

NPM1/B23 Control Slides



Intended Use

For In Vitro Diagnostic Use.

Summary and Explanation

Nucleophosmin 1 (NPM1), also known as nucleolar phosphoprotein B23, is a protein that in humans is encoded by the NPM1 gene. The nuclear protein B23 (also referred to as nucleophosmin) is involved in ribosomal assembly, rRNA transport, centrosome duplication, maintenance of genomic stability, and embryonic development.

NPM1 gene is up-regulated, mutated and chromosomally translocated in many tumor types. Chromosomal aberrations involving NPM1 were found in patients with non-Hodgkin lymphoma, Acute Promyelocytic Leukemia, Myelodysplastic Syndrome, and Acute Myelogenous Leukemia. NPM1 is a nuclear protein. In approximately 50% to 60% of cytogenetically normal Acute Myeloid Leukemia, NPM1 is mutated and localized in the cytoplasm. Both wild type and mutant NPM1 can be detected by immunohistochemistry. The expression of NPM1 is heterogeneous in gastric tumors. NPM1 down-regulation may have a role in gastric carcinogenesis and may help in the selection of anticancer treatment strategies. NPM1 has a critical role in the regulation of colon cancer cells migration and invasion and it may serve as a potential marker for the prognosis of colon cancer patients.

Presentation

Five slides of NPM1/B23 positive tissues, each mounted on Hydrophilic Plus Slides, provided in a plastic mailer.

<i>Catalog No.</i>	<i>Quantity</i>
BSB-9310-CS	5 slides
BSB 3594	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

1. Dai Q, et al. Cytoplasmic expression of nucleophosmin 1 as a marker for diagnosing residual disease of acute myeloid leukemia. Appl Immunohistochem Mol Morphol. 2013 May;21(3):205-11.
2. Falini B, et al. "Translocations and mutations involving the nucleophosmin (NPM1) gene in lymphomas and leukemias". Haematologica. 2007; 92 (4): 519-32.
3. Meani, Natalia; et al. "Role of nucleophosmin in acute myeloid leukemia". Expert Review of Anticancer Therapy. 2014; 9 (9): 1283-1294.
4. Ferreira LM, et al. Deregulated expression of Nucleophosmin 1 in gastric cancer and its clinicopathological implications. Leal et al. BMC Gastroenterology 2014, 14:9
<http://www.biomedcentral.com/1471-230X/14/9>
5. Yan Liu, et al. Expression of Nucleophosmin/NPM1 correlates with migration and invasiveness of colon cancer cells. Journal of Biomedical Science 2012, 19:53. <http://www.jbiomedsci.com/content/19/1/53>
6. 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

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