

**BRAF-V600E (Clone: RM8)  
Rabbit Monoclonal Antibody**

**PRODUCT INFORMATION:**

MR1263 6ml Ready to use  
MR1263 3ml Ready to use  
MRC1263 1ml Concentrated  
MRC1263 0.5ml Concentrated  
MRC1263 0.1ml Concentrated  
MRH1263 6ml Ready to use  
MRH1263 3ml Ready to use

**PERFORMANCE CHARACTERISTICS:**

**Localization:** Cytoplasm  
**Retrieval Buffer:** Tris-EDTA, pH 9.0  
**Incubation:** 30-60 minutes  
**Positive control:** Papillary Thyroid Ca

**Host, Isotype:** Rabbit, IgG

**STORAGE AND HANDLING**

**Storage Recommendations:** Store at 2-8°C. When stored at the appropriate conditions, the antibody is stable until expiry. Do not use the antibody after expiration date provided on the vial in any condition.

To ensure proper reagent delivery and stability, replace the dispenser cap after every use and immediately place the vial into the refrigerated conditions in an upright position. The contents of the vial should be used within 9 months from the opening of the vial.

**SPECIMEN PREPARATION**

**Staining Recommendations:**

Routinely processed, FFPE tissues are suitable for use with this primary antibody, when used PathnSitu's Poly Excel HRP/DAB detection system. The recommended tissue fixative is 10% neutral buffered formalin. Variable results may occur as a result of prolonged fixation or special processes such as decalcification. Thickness of the sections should be 2-5µm. Slides should be stained once the sections are made as antigenicity of the cut sections may diminish over a period of time. It is recommended to stain known positive and negative controls simultaneously with unknown specimens.

**PRECAUTIONS**

1. This product should be used by qualified and trained professional users only
2. The product contains < 0.1% of sodium azide as preservative and is not classified hazardous, refer MSDS for further details
3. As with any product derived from biological sources, proper handling procedures should be used
4. Do not use reagents after expiration date
5. Use protective clothing and gloves, while handling reagents
6. All hazardous materials should be disposed according to local state and federal regulations
7. Avoid microbial contamination of reagents as it may lead to incorrect results

**STAINING PROCEDURE**

**Antigen Retrieval Solution:** Use Tris-EDTA Buffer (Cat#PS009) as antigen retrieval solution.

**Heat Retrieval Method:** Retrieve sections under steam pressure for 15 minutes using PathnSitu's MERS (Multi Epitope Retrieval System) for optimal retrieval of the epitopes, allow solution to cool at the room temperature, transfer the tissue sections/slides to the distilled water prior to the primary antibody application.

**Primary Antibody:** Cover the tissue sections with primary antibody and incubate for 30-60 min at room temperature when used PathnSitu's PolyExcel Detection System.

**Detection System:** Refer to PathnSitu's PolyExcel HRP/ DAB detection system protocol for optimal staining results.

**QUALITY CONTROL**

The recommended positive tissue control for BRAF is Papillary thyroid carcinoma. A positive and negative tissue control must be run with every staining procedure performed for monitoring the correct performance of processed tissue and test reagents. A negative tissue controls provide an indication of non-specific background staining. If the results are not expected in positive and negative controls the test must be considered invalid and entire procedure must be cross verified. Individual laboratory must establish their own quality control to validate the process and antibody when opened a vial.

**INTERPRETATION OF RESULTS**

BRAF stains the Cytoplasm. A qualified experienced/trained pathologist must interpret the results in the patient's sample along with the positive and negative controls.

**PERFORMANCE CHARACTERISTICS**

PathnSitu products will undergo a thorough quality control check before it is released to the market. The antibody showed consistent specific and sensitive staining on the multiple positive tissue controls tested, by inter run, intra run and lot

**INTENDED USE**

**For research use only**

This antibody is intended for use in qualitatively identify BRAF by light microscopy in formalin fixed, paraffin embedded (FFPE) tissue sections using immunohistochemical (IHC) detection methodology. Interpretation of any positive or negative staining must be complemented with the evaluation of proper known controls (Positive and Negative) and must be made within the context of the patient's clinical history and other diagnostic tests. A qualified and trained pathologist must perform evaluation of the test. This antibody is intended to be used after the primary diagnosis of tumor has been made by conventional histopathology using nonimmunologic histochemical stains.

**SUMMARY AND EXPLANATION**

BRAF is a human gene that makes a protein called B-Raf, which is more formally known as serine/threonine-protein kinase B-Raf. The B-Raf protein is involved in sending signals inside cells, which are involved in directing cell growth. In 2002, it was shown to be mutated in some human cancers. Mutations in the BRAF gene can cause disease in two ways. First, mutations can be inherited and cause birth defects. Second, mutations can appear later in life and cause cancer, as an oncogene.

Mutations in this gene have been found in cancers, including non-Hodgkin lymphoma, colorectal cancer, malignant melanoma, papillary thyroid carcinoma, non-small-cell lung carcinoma, and adenocarcinoma of the lung. The frequency of BRAF mutations varies widely in human cancers, from more than 80% in melanomas and nevi, to as little as 0-18% in other tumors, such as 1-3% in lung cancers and 5% in colorectal cancer. In 90% of the cases, thymine is substituted with adenine at nucleotide 1799. This leads to valine (V) being substituted for by glutamate (E) at codon 600 (referred to as V600E) in the activation segment that has been found in human cancers. This mutation has been widely observed in papillary thyroid carcinoma, colorectal cancer, melanoma and non-small-cell lung cancer. BRAF-V600E mutations are present in 57% of Langerhans cell histiocytosis patients. The V600E mutation is a likely driver mutation in 100% of cases of hairy cell leukemia. High frequency of BRAF V600E mutations have been detected in ameloblastoma, a benign but locally infiltrative odontogenic neoplasm.

Note: Erythrocytes staining may be observed in some tissues.

**PRINCIPLE OF THE PROCEDURE**

The identification of the antigen on the FFPE tissues is carried out using the above stated antibody. The antigen and antibody complex is visualized using an enzyme coupled (HRP/AP) secondary antibody with specific binding to the primary antibody, this complex is visualized by the enzymatic activation of the chromogen resulting to a visible reaction production of the antigenic site. Each and every step involves precise time and optimal temperature and the results are interpreted using a light microscope by a qualified and trained pathologist.

**REAGENT PROVIDED**

**Concentrated format:** Antibody to BRAF is affinity purified and diluted in antibody diluent with 1% bovine serum albumin (BSA) and 0.05% of sodium azide (NaN<sub>3</sub>).

**Recommended dilutions:** 1:50 – 1:100

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

**Pre-diluted format:** PathnSitu's ready to use antibodies are pre-titrated to optimal staining conditions. Further dilution will affect the efficacy of the antibody and may yield to sub-optimal staining.

**Immunogen:** A peptide corresponding to BRAF V600E mutant

DS-MR1263-A

based studies. The antibody is stable for the expiry mentioned on the labels which is determined by real time or accelerated methods.

#### TROUBLESHOOTING

1. Follow the antibody specific protocol recommendations according to data sheet provided
2. Tissue staining is dependent on the handling and processing of the tissue prior to staining. Improper fixation, tissue processing, antibody freezing and thawing, washing, drying, heating, sectioning or contamination with other tissues or fluids may produce artifacts, antibody trapping or inaccurate results
3. Do not allow the section to dry out during the entire IHC process
4. Excessive or incomplete counterstaining may compromise the interpretation of the results
5. If unusual results occur, contact PathnSitu's Technical Support at +91-40-2701 5544 or E-mail: [techsupport@pathnsitu.com](mailto:techsupport@pathnsitu.com)

#### LIMITATIONS AND WARRANTY

Authorized and skilled/trained personnel only may use the product. The clinical interpretation of any test results should be evaluated within the context of the patient's medical history and other diagnostic test results. A qualified trained pathologist must perform the evaluation of the test results. There are no warranties, expressed or implied, which extend beyond the description. PathnSitu is not liable for property damage, personal injury, time or effort on economic loss caused by this product.

#### BIBLIOGRAPHY

1. Sithanandam G, Kolch W, Duh FM, Rapp UR. Complete coding sequence of a human B-raf cDNA and detection of B-raf protein kinase with isozyme specific antibodies. *Oncogene* 1990; 5 (12): 1775-80.
2. Davies H, et al. Mutations of the BRAF gene in human cancer. *Nature* 2002; 417 (6892): 949-54.
3. Namba H, et al. Clinical implication of hot spot BRAF mutation, V599E, in papillary thyroid cancers". *J. Clin. Endocrinol. Metab.* 2003; 88 (9): 4393-7.
4. Tan YH, et al. Detection of BRAF V600E mutation by pyrosequencing". *Pathology* 2008; 40 (3): 295-8.
5. Li WQ, et al. BRAF mutations are associated with distinctive clinical, pathological and molecular features of colorectal cancer independently of microsatellite instability status. *Mol. Cancer* 2006; 5 (1): 2.

#### EXPLANATION OF SYMBOLS

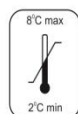
LOT- Lot number / Batch number



- Expiry

RUO

Research use only



Storage limitation