

## BCOR Control Slides



### Intended Use

For In Vitro Diagnostic Use.

### Summary and Explanation

BCOR is located on chromosome X, in the Xp11.4 locus, and derives its name from its function as an interacting corepressor of BCL-6 that enhances BCL-6-mediated transcriptional repression. BCOR is a gene that encodes for an epigenetic regulator involved in the specification of cell differentiation and body structure development. Various BCOR aberrations, represent driver elements of various sarcomas such as Clear Cell Sarcoma of the Kidney, Primitive Mesenchymal Myxoid Tumor of infancy, small round blue cell sarcoma, endometrial stromal sarcoma and histologically heterogeneous Central Nervous System neoplasms group with similar genomic methylation patterns known as CNS-HGNET-BCOR. Furthermore, other BCOR alterations (often loss of function mutations) recur in a large variety of Mesenchymal, Epithelial, Neural and Hematological Tumors, suggesting a central role in cancer evolution. Using next-generation sequencing, an increasing number of novel gene fusions and other abnormalities have emerged recently in the spectrum of EWSR1-negative Small Blue Round Cell Tumors. A subset of Small Blue Round Cell Tumors harboring either BCOR gene fusions (BCOR-CCNB3, BCOR-MAML3), BCOR internal tandem duplication, or YWHAENUTM2B share a transcriptional signature including high BCOR mRNA expression, as well as similar histologic features. Furthermore, other tumors such as Clear Cell Sarcoma of Kidney and Primitive Myxoid Mesenchymal Tumor of Infancy also demonstrate BCOR ITDs and high BCOR gene expression. Recent studies have found the IHC of BCOR to be a highly sensitive marker for SBRCTs and CCSKs with BCOR abnormalities and YWHA rearrangements and can be used as a useful diagnostic marker in these various molecular subsets.

In another study, Strong diffuse nuclear BCOR staining (defined as >95% of tumor cells) was seen in the round cell component of 20 (100%) classic YWHA-NUTM2 high-grade Endometrial Stromal Sarcomas and the 3 unusual high-grade Endometrial Stromal Sarcomas. It was concluded that BCOR immunohistochemical staining is a highly sensitive marker for YWHA-NUTM2 high-grade Endometrial Stromal Sarcomas with both classic and unusual morphology and identifies a subset of high-grade Endometrial Stromal Sarcomas with BCOR alterations, including BCOR rearrangement and internal tandem duplication.

### Presentation

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

Catalog No.	Quantity
BSB-9032-CS	5 slides
BSB-2370-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 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. Huynh KD, et al. BCOR, a novel corepressor involved in BCL-6 repression. Genes Dev. 2000; 14(14), 1810–1823.
2. Astolfe A, et al. BCOR involvement in cancer. Epigenomics. 2019 May; 11(7): 835–855. Yu-Chien K, et al. BCOR Overexpression is a Highly Sensitive Marker in Round Cell Sarcomas with BCOR Genetic Abnormalities. Am J Surg Pathol. 2016 December; 40(12): 1670–1678.
3. Chiang, S., Lee, C., Stewart, C. et al. BCOR is a robust diagnostic immunohistochemical marker of genetically diverse high-grade endometrial stromal sarcoma, including tumors exhibiting variant morphology. Mod Pathol. 2017; 30, 1251–1261.
4. 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 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