

Product Information

Anti-BRAF (V600E) antibody produced in rabbit affinity isolated antibody

Product Number **SAB4200772**

Product Description

Anti-BRAF (V600E) is produced in rabbit using a synthetic peptide driven from human BRAF protein (GeneID 673) corresponding to an altered sequence surrounding the V600E mutation, conjugated to KLH. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-BRAF (V600E) recognizes V600E mutated human BRAF protein. The antibody may be used in various immunochemical techniques including Immunoblotting (~95 kDa). The antibody does not recognize the wild type BRAF. Detection of the BRAF (V600E) band by Immunoblotting is specifically inhibited by the immunizing peptide and is not inhibited by the peptide which does not contain the mutation. .

B-Raf proto-oncogene serine/threonine-protein kinase (BRAF), also known as Serine/threonine-protein kinase B-raf, Proto-oncogene B-Raf, p94, v-Raf murine sarcoma viral oncogene homolog B1, is a member of the RAF family. BRAF is one of the key factors in mitogen-activated protein kinase (MAPK) signaling pathway, which is activated by members of the Ras family upon growth factor-induced stimulation. BRAF controls and regulates numerous essential cellular mechanisms including cell proliferation, differentiation, development, survival, apoptosis and secretion.¹⁻² In contrast to the majority of oncogenic fusion kinases such as ALK, ROS1, NTRK1 and RET that are receptor tyrosine kinases, BRAF encodes a non-receptor serine/threonine kinase, placing its normal protein localization within the cytoplasm rather than associated with the plasma membrane.³⁻⁴ BRAF signaling may be activated by growth factor binding to receptor tyrosine kinases upstream as well as other intracellular signals.⁴ BRAF is mutated at a high frequency in several cancers, including non-Hodgkin lymphoma, colorectal cancer, malignant melanoma, thyroid carcinoma, non-small cell lung carcinoma, and adenocarcinoma of lung. BRAF V600E is the most common BRAF mutation which accounts for around 90% of all BRAF mutations in cancers.⁵ The V600E mutation in BRAF results in constantly activated form of the BRAF, leading to unregulated cell proliferation and ultimately cancer.⁶⁻⁷

Patients with tumors that carry the BRAF V600E mutation display a less promising prognosis compared to those with a wild type BRAF, in particular, in melanoma, colorectal cancer, and thyroid cancer.⁸⁻¹⁰ In addition, defective BRAF was shown to be associated with cardio-faciocutaneous syndrome, a disease characterized by heart defects and mental retardation.¹¹

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody Concentration: ~ 1.0 mg/mL

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2–8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 2-4 µg/mL is recommended using extract of human HEK-293T cells over-expressing BRAF mutant (V600E) protein.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working concentration by titration test.

References

1. Wang H., et al., *Biochem Biophys Res Commun.*, **489**, 14-20 (2017).
2. Obaid NM., et al., *Int J Mol Sci.*, **18**, 585 (2017).

3. Stransky N., et al., *Nat Commun.*, **5**: 4846 (2014).
4. Shalin SC., *Lab Invest.*, **97**, 158-65 (2017).
5. Thiel A. and Ristimäki A., *Front Oncol.*, **3**, 281 (2013).
6. Karnoub AE. and Weinberg RA., *Nat Rev Mol Cell Biol.*, **9**, 517-31 (2008).
7. Davies H., et al., *Nature*, **417**, 949-54 (2002).
8. Xing M., et al., *JAMA*, **309**, 1493-501 (2013).
9. Houben R., et al., *J Carcinog.*, **3**, 6 (2204).
10. Ogino S., et al., *Clin Cancer Res.*, **18**, 890-900 (2012).
11. Rauen, KA., *GeneReviews*® (2016).

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