SANTA CRUZ BIOTECHNOLOGY, INC.

DRAM (M3-P4B4): sc-81713

BACKGROUND

DRAM (damage-regulated autophagy modulator) is a multi-pass membrane protein that belongs to the TMEM77 family of proteins and localizes to the lysosome membrane. DRAM is a highly conserved protein across many species and contains six transmembrane domains and an endoplasmic reticulum (ER) signal peptide. Its expression is induced by both p53 and p73, and it acts as a key player that is required (but not sufficient) for p53-induced autophagy and apoptosis. Although its expression is also induced by p73, DRAM is dispensable for p73-mediated apoptosis. As is suggested by its lysosomal localization, DRAM may participate in the degradation of proteins or in trafficking through the secretory pathway. In addition, DRAM expression is downregulated in human cancers, implying a profound role for DRAM in tumor development.

CHROMOSOMAL LOCATION

Genetic locus: DRAM1 (human) mapping to 12q23.2.

SOURCE

DRAM (M3-P4B4) is a mouse monoclonal antibody raised against a synthetic peptide corresponding to amino acids 192-201 of DRAM of human origin.

PRODUCT

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

DRAM (M3-P4B4) is available conjugated to agarose (sc-81713 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-81713 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-81713 PE), fluorescein (sc-81713 FITC), Alexa Fluor® 488 (sc-81713 AF488), Alexa Fluor® 546 (sc-81713 AF546), Alexa Fluor® 594 (sc-81713 AF594) or Alexa Fluor® 647 (sc-81713 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-81713 AF680) or Alexa Fluor® 790 (sc-81713 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

STORAGE

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

APPLICATIONS

DRAM (M3-P4B4) is recommended for detection of DRAM of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

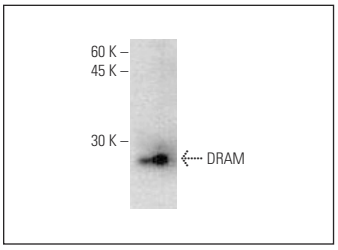
Suitable for use as control antibody for DRAM siRNA (h): sc-96209, DRAM shRNA Plasmid (h): sc-96209-SH and DRAM shRNA (h) Lentiviral Particles: sc-96209-V.

Molecular Weight of DRAM: 26 kDa.

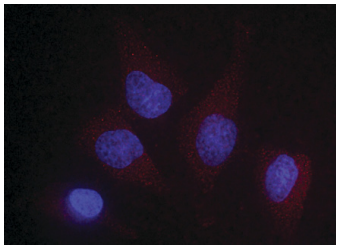
RECOMMENDED SUPPORT REAGENTS

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



DRAM (M3-P4B4): sc-81713. Western blot analysis of DRAM expression in HeLa cytoplasmic extract prepared from cells grown in log phase.



DRAM (M3-P4B4): sc-81713. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic staining.

SELECT PRODUCT CITATIONS

1. Armstrong, A., et al. 2014. Lysosomal network proteins as potential novel CSF biomarkers for Alzheimer's disease. Neuromolecular Med. 16: 150-160.
2. Liu, K., et al. 2014. Phosphorylated AKT inhibits the apoptosis induced by DRAM-mediated mitophagy in hepatocellular carcinoma by preventing the translocation of DRAM to mitochondria. Cell Death Dis. 5: e1078.
3. Bak, D.H., et al. 2018. Anti-apoptotic effects of human placental hydrolysate against hepatocyte toxicity *in vivo* and *in vitro*. Int. J. Mol. Med. 42: 2569-2583.
4. Pacheco-Velázquez, S.C., et al. 2018. Energy metabolism drugs block triple negative breast metastatic cancer cell phenotype. Mol. Pharm. 15: 2151-2164.
5. Hung, T.H., et al. 2020. Decreased placental apoptosis and autophagy in pregnancies complicated by gestational diabetes with large-for-gestational age fetuses. Placenta 90: 27-36.
6. Yin, K., et al. 2021. Mitophagy protein PINK1 suppresses colon tumor growth by metabolic reprogramming via p53 activation and reducing acetyl-CoA production. Cell Death Differ. 28: 2421-2435.
7. Li, X., et al. 2022. The comprehensive analysis identified an autophagy signature for the prognosis and the immunotherapy efficiency prediction in lung adenocarcinoma. Front. Immunol. 13: 749241.

RESEARCH USE

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