

MVK (D-3): sc-390669

BACKGROUND

Mevalonate kinase (MVK) is an early enzyme in isoprenoid and sterol synthesis. Mevalonate kinase catalyzes the ATP-dependent phosphorylation of mevalonic acid to form mevalonate 5-phosphate. Mevalonate is a key intermediate, and mevalonate kinase a key early enzyme, in isoprenoid and sterol synthesis. Deficiency in MVK activity contributes to mevalonic aciduria and hyperimmunoglobulinemia D/periodic fever syndrome (HIDS). Mevalonic acid accumulates because of failure of conversion to 5-phosphomevalonic acid, which is catalyzed by mevalonate kinase. Mevalonic acid is synthesized from 3-hydroxy-3-methylglutaryl-CoA, a reaction catalyzed by HMG-CoA reductase.

REFERENCES

- Zheng, Q. 1994. On the exact hazard and survival functions of the MVK stochastic carcinogenesis model. *Risk Anal.* 14: 1081-1084.
- Zheng, Q. 1995. On the MVK stochastic carcinogenesis model with Erlang distributed cell life lengths. *Risk Anal.* 15: 495-502.
- Houten, S.M., et al. 1999. Mutations in MVK, encoding mevalonate kinase, cause hyperimmunoglobulinemia D and periodic fever syndrome. *Nat. Genet.* 22: 175-177.
- Houten, S.M., et al. 2001. Organization of the mevalonate kinase (MVK) gene and identification of novel mutations causing mevalonic aciduria and hyperimmunoglobulinemia D and periodic fever syndrome. *Eur. J. Hum. Genet.* 9: 253-259.
- Cuisset, L., et al. 2001. Molecular analysis of MVK mutations and enzymatic activity in hyper-IgD and periodic fever syndrome. *Eur. J. Hum. Genet.* 9: 260-266.

CHROMOSOMAL LOCATION

Genetic locus: MVK (human) mapping to 12q24.11.

SOURCE

MVK (D-3) is a mouse monoclonal antibody raised against amino acids 97-396 mapping at the C-terminus of MVK of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MVK (D-3) is available conjugated to agarose (sc-390669 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390669 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390669 PE), fluorescein (sc-390669 FITC), Alexa Fluor® 488 (sc-390669 AF488), Alexa Fluor® 546 (sc-390669 AF546), Alexa Fluor® 594 (sc-390669 AF594) or Alexa Fluor® 647 (sc-390669 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390669 AF680) or Alexa Fluor® 790 (sc-390669 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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RESEARCH USE

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

APPLICATIONS

MVK (D-3) is recommended for detection of MVK of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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 MVK siRNA (h): sc-106266, MVK shRNA Plasmid (h): sc-106266-SH and MVK shRNA (h) Lentiviral Particles: sc-106266-V.

Molecular Weight (predicted) of MVK: 42 kDa.

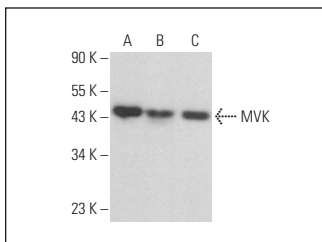
Molecular Weight (observed) of MVK: 43/46 kDa.

Positive Controls: MVK (h): 293T Lysate: sc-112229, A2058 whole cell lysate: sc-364178 or Caki-1 cell lysate: sc-2224.

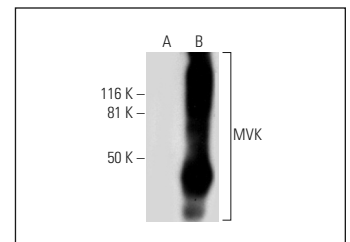
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® 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-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



MVK (D-3): sc-390669. Western blot analysis of MVK expression in A2058 (A), Caki-1 (B) and HEK293 (C) whole cell lysates.



MVK (D-3): sc-390669. Western blot analysis of MVK expression in non-transfected: sc-117752 (A) and human MVK transfected: sc-112229 (B) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

- Romeo, M.A., et al. 2020. STAT3 and mutp53 engage a positive feedback loop involving HSP90 and the mevalonate pathway. *Front. Oncol.* 10: 1102.
- Lanceta, L., et al. 2021. Differential gene expression analysis of palbociclib-resistant TNBC via RNA-seq. *Breast Cancer Res. Treat.* E-published.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.