EPITOMICS
an abcam company

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IVD DATA SHEET

RUNX2

Concentrated Rabbit Monoclonal Antibody

Intended Use:
For in Vitro Diagnostic Use

Epitomics' Rabbit Monoclonal Anti-Human RUNX2, Clone EP351, is intended for use to qualitatively identify RUNX2 by light microscopy in sections of formalin-fixed, paraffin-embedded tissue using immunohistochemical detection methodology. Interpretation of any positive or negative staining must be complemented with the evaluation of proper controls and must be made within the context of the patient's clinical history and other diagnostic tests. Evaluation must be performed by a qualified pathologist.

Catalog number	Description	Dilution
AC-0321A	0.1 ml, concentrated	1:100-1:200
AC-0321B	0.5 ml, concentrated	1:100-1:200
AC-0321	1 ml, concentrated	1:100-1:200
AC-0321BULK	2 ml or more, concentrated	1:100-1:200

Immunogen: A synthetic peptide corresponding to residues of human RUNX2 protein
Source: Rabbit Monoclonal Antibody
Clone ID: EP351
Isotype: Rabbit IgG
Application: Immunohistochemistry for formalin-fixed paraffin-embedded tissue

Summary and Explanation:
Runt-related transcription factor 2 (RUNX2) is a member of the Runx transcription factor family that regulates the differentiation of osteogenic and chondrogenic cells from mesenchymal precursors. *RUNX2* is expressed in developing osteoblasts and progressively decreases during maturation. Overexpressing *RUNX2* induces a high rate of bone turnover.

Of the Runx family members, RUNX1 and RUNX2 have been associated with oncogenesis. Aberrant function of RUNX2 has been implicated in oncogenesis and pathogenesis of some bone tumors including osteosarcoma and giant cell tumor. A large immunohistochemical study of 206 bone tumors revealed RUNX2 expression in the majority of osteoblastomas (90%, 19/21), osteoid osteomas (100%, 5/5), and osteosarcomas (93%, 66/71). Using an antibody panel containing RUNX2, TWIST1 and SOX9, giant cell tumors (RUNX2+, TWIST1-) and osteosarcoma (RUNX2+, TWIST1+) could be reliably differentiated from chondroblastoma and chondromyxoid fibroma (RUNX2-, SOX9+) with high sensitivity and specificity. Addition of RUNX2 immunohistochemistry may aid in the diagnosis of osteosarcoma.

Reagent Provided:
Antibody to RUNX2 is affinity purified and diluted in 10 mM phosphate buffered saline (PBS), pH 7.2 containing 1% bovine serum albumin (BSA) and 0.09% sodium azide (NaN_3).

Storage and Stability:
Store at 2-8 °C. Don't use after expiration date provided on the vial. End user must validate any storage conditions other than those specified.

Procedures Recommended:
1. Pretreatment: Epitope retrieval using Tris/EDTA buffer (catalog #: SP-0004) with a pressure cooker.
2. Endogenous peroxidase block: Block for 10 minutes at room temperature using peroxidase solution (catalog #: SP-0002).
3. Protein block: Block for 10 minutes at room temperature using blocking solution (catalog #: SP-0003).
4. Primary antibody: Incubate for 30 minutes.
5. Detection: Follow instructions from the selected detection system (EpiPrecision™, a Biotin Streptavitin-HRP Detection, catalog #: DK-0001, 0003, or EpiVision™, a Rabbit Polymer Detection, catalog # DK-0002, 0004).

The antibody dilution and protocol may vary depending on the specimen preparation and specific application. Optimal conditions should be determined by the individual laboratory.

Performance Characteristics:
This antibody gives nuclear staining in positive cells. The recommended positive controls are placenta for normal tissue and osteosarcoma for abnormal tissue.

Limitations:
Immunohistochemistry is a complex process. Variation in tissue selection, tissue processing, antigen retrieval, peroxidase activity, detection systems and improper counterstaining may cause variation in results.

References:
1. Akech J, *et al.: Oncogene.* 2010;29(6):811-21.
2. Barnes G, *et al.: Cancer Res.* 2004;64(13):4506-13.
3. Horvai AE, *et al.: Mod Pathol.* 2012;25(11):1452-61.
4. Sadikovic B, *et al.: BMC Cancer.* 2010;10:202.
5. van der Deen M, *et al.: J Cell Biochem.* 2010;109(4):828-37.

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