

# MPDZ (43): sc-136293

## BACKGROUND

MPDZ (multiple PDZ domain protein), also known as MUPP1, is a 2,042 amino acid peripheral membrane protein that co-localizes with SR-2C on the apical membrane of epithelial choroid plexus cells. Expressed in heart, brain, placenta, liver, skeletal muscle, kidney and pancreas, MPDZ causes clustering of SR-2C, a serotonin receptor, at the cell surface. MPDZ is member of the NMDAR signaling complex that is involved in regulating AMPAR potentiation and synaptic plasticity in excitatory synapses. As a tight junction protein in epithelial cells, MPDZ interacts with G protein-coupled receptor SSTR3 and together regulate transepithelial permeability in a pertussis toxin sensitive manner. MPDZ along with KIR4.2 may form a complex with other proteins in the nephron and act to regulate ion transport. MPDZ contains one L27 domain and 13 PDZ domains.

## REFERENCES

1. Sitek, B., et al. 2003. Expression of MUPP1 protein in mouse brain. *Brain Res.* 970: 178-187.
2. Sharma, S.C., et al. 2007. Design, synthesis, and evaluation of linear and cyclic peptide ligands for PDZ10 of the multi-PDZ domain protein MUPP1. *Biochemistry* 46: 12709-12720.
3. Lanasa, M.A., et al. 2007. The tight junction protein, MUPP1, is up-regulated by hypertonicity and is important in the osmotic stress response in kidney cells. *Proc. Natl. Acad. Sci. USA* 104: 13672-13677.
4. Estevez, M.A., et al. 2008. The neuronal Rho A GEF, Tech, interacts with the synaptic multi-PDZ-domain-containing protein, MUPP1. *J. Neurochem.* 106: 1287-1297.
5. Karpyak, V.M., et al. 2009. Sequence variations of the human MPDZ gene and association with alcoholism in subjects with European ancestry. *Alcohol. Clin. Exp. Res.* 33: 712-721.
6. Sindic, A., et al. 2009. MUPP1 complexes renal K<sup>+</sup> channels to alter cell surface expression and whole cell currents. *Am. J. Physiol. Renal Physiol.* 297: F36-F45.
7. Liew, C.W., et al. 2009. Interaction of the human somatostatin receptor 3 with the multiple PDZ domain protein MUPP1 enables somatostatin to control permeability of epithelial tight junctions. *FEBS Lett.* 583: 49-54.
8. Ackermann, F., et al. 2009. CaMKII $\alpha$  interacts with multi-PDZ domain protein MUPP1 in spermatozoa and prevents spontaneous acrosomal exocytosis. *J. Cell Sci.* 122: 4547-4557.
9. Funk, A.J., et al. 2009. Decreased expression of NMDA receptor-associated proteins in frontal cortex of elderly patients with schizophrenia. *Neuroreport* 20: 1019-1022.

## CHROMOSOMAL LOCATION

Genetic locus: Mpdz (mouse) mapping to 4 C3.

## SOURCE

MPDZ (43) is a mouse monoclonal antibody raised against amino acids 65-247 of MPDZ of rat origin.

## PRODUCT

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

## APPLICATIONS

MPDZ (43) is recommended for detection of MPDZ of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for MPDZ siRNA (m): sc-149528, MPDZ shRNA Plasmid (m): sc-149528-SH and MPDZ shRNA (m) Lentiviral Particles: sc-149528-V.

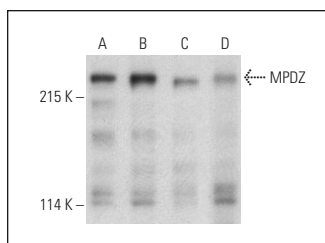
Molecular Weight of MPDZ: 220 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, rat brain extract: sc-2392 or mouse brain extract: sc-2253.

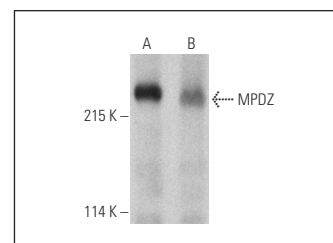
## RECOMMENDED SUPPORT REAGENTS

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™ 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).

## DATA



MPDZ (43): sc-136293. Western blot analysis of MPDZ expression in NIH/3T3 (A), 3T3-L1 (B) and RPE-J (C) whole cell lysates and mouse brain tissue extract (D). Detection reagent used: m-IgG $\kappa$  BP-HRP: sc-516102.



MPDZ (43): sc-136293. Western blot analysis of MPDZ expression in mouse brain (A) and rat brain (B) tissue extracts. Detection reagent used: m-IgG $\kappa$  BP-HRP: sc-516102.

## SELECT PRODUCT CITATIONS

1. Ignarski, M., et al. 2019. The RNA-protein interactome of differentiated kidney tubular epithelial cells. *J. Am. Soc. Nephrol.* 30: 564-576.

## 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.