

# ALK-1 (F-1): sc-518148



The Power to Question

## BACKGROUND

Hereditary hemorrhagic telangiectasia (HHT) is an autosomal dominant disorder characterized by vascular abnormalities such as dilated vessels, hemorrhages, liver and lung congestion, and brain or heart ischemia. Mutations in two genes, Endoglin (also designated CD105) and ALK-1 (activin receptor-like kinase 1, also designated TGF $\beta$  superfamily RI), are responsible for HHT. Endoglin is mutated in HHT1, and ALK-1 is mutated in HHT2, both of which are thought to be caused by haploinsufficiency. Endoglin and ALK-1 are type III and type I members of the TGF $\beta$  receptor superfamily, respectively, that are expressed on vascular endothelial cells. Endoglin can only bind ligands of the TGF $\beta$  superfamily via association with the respective ligand binding receptors for TGF $\beta$ 1, TGF $\beta$ 3, activin-A, BMP-2 and BMP-7. ALK-1 preferentially binds TGF $\beta$ 1 and is expressed in bone marrow stromal cells, lung, brain, kidney and spleen.

## REFERENCES

1. Wu, X., et al. 1995. Cloning and characterization of the murine activin receptor like kinase-1 (ALK-1) homolog. *Biochem. Biophys. Res. Commun.* 216: 78-83.
2. Altomonte, M., et al. 1996. Expression and structural features of Endoglin (CD105), a transforming growth factor  $\beta$ 1 and  $\beta$ 3 binding protein, in human melanoma. *Br. J. Cancer* 74: 1586-1591.
3. Gallione, C.J., et al. 1998. Mutation and expression analysis of the Endoglin gene in hereditary hemorrhagic telangiectasia reveals null alleles. *Hum. Mutat.* 11: 286-294.
4. Klaus, D.J., et al. 1998. Novel missense and frameshift mutations in the activin receptor-like kinase-1 gene in hereditary hemorrhagic telangiectasia. *Hum. Mutat.* 12: 137.

## CHROMOSOMAL LOCATION

Genetic locus: ACVRL1 (human) mapping to 12q13.13; Acvrl1 (mouse) mapping to 15 F2.

## SOURCE

ALK-1 (F-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 415-436 of ALK-1 of mouse origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

ALK-1 (F-1) is available conjugated to agarose (sc-518148 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-518148 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-518148 PE), fluorescein (sc-518148 FITC), Alexa Fluor<sup>®</sup> 488 (sc-518148 AF488), Alexa Fluor<sup>®</sup> 546 (sc-518148 AF546), Alexa Fluor<sup>®</sup> 594 (sc-518148 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-518148 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-518148 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-518148 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

ALK-1 (F-1) is recommended for detection of ALK-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for ALK-1 siRNA (h): sc-40212, ALK-1 siRNA (m): sc-40213, ALK-1 shRNA Plasmid (h): sc-40212-SH, ALK-1 shRNA Plasmid (m): sc-40213-SH, ALK-1 shRNA (h) Lentiviral Particles: sc-40212-V and ALK-1 shRNA (m) Lentiviral Particles: sc-40213-V.

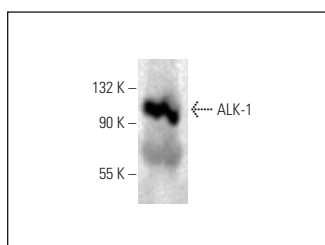
Molecular Weight of ALK-1: 53 kDa.

Positive Controls: human platelet extract: sc-363773.

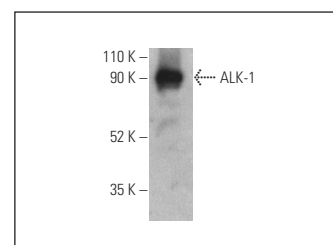
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## DATA



ALK-1 (F-1): sc-518148. Western blot analysis of ALK-1 expression in human platelet tissue extract. Detection reagent used: m-IgG $\kappa$  BP-HRP: sc-516102.



ALK-1 (F-1) HRP: sc-518148 HRP. Direct western blot analysis of human recombinant ALK-1 fusion protein.

## STORAGE

Store at 4 $^{\circ}$  C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.