

# Espin (E-7): sc-393469

## BACKGROUND

Espin (ESPN), also known as autosomal recessive deafness type 36 protein (DFNB36), is an 854 amino acid cytoplasmic protein that contains nine ANK repeats and one WH2 domain. The WH2 domain of Espin binds Actin monomers and mediates the assembly of the Actin bundle. This interaction plays a major role in the moderation of the organization, dynamics and signaling capacities of the Actin filament-rich specializations that regulate sensory transduction in various sensory cells. Defects in Espin are the cause of non-syndromic sensorineural deafness autosomal recessive type 36 (DFNB36), a sensorineural hearing loss caused by damage to the neural receptors of the inner ear, the nerve pathways to the brain or the region of the brain responsible for sound. In humans, Espin is expressed as two isoforms produced by alternative splicing and has been found to interact with IRSp53 and Profilin-2. In rodents, four major isoforms ranging from approximately 110 to 25 kDa have been identified with additional splice variants possible.

## REFERENCES

1. Bartles, J.R., et al. 1996. Identification and characterization of Espin, an Actin-binding protein localized to the F-Actin-rich junctional plaques of Sertoli cell ectoplasmic specializations. *J. Cell Sci.* 109: 1229-1239.
2. Zheng, L., et al. 2000. The deaf jerker mouse has a mutation in the gene encoding the Espin Actin-bundling proteins of hair cell stereocilia and lacks Espins. *Cell* 102: 377-385.
3. Naz, S., et al. 2004. Mutations of ESPN cause autosomal recessive deafness and vestibular dysfunction. *J. Med. Genet.* 41: 591-595.
4. Loomis, P.A., et al. 2006. Targeted wild-type and jerker espins reveal a novel, WH2-domain-dependent way to make Actin bundles in cells. *J. Cell Sci.* 119: 1655-1665.

## CHROMOSOMAL LOCATION

Genetic locus: ESPN (human) mapping to 1p36.31; Espn (mouse) mapping to 4 E2.

## SOURCE

Espin (E-7) is a mouse monoclonal antibody raised against amino acids 645-767 mapping within an internal region of Espin of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Espin (E-7) is available conjugated to agarose (sc-393469 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393469 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393469 PE), fluorescein (sc-393469 FITC), Alexa Fluor® 488 (sc-393469 AF488), Alexa Fluor® 546 (sc-393469 AF546), Alexa Fluor® 594 (sc-393469 AF594) or Alexa Fluor® 647 (sc-393469 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393469 AF680) or Alexa Fluor® 790 (sc-393469 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

Espin (E-7) is recommended for detection of Espin of mouse, rat and 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).

Espin (E-7) is also recommended for detection of Espin in additional species, including canine and porcine.

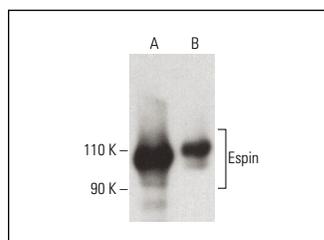
Suitable for use as control antibody for Espin siRNA (h): sc-78697, Espin siRNA (m): sc-40510, Espin shRNA Plasmid (h): sc-78697-SH, Espin shRNA Plasmid (m): sc-40510-SH, Espin shRNA (h) Lentiviral Particles: sc-78697-V and Espin shRNA (m) Lentiviral Particles: sc-40510-V.

Molecular Weight of Espin isoform 1: 110 kDa.

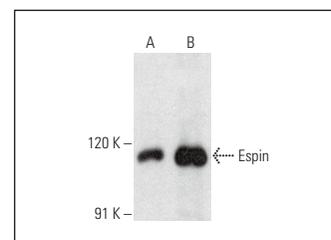
Molecular Weight of Espin mouse variant: 25 kDa.

Positive Controls: human testis extract: sc-363781, mouse testis extract: sc-2405 or rat testis extract: sc-2400.

## DATA



Espin (E-7) HRP: sc-393469 HRP. Direct western blot analysis of Espin expression in rat testis (A) and mouse testis (B) tissue extracts.



Espin (E-7): sc-393469. Western blot analysis of Espin expression in human testis (A) and rat testis (B) tissue extracts.

## SELECT PRODUCT CITATIONS

1. Zhu, Y., et al. 2018. Overexpression of microRNA-612 restrains the growth, invasion, and tumorigenesis of melanoma cells by targeting Espin. *Mol. Cells* 41: 119-126.
2. Li, J., et al. 2022. Collapsin response mediator protein 1 (CRMP1) is required for high-frequency hearing. *Am. J. Pathol.* 192: 805-812.
3. Gill, N.B., et al. 2023. Ginsenoside Rc from panax ginseng ameliorates palmitate-induced UB/OC-2 cochlear cell Injury. *Int. J. Mol. Sci.* 24: 7345.

## STORAGE

Store at 4° 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.