SunLong Biotech Co.,LTD
Tel: 0086-571-56623320 Fax:0086-571-56623318
E-mail:sales@sunlongbiotech.com
www.sunlongbiotech.com

[Primary Antibody]

Rabbit Anti-RAF1 antibody

Catalog Number: SL23582R

FOR RESEARCH USE ONLY

[DATASHEET]

Host:	Rabbit
Isotype:	IgG
Clonality:	Polyclonal
Target:	RAF1
Immunogen:	KLH conjugated synthetic peptide derived from human RAF1: 231-330/648
Purification:	affinity purified by Protein A
Concentration:	1mg/ml
Storage:	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol. Shipped at 4℃. Store at -20 °C for one year. Avoid repeated freeze/thaw cycles.
Applications:	IHC-P=1:100-500 IHC-F=1:100-500 IF=1:100-500 （Paraffin sections need antigen repair） not yet tested in other applications. optimal dilutions/concentrations should be determined by the end user.
Reactivity:	Human(predicted:Mouse,Rat,Chicken,Dog,Pig,Horse)
Predicted MW.:	73kDa
Subcellular Location:	The nucleus cytoplasmic The cell membrane Mitochondrion
Background:	cRaf/Raf1 (RAF proto-oncogene serine/threonine-protein kinase) involved in the transduction of mitogenic signals from the cell membrane to the nucleus. Part of the Ras-dependent signaling pathway from receptors to the nucleus. Protects cells from apoptosis mediated by STK3. The Raf family is comprised of three members (aRaf, bRaf, and cRaf) that play a critical role in regulating cell growth and differentiation, and couple growth factor receptor stimulation to nuclear transcription factors via the Ras/mitogen activated protein kinase (MAPK) pathway. cRaf kinase is a small GTPase like kinase of 73 kDa, and is a signal transducer of multiple extracellular stimuli that is regulated by several pathways, and that once activated, phosphorylates MEK which in turn phosphorylates ERK. Raf1 is involved in the transduction of mitogenic signals from the cell membrane to the nucleus. It is part of the Ras dependent signaling pathway from receptors to

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	the nucleus. **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-kB 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:** Monomer. Homodimer. Heterodimerizes with BRAF and this heterodimer possesses a highly increased kinase activity compared to the respective homodimers or monomers. Heterodimerization is mitogen-regulated and enhanced by 14-3-3 proteins. MAPK1/ERK2 activation can induce a negative feedback that promotes the dissociation of the heterodimer. Forms a multiprotein complex with Ras (M-Ras/MRAS), SHOC2 and protein phosphatase 1 (PPP1CA, PPP1CB and PPP1CC). Interacts with Ras proteins; the interaction is antagonized by RIN1. 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). Interacts with STK3/MST2; the interaction inhibits its pro-apoptotic activity.

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	Interacts (when phosphorylated at Ser-259) with YWHAZ (unphosphorylated at 'Thr-232'). 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. Interacts with PAK1 (via kinase domain). The phosphorylated form interacts with PIN1. The Ser-338 and Ser-339 phosphorylated form (by PAK1) interacts with BCL2. Interacts with PEBP1/RKIP and this interaction is enhanced if RAF1 is phosphorylated on residues Ser-338, Ser-339, Tyr-340 and Tyr-341. Interacts with ADCY2, ADCY5, ADCY6, DGKH, RCAN1/DSCR1, ROCK2, PPP1R12A, PKB/AKT1, PPP2CA, PPP2R1B, SPRY2, SPRY4, CNKSR1/CNK1, KSR2 and PHB/prohibitin. In its active form, interacts with PRMT5. **Subcellular Location:** Cytoplasm. Cell membrane. Mitochondrion. Nucleus. Note=Colocalizes with RGS14 and BRAF in both the cytoplasm and membranes. Phosphorylation at Ser-259 impairs its membrane accumulation. Recruited to the cell membrane by the active Ras protein. Phosphorylation at Ser-338 and Ser-339 by PAK1 is required for its mitochondrial localization. Retinoic acid-induced Ser-621 phosphorylated form of RAF1 is predominantly localized at the nucleus. **Tissue Specificity:** In skeletal muscle, isoform 1 is more abundant than isoform 2. **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 PAK7/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. Methylated at Arg-563 in response to EGF treatment. This modification leads to destabilization of the protein, possibly through proteasomal degradation.

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	DISEASE: Noonan syndrome 5 (NS5) [MIM:611553]: A syndrome 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. Note=The disease is caused by mutations affecting the gene represented in this entry. LEOPARD syndrome 2 (LEOPARD2) [MIM:611554]: A disorder characterized by lentigines, electrocardiographic conduction abnormalities, ocular hypertelorism, pulmonic stenosis, abnormalities of genitalia, retardation of growth, and sensorineural deafness. Note=The disease is caused by mutations affecting the gene represented in this entry. **Similarity:** 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. **Database links:** **Entrez Gene:** 5894 Human **Entrez Gene:** 110157 Mouse **Entrez Gene:** 24703 Rat Omim: 164760 Human **SwissProt:** P04049 Human **SwissProt:** Q99N57 Mouse **SwissProt:** P11345 Rat **Unigene:** 159130 Human **Unigene:** 184163 Mouse **Unigene:** 33262 Rat

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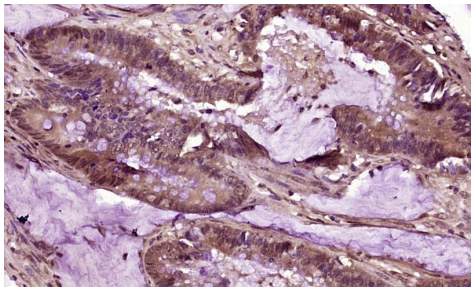
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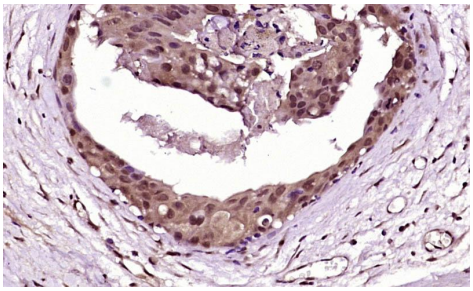
E-mail:sales@sunlongbiotech.com

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[VALIDATION IMAGES]



Paraformaldehyde-fixed, paraffin embedded (Human colon carcinoma); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (C-RAF/Raf-1) Polyclonal Antibody, Unconjugated (SL23582R) at 1:400 overnight at 4°C, followed by operating according to SP Kit(Rabbit) (sp-0023) instructionsand DAB staining.



Paraformaldehyde-fixed, paraffin embedded (Human breast carcinoma); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (C-RAF/Raf-1) Polyclonal Antibody, Unconjugated (SL23582R) at 1:400 overnight at 4°C, followed by operating according to SP Kit(Rabbit) (sp-0023) instructionsand DAB staining.

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