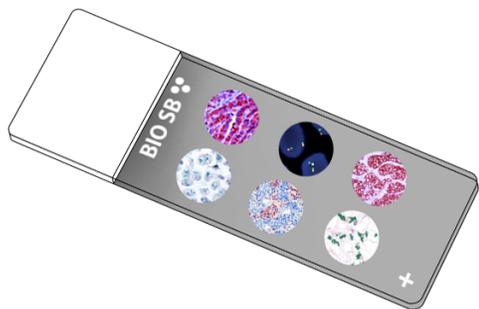


## TDP-43/TARDBP

### Control Slides



#### Intended Use

For In Vitro Diagnostic Use.

#### 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 family, where it regulates RNA associated with glucose and lipid metabolism. TDP-43/TARDBP is associated with several neurodegenerative conditions amyotrophic lateral sclerosis and frontotemporal lobar degeneration 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 progression.

#### Presentation

Five slides of TDP-43/TARDBP positive tissues, each mounted on Hydrophilic Plus Slides, provided in a plastic mailer.

<i>Catalog No.</i>	<i>Quantity</i>
BSB-9402-CS	5 slides
BSB-3776-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

- Chen X, Fan Z, McGee W, et al. TDP-43 regulates cancer-associated microRNAs. *Protein Cell*. 2018;9(10):848-866. doi:10.1007/s13238-017-0480-92. 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.179793. 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:10.1080/15384047.2016.12509844. 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.17145731155. 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

<b>EC 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 jusque Verwendbar bis	<b>LOT</b>	Lot Number Code du lot Chargenbezeichnung