SANTA CRUZ BIOTECHNOLOGY, INC.

Espin (E-1): sc-515657

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 640-657 within an internal region of Espin of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-515657 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

Espin (E-1) 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).

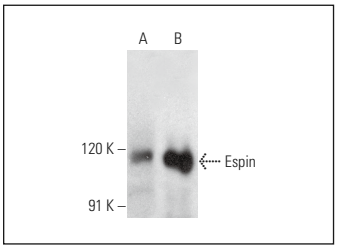
Suitable for use as control antibody for Espin siRNA (h): sc-78697, Espin siRNA (m): sc-40510, Espin shRNA Plasmid (h): sc-78697-SH, Espin shRNA Plasmid (m): sc-40510-SH, Espin shRNA (h) Lentiviral Particles: sc-78697-V and Espin shRNA (m) Lentiviral Particles: sc-40510-V.

Molecular Weight of Espin isoform 1: 110 kDa.

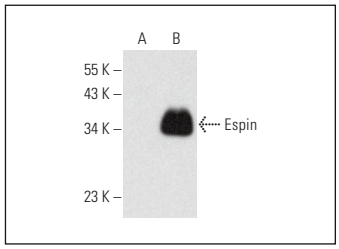
Molecular Weight of Espin mouse variant: 25 kDa.

Positive Controls: Espin (m): 293T Lysate: sc-125310, human testis extract: sc-363781 or rat testis extract: sc-2400.

DATA



Espin (E-1): sc-515657. Western blot analysis of Espin expression in human testis (**A**) and rat testis (**B**) tissue extracts.



Espin (E-1): sc-515657. Western blot analysis of Espin expression in non-transfected: sc-117752 (**A**) and mouse Espin transfected: sc-125310 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Verschueren, A., et al. 2022. Planar polarity in primate cone photoreceptors: a potential role in Stiles Crawford effect phototropism. Commun. Biol. 5: 89.
2. Bal, N.B., et al. 2024. Myricetin may improve cardiac dysfunction possibly through regulating blood pressure and cellular stress molecules in high-fructose-fed rats. Anatol. J. Cardiol. 28: 55-64.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.