

Rabbit C-RAF Polyclonal Antibody | anti-RAF1 antibody

C-RAF Antibody

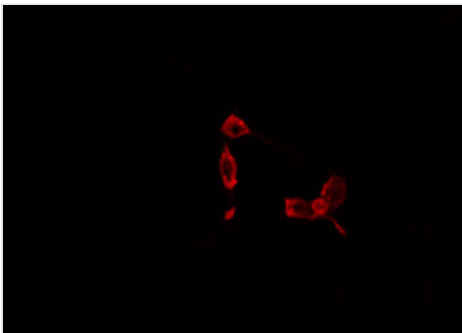
CATALOG #	HOST	REACTIVITY	APPLICATIONS
AAA325835	Rabbit	Human, Mouse, Rat	ELISA, Immunocytochemistry, Immunofluorescence, Western Blot

PRODUCT SYNONYMS

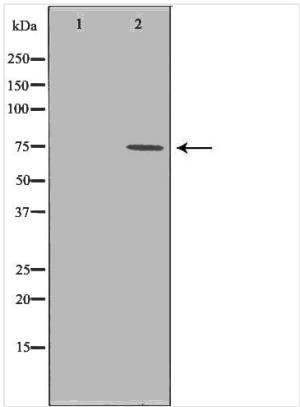
C-RAF; Polyclonal Antibody; C-RAF Antibody; c Raf; C-raf; C-Raf proto-oncogene; serine/threonine kinase; CMD1NN; Cra1 1 transforming gene; cRaf; Cra1 transforming gene; EC 2.7.11.1; kinase Raf1; Murine sarcoma 3611 oncogene 1; NS5; Oncogene MIL; Oncogene RAF1; OTTHUMP00000160218; OTTHUMP00000207813; OTTHUMP00000209389; Protein kinase raf 1; Proto-oncogene c-RAF; Raf 1; Raf 1 proto oncogene serine/threonine kinase; RAF; Raf proto oncogene serine/threonine protein kinase; RAF proto-oncogene serine/threonine-protein kinase; RAF-1; RAF1; RAF1_HUMAN; Similar to murine leukemia viral (V-raf-1) oncogene homolog 1; TRANSFORMING REPLICATION-DEFECTIVE MURINE RETROVIRUS 3611-MSV; v raf 1 murine leukemia viral oncogene homolog 1; v-raf murine sarcoma viral oncogene homolog 1; v-raf-1 murine leukemia viral oncogene-like protein 1; vraf1 murine leukemia viral oncogene homolog 1; anti-RAF1 antibody

PRODUCT SPECIFICATIONS

Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Isotype	IgG
Specificity	c-Raf antibody detects endogenous levels of total c-Raf
Purity/Purification	The antiserum was purified by peptide affinity chromatography using SulfoLink Coupling Resin.
Form/Format	Liquid Phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Concentration	1mg/ml (varies by lot)
Sequence Length	648
Applicable Applications for anti-RAF1 antibody	ELISA, ICC (Immunocytochemistry), IF (Immunofluorescence), WB (Western Blot)
Immunogen	C term-peptide of human c-Raf
Subcellular Location	Cytoplasm. Cell Membrane. Colocalizes with RGS14 and BRAF in both the cytoplasm and membranes.
Tissue Specificity	In skeletal muscle, isoform 1 is more abundant than isoform 2.
Conjugation	Unconjugated
Preparation and Storage	Store at -20 degree C. Stable for 12 months from date of receipt.



IF (Immunofluorescence)
AAA325835 staining HeLa cells by IF/ICC. The sample were fixed with PFA and permeabilized in 0.1% Triton X-100, then blocked in 10% serum for 45 minutes at 25 degree C. The primary antibody was diluted at 1/200 and incubated with the sample for 1 hour at 37 degree C. An Alexa Fluor 594 conjugated goat anti-rabbit IgG (H+L) antibody, diluted at 1/600, was used as secondary antibody.



WB (Western Blot)
Western blot analysis of extracts of mouse brain using c-Raf antibody. The lane on the left is treated with the antigen-specific peptide.

Related Product Information for anti-RAF1 antibody

Description: A-Raf, B-Raf and c-Raf (Raf-1) are the main effectors recruited by GTP-bound Ras to activate the MEK-MAP kinase pathway (1). Activation of c-Raf is the best understood and involves phosphorylation at multiple activating sites including Ser338, Tyr341, Thr491, Ser494, Ser497 and Ser499 (2). p21-activated protein kinase (PAK) has been shown to phosphorylate c-Raf at Ser338 and the Src family phosphorylates Tyr341 to induce c-Raf activity (3, 4). Ser338 of c-Raf corresponds to similar sites in A-Raf (Ser299) and B-Raf (Ser445), although this site is constitutively phosphorylated in B-Raf (5). Inhibitory 14-3-3 binding sites on c-Raf (Ser259 and Ser621) can be phosphorylated by Akt and AMPK, respectively (6, 7). While A-Raf, B-Raf and c-Raf are similar in sequence and function, differential regulation has been observed (8). Of particular interest, B-Raf contains three consensus Akt phosphorylation sites (Ser364, Ser428 and Thr439) and lacks a site equivalent to Tyr341 of c-Raf (8, 9). The B-Raf mutation V600E results in elevated kinase activity and is commonly found in malignant melanoma (10). Six residues of c-Raf (Ser29, Ser43, Ser289, Ser296, Ser301 and Ser642) become hyperphosphorylated in a manner consistent with c-Raf inactivation. The hyperphosphorylation of these six sites is dependent on downstream MEK signaling and renders c-Raf unresponsive to subsequent activation events (11).

Function: Serine/threonine-protein kinase that acts as a regulatory link between the membrane-associated Ras GTPases and the MAPK/ERK cascade, and this critical regulatory link functions as a switch determining cell fate decisions including proliferation, differentiation, apoptosis, survival and oncogenic transformation. RAF1 activation initiates a mitogen-activated protein kinase (MAPK) cascade that comprises a sequential phosphorylation of the dual-specific MAPK kinases (MAP2K1/MEK1 and MAP2K2/MEK2) and the extracellular signal-regulated kinases (MAPK3/ERK1 and MAPK1/ERK2). The phosphorylated form of RAF1 (on residues Ser-338 and Ser-339, by PAK1) phosphorylates BAD/Bcl2-antagonist of cell death at 'Ser-75'. Phosphorylates adenylyl cyclases: ADCY2, ADCY5 and ADCY6, resulting in their activation. Phosphorylates PPP1R12A resulting in inhibition of the phosphatase activity. Phosphorylates TNNT2/cardiac muscle troponin T. Can promote NF- κ B activation and inhibit signal transducers involved in motility (ROCK2), apoptosis (MAP3K5/ASK1 and STK3/MST2), proliferation and angiogenesis (RB1). Can protect cells from apoptosis also by translocating to the mitochondria where it binds BCL2 and displaces BAD/Bcl2-antagonist of cell death. Regulates Rho signaling and migration, and is required for normal wound healing. Plays a role in the oncogenic transformation of epithelial cells via repression of the TJ protein, occludin (OCLN) by inducing the up-regulation of a transcriptional repressor SNAI2/SLUG, which induces down-regulation of OCLN. Restricts caspase activation in response to selected stimuli, notably Fas stimulation, pathogen-mediated macrophage apoptosis, and erythroid differentiation.

Subunit Structure: Monomer. Homodimer. Heterodimerizes with BRAF and this heterodimer possesses a highly increased kinase activity compared to the respective homodimers or monomers (PubMed:16508002). Heterodimerization is mitogen-regulated and enhanced by 14-3-3 proteins (PubMed:16508002). MAPK1/ERK2 activation can induce a negative feedback that promotes the dissociation of the heterodimer (PubMed:16508002). Forms a multiprotein complex with Ras (M-Ras/MRAS), SHOC2 and protein phosphatase 1 (PPP1CA, PPP1CB and PPP1CC) (PubMed:16630891). Interacts with Ras proteins; the interaction is antagonized by RIN1 (PubMed:11784866). Weakly interacts with RIT1. Interacts (via N-terminus) with RGS14 (via RBD domains); the interaction mediates the formation of a ternary complex with BRAF, a ternary complex inhibited by GNAI1 (By similarity). Probably forms a complex composed of chaperones HSP90 and HSP70, co-chaperones CDC37, PPP5C, TSC1 and client protein TSC2, CDK4, AKT, RAF1 and NR3C1; this complex does not contain co-chaperones STIP1/HOP and PTGES3/p23 (PubMed:29127155). Interacts with STK3/MST2; the interaction inhibits its pro-apoptotic activity (PubMed:15618521). Interacts (when phosphorylated at Ser-259) with YWHAZ (unphosphorylated at 'Thr-232') (PubMed:9360956). Interacts with MAP2K1/MEK1 and MAP2K2/MEK2 (By similarity). Interacts with MAP3K5/ASF1 (via N-terminus) and this interaction inhibits the proapoptotic function of MAP3K5/ASK1 (PubMed:11427728). Interacts with PAK1 (via kinase domain) (PubMed:11733498). The phosphorylated form interacts with PIN1 (By similarity). The Ser-338 and Ser-339 phosphorylated form (by PAK1) interacts with BCL2 (PubMed:15849194). Interacts with PEBP1/RKIP and this interaction is enhanced if RAF1 is phosphorylated on residues Ser-338, Ser-339, Tyr-340 and Tyr-341 (PubMed:18294816). Interacts with ADCY2, ADCY5, ADCY6, DGKH, RCAN1/DSCR1, PPP1R12A, PKB/AKT1, PPP2CA, PPP2R1B, SPRY2, SPRY4, CNKSR1/CNK1, KSR2 and PHB/prohibitin (PubMed:10801873, PubMed:11719507, PubMed:12717443, PubMed:15385642, PubMed:15935327, PubMed:19710016, PubMed:10576742). Interacts with ROCK2 (By similarity). In its active form, interacts with PRMT5 (PubMed:21917714). Interacts with FAM83B; displaces 14-3-3 proteins from RAF1 and activates RAF1 (PubMed:22886302). Interacts with PDE8A; the interaction promotes RAF1 activity (PubMed:23509299).

Post-translational Modifications: Phosphorylation at Thr-269, Ser-338, Tyr-341, Thr-491 and Ser-494 results in its activation. Phosphorylation at Ser-29, Ser-43, Ser-289, Ser-296, Ser-301 and Ser-642 by MAPK1/ERK2 results in its inactivation. Phosphorylation at Ser-259 induces the interaction with YWHAZ and inactivates kinase activity. Dephosphorylation of Ser-259 by the complex containing protein phosphatase 1, SHOC2 and M-Ras/MRAS relieves inactivation, leading to stimulate RAF1 activity. Phosphorylation at Ser-338 by PAK1 and PAK5 and Ser-339 by PAK1 is required for its mitochondrial localization. Phosphorylation at Ser-621 in response to growth factor treatment stabilizes the protein, possibly by preventing proteasomal degradation. Phosphorylation at Ser-289, Ser-296, Ser-301, Ser-338 and Ser-621 are somehow linked to the methylation potential of cells. Treatment of cells with HGF in the presence of the methylation inhibitor 5'-methylthioadenosine (MTA) results in increased phosphorylation at Ser-338 and Ser-621 and decreased phosphorylation at Ser-296, Ser-301 and Ser-338. Dephosphorylation at Ser-338 by PPP5C results in an activity decrease. Methylated at Arg-563 in response to EGF treatment. This modification leads to destabilization of the protein, possibly through proteasomal degradation.

Similarity: Belongs to the protein kinase superfamily. TKL Ser/Thr protein kinase family. RAF subfamily.

NCBI AND UNIPROT INFORMATION

NCBI GI #	4506401
NCBI GeneID	5894
NCBI Accession #	NP_002871.1
NCBI GenBank Nucleotide #	NM_002880.3
UniProt Accession #	P04049; Q15278; Q9UC20; B0LPH8; B2R5N3
Molecular Weight	Observed: 73 kDa Predicted: 74 kDa
NCBI Official Full Name	RAF proto-oncogene serine/threonine-protein kinase isoform b
NCBI Official Synonym Full Names	Raf-1 proto-oncogene, serine/threonine kinase
NCBI Official Symbol	RAF1
NCBI Official Synonym Symbols	NS5; CRAF; Raf-1; c-Raf; CMD1NN
NCBI Protein Information	RAF proto-oncogene serine/threonine-protein kinase
UniProt Protein Name	RAF proto-oncogene serine/threonine-protein kinase
UniProt Gene Name	RAF1
UniProt Synonym Gene Names	RAF; cRaf

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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