abcam

Product datasheet

Anti-BRAF (mutated V600E) antibody [VE1] ab228461

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概述

产品名称	Anti-BRAF (mutated V600E)抗体[VE1]
描述	小鼠单克隆抗体[VE1] to BRAF (mutated V600E)
宿主	Mouse
特异性	The VE1 monoclonal is a sensitive antibody that detects mutated, constitutively active BRAF protein where glutamic acid is present at codon 600 instead of valine (V600E) (PubMed IDs: 21638088, 23657789). Please be aware that non-specific nuclear staining has been reported with this antibody (PubMed IDs: 23763264, 23589031, 24838325).
经测试应用	**适用于:** IHC-P
种属反应性	**与反应:** Human **预测可用于:** Mouse, Chicken
免疫原	Synthetic peptide. This information is proprietary to Abcam and/or its suppliers.
阳性对照	IHC-P: Human colon carcinoma tissue with B-RAF V600E mutation.
常规说明	**This product is FOR RESEARCH USE ONLY. For commercial use, please contact partnerships@abcam.com.** The V600E activating mutation in BRAF is found in several cancer types including: ~65% of pleomorphic xanthoastrocytomas, ~52% of microsatellite-unstable colon cancer tumors, ~50% of melanomas, ~35% of papillary thyroid carcinomas and ~5% of microsatellite-stable colon cancers (PubMed IDs: 21274720, 24508103, 18682506, 16024606). The majority (>90%) of BRAF mutant cancers harbor the V600E mutation. The mutation leads to activation of the MAPK signaling pathway that increases cell invasion and reduces apoptosis. It also leads to reduced expression of melanocyte differentiation antigens and subsequent immune evasion (PubMed IDs: 21638088, 20551059). The VE1 monoclonal antibody is manufactured by Abcam. If you require a particular buffer formulation or a particular conjugate for your experiments, please see Custom formulation and conjugation services The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing. If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be

found below, along with publications, customer reviews and Q&As

性能

形式	Liquid
存放说明	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C long term. Avoid freeze / thaw cycle.
存储溶液	pH: 7.50 Preservative: 0.1% Sodium azide Constituents: 1% BSA, PBS
纯度	Protein A/G purified
纯化说明	Purified from TCS by protein A/G.
克隆	单克隆
克隆编号	VE1
同种型	IgG2b
轻链类型	kappa

应用

The Abpromise guarantee Abpromise™承诺保证使用ab228461于以下的经测试应用

"应用说明"部分 下显示的仅为推荐的起始稀释度;实际最佳的稀释度/浓度应由使用者检定。

应用	Ab评论	说明
IHC-P		1/100.

靶标

功能	Involved in the transduction of mitogenic signals from the cell membrane to the nucleus. May play a role in the postsynaptic responses of hippocampal neuron.
组织特异性	Brain and testis.
疾病相关	Note=Defects in BRAF are found in a wide range of cancers. Defects in BRAF may be a cause of colorectal cancer (CRC) [MIM:114500]. Defects in BRAF are involved in lung cancer (LNCR) [MIM:211980]. Defects in BRAF are involved in non-Hodgkin lymphoma (NHL) [MIM:605027]. NHL is a cancer that starts in cells of the lymph system, which is part of the body's immune system. NHLs can occur at any age and are often marked by enlarged lymph nodes, fever and weight loss. Defects in BRAF are a cause of cardiofaciocutaneous syndrome (CFC syndrome) [MIM:115150]; also known as cardio-facio-cutaneous syndrome. CFC syndrome is characterized by a distinctive facial appearance, heart defects and mental retardation. Heart defects include pulmonic stenosis, atrial septal defects and hypertrophic cardiomyopathy. Some affected individuals present with ectodermal abnormalities such as sparse, friable hair, hyperkeratotic skin lesions and a generalized ichthyosis-like condition. Typical facial features are similar to Noonan syndrome. They include high forehead with bitemporal constriction, hypoplastic supraorbital ridges,

downslanting palpebral fissures, a depressed nasal bridge, and posteriorly angulated ears with prominent helices. The inheritance of CFC syndrome is autosomal dominant.
Defects in BRAF are the cause of Noonan syndrome type 7 (NS7) [MIM:613706]. Noonan syndrome is a disorder characterized by facial dysmorphic features such as hypertelorism, a downward eyeslant and low-set posteriorly rotated ears. Other features can include short stature, a short neck with webbing or redundancy of skin, cardiac anomalies, deafness, motor delay and variable intellectual deficits.
Defects in BRAF are the cause of LEOPARD syndrome type 3 (LEOPARD3) [MIM:613707]. LEOPARD3 is a disorder characterized by lentigines, electrocardiographic conduction abnormalities, ocular hypertelorism, pulmonic stenosis, abnormalities of genitalia, retardation of growth, and sensorineural deafness.
Note=A chromosomal aberration involving BRAF is found in pilocytic astrocytomas. A tandem duplication of 2 Mb at 7q34 leads to the expression of a KIAA1549-BRAF fusion protein with a constitutive kinase activity and inducing cell transformation.

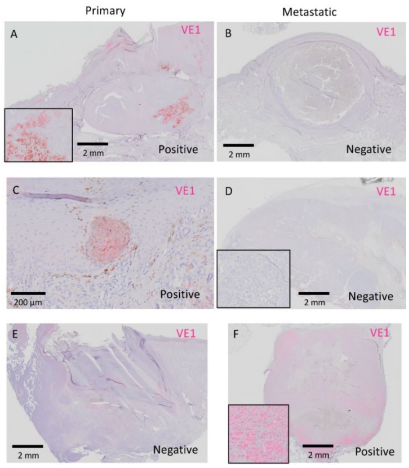
序列相似性

Belongs to the protein kinase superfamily. TKL Ser/Thr protein kinase family. RAF subfamily.
Contains 1 phorbol-ester/DAG-type zinc finger.
Contains 1 protein kinase domain.
Contains 1 RBD (Ras-binding) domain.

细胞定位

Nucleus. Cytoplasm. Cell membrane. Colocalizes with RGS14 and RAF1 in both the cytoplasm and membranes.

图片

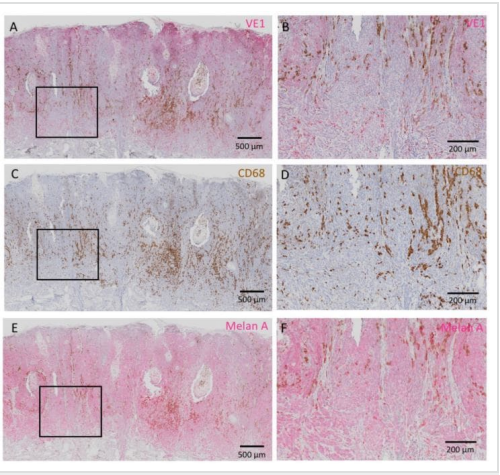


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-BRAF (mutated V600E) antibody [VE1] (ab228461)

Image from Ito T et al., Int J Mol Sci., 20(24):6191, Fig 5.; doi:10.3390/ijms20246191. Reproduced under the Creative Commons license http://creativecommons.org/licenses/by/4.0/.

Ito T, Kaku-Ito Y, Murata M, et al. used ab228461 at 1/100 dilution in immunohistochemical analysis of human primary cutaneous acral melanoma tissue. Antigen retrieval was performed using Heat Processor Solution pH 9 (Nichirei Biosciences, Tokyo, Japan) at 100 °C for 45 min.

Matched pairs of primary and metastatic acral melanomas from three patients with discordant staining between primary and metastatic lesions. Black rectangles show representative high-power views of each figure (**A**,**D**,**F**). Bars indicate 2 mm in (**A**,**B**,**D**–**F**) and 200 µm in (**C**).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-BRAF (mutated V600E) antibody [VE1] (ab228461)

Image from Ito T et al., J Clin Med., 9(3):690. Fig 2.; doi:10.3390/jcm9030690. Reproduced under the Creative Commons license http://creativecommons.org/licenses/by/4.0/.

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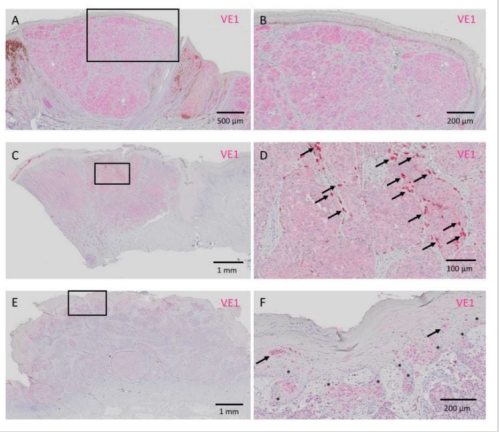
Three cases of acral melanomas with homogeneous VE1-positive staining. (**A**) Strong (3+) VE1 signals are evident. (**B**) High-powered view of the rectangular area in **A**. (**C**) Moderate (2+) VE1 staining of acral melanoma. (**D**) High-powered view of the rectangular area in **C**. Some tumor-infiltrating macrophages showing a strong red color (arrows) are noted. These macrophages should be excluded from the assessment of VE1 staining in melanoma. (**E**) Weak (1+) but definitely positive staining of VE1. (**F**) High-powered view of the rectangular area in **E**. Lentiginous spread of melanoma cells in the basal layer (*) is evident. Ascending melanoma cells (arrows) in the epidermis as well as melanoma cells in the dermis are also VE1 positive. Bars indicate 500 µm in **A**, 200 µm in **B**,**F**, 1 mm in **C**,**E**, and 100 µm in **D**.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-BRAF (mutated V600E) antibody [VE1] (ab228461)

Image from Ito T et al., J Clin Med., 9(3):690. Fig 1.; doi:10.3390/jcm9030690. Reproduced under the Creative Commons license http://creativecommons.org/licenses/by/4.0/.

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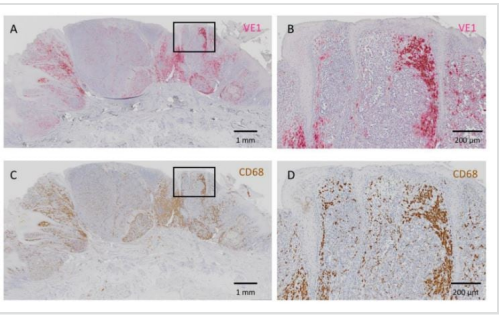
A case of acral melanoma with heterogeneous VE1 staining. VE1-positive signals are shown in red. (**A**) VE1-positive red melanoma cells and VE1-negative melanoma cells are intermingled. (**B**) High-powered view of the rectangular area in **A**. Cells with brown pigments and strongly red cells are scattered. (**C**) CD68 staining of the same area as in **A**. Positive signals of CD68 are shown in brown. (**D**) High-powered view of the rectangular area in **C**. Brown cells in **D** are tumor-infiltrating macrophages. (**E**) Melan A staining of the same area as in **A** and **C**. Positive signals are shown in red. (**F**) High-powered view of the rectangular area in **E**. Melan A staining clearly shows melanoma cells. Bars indicate 500 µm in **A**,**C**,**E**, and 200 µm in **B**,**D**,**F**.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-BRAF (mutated V600E) antibody [VE1] (ab228461)

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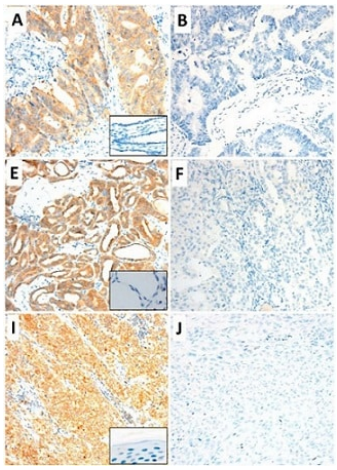
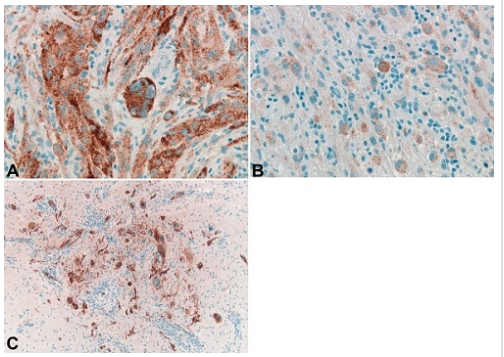
A negative case of VE1 staining. Some cells show strong VE1 expression in red (**A**,**B**), but CD68 staining clearly highlights that these VE1-positive cells are macrophages (**C**,**D**). No melanoma cells stain with VE1 and this case should be regarded as “negative” for VE1. (**B**) High-powered view of the rectangular area in **A**. (**D**) High-powered view of the rectangular area in **C**. Bars indicate 1 mm in **A**,**C** and 200 µm in **B**,**D**.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-BRAF (mutated V600E) antibody [VE1] (ab228461)

Samples from human tumor tissues that were Positive (A, E, I) and Negative (B, F, J) for BRAF expression. Boxes in A, E, I show the negative controls from their corresponding non-tumor tissues.

IHC for BRAF protein expression was performed on 4 µm-thick sections of formalin-fixed, paraffin-embedded tissues, using ab228461. The specimens were fixed in 10% neutral buffered formalin for 24–48 hours. after deparaffinization, the slides were pretreated with cell conditioning 1 for 64 minutes for antigen unmasking and followed by pre-primary antibody peroxidase inhibition. The slides were then incubated with the VE1 antibody at 37°C for 16 minutes, and counterstained with hematoxylin II for 4 minutes and bluing reagent for 4 minutes.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-BRAF (mutated V600E) antibody [VE1] (ab228461)

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BRAF V600E IHC positive PXA cases molecularly confirmed as BRAF V600E mutant tumors: strong granular cytoplasmic immunostaining of a characteristic pleomorphic multinucleated giant tumor cell (A), weak granular cytoplasmic immunostaining of pleomorphic and spindle tumor cells (B), strong granular cytoplasmic immunostaining of a cluster of isolated tumor cells (C).

Four-micron freshly cut sections (<2 weeks) of formalin-fixed, paraffin-embedded (FFPE) tissue from human were dried and melted at 62°C oven for 20 minutes. Subsequently, they were stained with ab228461. Staining was performed on the Ventana BenchMark XT (Ventana Medical Systems Inc.). The staining protocol included online deparaffinization, HIER (Heat Induced Epitope Retrieval) with Ventana Cell Conditioning 1 for 32 minutes and primary antibody incubation for 32 minutes at 37°C.

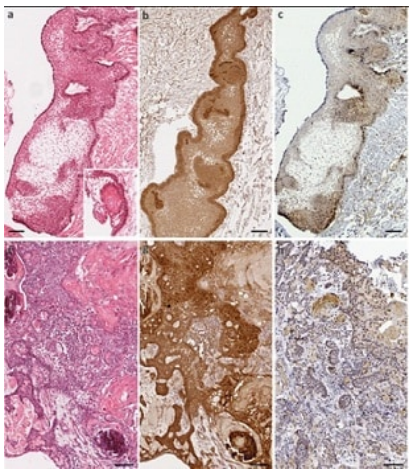

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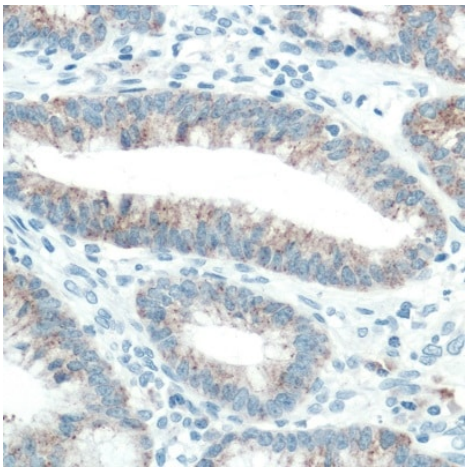
Image from Larkin SJ et al. Acta Neuropathol, vol 127, pg 927-9, 2014. Reproduced under the Creative Commons license http://creativecommons.org/licenses/by/4.0/.

BRAF V600E mutations in adamantinomatous craniopharyngioma. Two cases are shown (a–e and f–j). a, f Classical features of aCP (wet keratin, stellate reticulum, palisaded epithelium). b, g Translocation of β-catenin is shown in both cases (brown reaction product). c, h An antibody to BRAF V600E (VE1) shows staining of the tumour tissue (brown reaction product).

Immunohistochemical analysis was performed on 4µm sections from FFPE tumour specimens. Following dewaxing through graded alcohols, endogenous peroxidase activity was blocked (3% (v/v) H_2O_2 in PBS, pH 7.3, 20 minutes with orbital shaking). Epitope retrieval was achieved by autoclaving in sodium citrate (10mM, pH 6.0, 10 minutes) (β-catenin) or Tris-EDTA (10mM Tris base, 1mM EDTA, pH 9.0, 10 minutes) (BRAF). Sections were blocked with serum block for 15 minutes, then incubated overnight at 4°C with primary antibody diluted in PBS or TBS-T (1:1000 in PBS (β-catenin); 1:50 in TBS-T (BRAF)).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-BRAF (mutated V600E) antibody [VE1] (ab228461)

Formalin-fixed, paraffin-embedded human colon carcinoma tissue stained for B Raf (mutated V600E) using ab228461 at a 1/100 dilution in immunohistochemical analysis.

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