Identification of TDP-43 as an oncogene in melanoma and its function during melanoma pathogenesis [published correction appears in Cancer Biol Ther. 2020 Apr 2;21(4):388]. Cancer Biol Ther. 2017;18(1):8-15. doi:10.1080/15384047.2016.1250984

4. Ke H, Zhao L, Zhang H, et al. Loss of TDP43 inhibits progression of triple-negative breast cancer in coordination with SRSF3. Proc Natl Acad Sci U S A. 2018;115(15):E3426-E3435. doi:10.1073/pnas.1714573115

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. <https://www.cdc.gov/mmwr/pdf/other/su6101.pdf>

Symbol Key / Légende des symboles/Erläuterung der Symbole

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