LMO2 [SP51]

Concentrated and Prediluted Rabbit Monoclonal Antibody
902-3262-043021

BIOCARE MEDICAL

Available Product Formats				
Format	Catalog Number	Description	Dilution	Diluent
Concentrate	ACR 3262 A, C	0.1, 1.0 mL	1:100	Renoir Red
Predilute	APR 3262 AA	6.0	Ready-to-use	N/A

Intended Use:
For Research Use Only. Not for use in diagnostic procedures.

Summary and Explanation:
LMO2 is part of the LIM-only family of proteins which has four members (LMO1-4) that are implicated in a variety of cancers. LMO2 is linked to diffuse large B cell lymphoma (DLBCL) and prostate cancer (1). LMO2 protein is a nuclear marker, expressed in normal germinal-center (GC) B cells and in a subset of GC-derived B-cell lymphomas. LMO2 is also expressed in bone marrow hematopoietic precursors and endothelial cells (2). By immunohistochemistry (IHC) staining, LMO2 displays a crisp nuclear localization that allows for easier interpretation of the stain on paraffin sections in comparison to the diffuse cytoplasmic staining pattern of Human Germinal center Associated Lymphoma (HGAL) (3). LMO2 serves as one of the best prognostic markers of longer survival following immunochemotherapy for DLBCL patients. Additionally, LMO2 expression in DLBCL cells results in genomic instability, which suggests that LMO2 may affect DNA repair efficiency and potentially exploited as a biomarker to stratify patients for therapy (4).

Principle of Procedure:
Antigen detection in tissues and cells is a multi-step immunohistochemical process. The initial step binds the primary antibody to its specific epitope. After labeling the antigen with a primary antibody, a one-step or two-step detection procedure can be applied. A one-step procedure will feature an enzyme labeled polymer that binds the primary antibody. A two-step procedure will feature a linker antibody added to bind to the primary antibody. An enzyme-labeled polymer is then added to bind the linker antibody. These detections of the bound antibodies are evidenced by a colorimetric reaction.

Source: Rabbit monoclonal
Species Reactivity: Human, others not tested
Clone: SP51
Isotype: IgG
Protein Concentration: Call for lot specific Ig concentration.
Epitope/Antigen: LMO2
Cellular Localization: Nuclear
Positive Tissue Control: Tonsil or Lymphoma
Known Applications:
Immunohistochemistry (formalin-fixed paraffin-embedded tissues)
Supplied As: Buffer with protein carrier and preservative
Storage and Stability:
Store at 2ºC to 8ºC. The product is stable to the expiration date printed on the label, when stored under these conditions. Do not use after expiration date. Diluted reagents should be used promptly; any remaining reagent should be stored at 2ºC to 8ºC.

Staining Protocol Recommendations (intelliPATH FLX® and manual use):
Peroxide Block: Block for 5 minutes with Peroxidazed 1.
Pretreatment: Perform heat retrieval using Borg Decloaker. Refer to the Borg Decloaker data sheet for specific instructions.
Protein Block (Optional): Incubate for 5-10 minutes at RT with Background Punisher.
Primary Antibody: Incubate for 30 minutes at RT.
Probe: N/A
Polymer: Incubate for 30 minutes at RT with a tertiary polymer.

Staining Protocol Recommendations (intelliPATH FLX and manual use) Cont'd:
Chromogen: Incubate for 5 minutes at RT with Biocare's DAB – OR – Incubate for 5-7 minutes at RT with Warp Red.
Counterstain: Counterstain with hematoxylin. Rinse with deionized water. Apply Tacha's Bluing Solution for 1 minute. Rinse with deionized water.

Technical Note:
This antibody, for intelliPATH FLX and manual use, has been standardized with MACH 4 detection system. Use TBS for washing steps.

Performance Characteristics:
Sensitivity, specificity and cross-reactivity are summarized in Tables 1 and 2, respectively.

Limitations:
This product is provided for Research Use Only (RUO) and is not for use in diagnostic procedures. Suitability for specific applications may vary and it is the responsibility of the end user to determine the appropriate application for its use.

Precautions:
1. This antibody contains less than 0.1% sodium azide. Concentrations less than 0.1% are not reportable hazardous materials according to U.S. 29 CFR 1910.1200, OSHA Hazard communication and EC Directive 91/155/EC. Sodium azide (NaN_3) used as a preservative is toxic if ingested. Sodium azide may react with lead and copper plumbing to form highly explosive metal azides. Upon disposal, flush with large volumes of water to prevent azide build-up in plumbing. (Center for Disease Control, 1976, National Institute of Occupational Safety and Health, 1976) (5)
2. Specimens, before and after fixation, and all materials exposed to them should be handled as if capable of transmitting infection and disposed of with proper precautions. Never pipette reagents by mouth and avoid contacting the skin and mucous membranes with reagents and specimens. If reagents or specimens come into contact with sensitive areas, wash with copious amounts of water. (6)
3. Microbial contamination of reagents may result in an increase in nonspecific staining.
4. Incubation times or temperatures other than those specified may give erroneous results. The user must validate any such change.
5. Do not use reagent after the expiration date printed on the vial.
6. The SDS is available upon request and is located at http://biocare.net.

Technical Support:
Contact Biocare's Technical Support at 1-800-542-2002 for questions regarding this product.

References:

1. Sewell H, *et al.* Conformational flexibility of the oncogenic protein LMO2 primes the formation of the multi-protein transcription complex. Sci Rep. 2014;4:3643.
2. Natkunam Y*, et al.* The oncoprotein LMO2 is expressed in normal germinal-center B cells and in human B-cell lymphomas. Blood. 2007;109(4):1636-42.
3. Younes SF, *et al.* Immunoarchitectural patterns in follicular lymphoma: efficacy of HGAL and LMO2 in the detection of the interfollicular and diffuse components. The American Journal of Surgical Pathology. 2010 Sep;34(9):1266-76.

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References Cont'd:
4. Parvin S, *et al.* LMO2 Confers Synthetic Lethality to PARP Inhibition in DLBCL. Cancer Cell. 2019;36(3):237-49.
5. Center for Disease Control Manual. Guide: Safety Management, NO. CDC-22, Atlanta, GA. April 30, 1976 "Decontamination of Laboratory Sink Drains to Remove Azide Salts."
6. Clinical and Laboratory Standards Institute (CLSI). Protection of Laboratory Workers from Occupationally Acquired Infections; Approved Guideline-Fourth Edition CLSI document M29-A4 Wayne, PA 2014.

Table 1: Sensitivity and specificity were determined by testing formalin-fixed, paraffin-embedded diseased tissues.

Tissue	Positive Cases	Total Cases
Breast Cancer (IDC)	24	24
Colon Adenocarcinoma	34	40
Lung Adenocarcinoma	22	24
Lung Squamous Cell Carcinoma	17	24
Prostate Adenocarcinoma	47	48

Table 2: Tissue cross-reactivity was determined by testing formalin-fixed, paraffin-embedded normal tissues.

Tissue	Positive Cases	Total Cases
Cerebrum	0	2
Cerebellum	0	2
Adrenal	1	2
Ovary	0	2
Pancreas	1	3
Parathyroid	3	3
Pituitary	1	2
Testis	0	2
Thyroid	0	2
Breast	2	3
Spleen	2	3
Tonsil	4	7
Thymus	0	2
Bone Marrow	2	2
Lung	2	2
Heart	1	3
Esophagus	1	3
Stomach	3	3
Small Intestine	2	2
Colon	2	3
Liver	2	2
Salivary Gland	3	3
Kidney	3	3
Prostate	0	3
Uterus	2	3
Cervix	0	3
Skeletal Muscle	0	3
Skin	2	2
Peripheral Nerve	2	2
Lining Cells	0	2

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