

matrin-3 (2539C3a): sc-81318

BACKGROUND

matrin-3 is a nuclear matrix protein containing one matrin-type zinc finger and two RRM (RNA recognition motif) domains. matrin-3 plays a role in transcription and may interact with other nuclear matrix proteins to form the internal fibrogranular network. In association with the PSF-p54/NRB heteromer, matrin-3 may play a role in the nuclear retention of defective RNAs. As the main substrate for PKA-mediated phosphorylation, matrin-3 may serve as a rapid way of transferring information from synapses containing NMDA receptors to neuronal nuclei under physiological conditions. Also, the phosphorylation of matrin-3 may contribute to neuronal death under pathological conditions. It is likely that matrin-3 activity is regulated by calcium dependent interaction with CaM I and also by caspase induced cleavage.

REFERENCES

1. Belgrader, P., et al. 1991. Molecular cloning of matrin-3. A 125 kDa protein of the nuclear matrix contains an extensive acidic domain. *J. Biol. Chem.* 266: 9893-9899.
2. Matsushima, Y., et al. 1998. Cloning and genomic mapping of the mouse matrin-3 gene and its pseudogenes. *Cytogenet. Cell Genet.* 81: 194-198.
3. Czarny-Ratajczak, M., et al. 2001. A mutation in COL9A1 causes multiple epiphyseal dysplasia: further evidence for locus heterogeneity. *Am. J. Hum. Genet.* 69: 969-980.
4. Giordano, G., et al. 2005. Activation of NMDA receptors induces protein kinase A-mediated phosphorylation and degradation of matrin-3. Blocking these effects prevents NMDA-induced neuronal death. *J. Neurochem.* 94: 808-818.
5. De Angelis, P.M., et al. 2006. Cellular response to 5-fluorouracil (5-FU) in 5-FU-resistant colon cancer cell lines during treatment and recovery. *Mol. Cancer* 5: 20.
6. Yu, L.R., et al. 2007. Improved titanium dioxide enrichment of phosphopeptides from HeLa cells and high confident phosphopeptide identification by cross-validation of MS/MS and MS/MS/MS spectra. *J. Proteome Res.* 6: 4150-4162.

CHROMOSOMAL LOCATION

Genetic locus: MATR3 (human) mapping to 5q31.2; Matr3 (mouse) mapping to 18 B2.

SOURCE

matrin-3 (2539C3a) is a mouse monoclonal antibody raised against a recombinant protein corresponding to an internal region of matrin-3 of human origin.

PRODUCT

Each vial contains 100 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 1.0% stabilizer protein.

RESEARCH USE

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

APPLICATIONS

matrin-3 (2539C3a) is recommended for detection of matrin-3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for matrin-3 siRNA (h): sc-62604, matrin-3 siRNA (m): sc-62605, matrin-3 shRNA Plasmid (h): sc-62604-SH, matrin-3 shRNA Plasmid (m): sc-62605-SH, matrin-3 shRNA (h) Lentiviral Particles: sc-62604-V and matrin-3 shRNA (m) Lentiviral Particles: sc-62605-V.

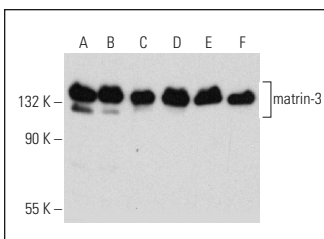
Molecular Weight of matrin-3: 95 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, HeLa whole cell lysate: sc-2200 or K-562 whole cell lysate: sc-2203.

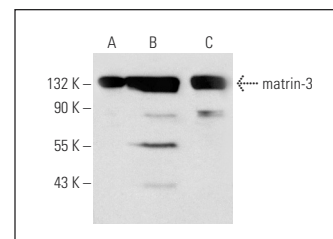
RECOMMENDED SUPPORT REAGENTS

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).

DATA



matrin-3 (2539C3a): sc-81318. Western blot analysis of matrin-3 expression in HeLa (A), Hep G2 (B), MCF7 (C), RT-4 (D), Neuro-2A (E) and EOC 20 (F) whole cell lysates.



matrin-3 (2539C3a): sc-81318. Western blot analysis of matrin-3 expression in 293 (A), K-562 (B) and HeLa (C) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Fujita, T. and Fujii, H. 2011. Direct identification of insulator components by insertional chromatin immunoprecipitation. *PLoS ONE* 6: e26109.
2. Tada, M., et al. 2018. matrin-3 is a component of neuronal cytoplasmic inclusions of motor neurons in sporadic amyotrophic lateral sclerosis. *Am. J. Pathol.* 188: 507-514.
3. Cha, H.J., et al. 2021. Inner nuclear protein matrin-3 coordinates cell differentiation by stabilizing chromatin architecture. *Nat. Commun.* 12: 6241.

STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.