

ABR (24): sc-135821

BACKGROUND

ABR, or active breakpoint cluster region-related protein, contains a Dbl-homology (DH) domain, a Pleckstrin homology domain and a C-terminal Rho-GAP domain specific for Rac. Its DH domain is only moderately active as a guanine exchange factor (GEF). ABR is highly related to Bcr (breakpoint cluster region) with 68% amino acid sequence identity. It is expressed at high levels in the central nervous system and in hematopoietic tissue. ABR, together with Bcr, is essential for normal astrocyte function, vestibular morphogenesis and Rac-mediated pathway regulation. The loss of functional ABR in murine macrophages does not result in any obvious mutant phenotype. A mild response occurs with the loss of Bcr. However, the loss of both proteins results in damage to multiple organs and possible death. This suggests that Bcr and ABR may compensate for each other.

REFERENCES

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2. Kaartinen, V., et al. 2001. Abnormal function of astroglia lacking ABR and Bcr Rac GAPs. *Development* 128: 4217-4227.
3. Knetsch, M.L., et al. 2001. The Dictyostelium Bcr/ABR-related protein DRG regulates both Rac- and Rab-dependent pathways. *EMBO J.* 20: 1620-1629.
4. Kaartinen, V., et al. 2002. Vestibular dysgenesis in mice lacking ABR and Bcr Cdc42/Rac GAPs. *Dev. Dyn.* 223: 517-525.
5. Cho, K., et al. 2004. CD14-mediated alterations in transcription and splicing of endogenous retroviruses after injury. *Arch. Virol.* 149: 2215-2233.
6. Hwang, S.L., et al. 2005. Expression of Rac 3 in human brain tumors. *J. Clin. Neurosci.* 12: 571-574.
7. Kandpal, R.P. 2006. Rho GTPase activating proteins in cancer phenotypes. *Curr. Protein Pept. Sci.* 7: 355-365.
8. Olabisi, O.O., et al. 2006. Bcr interacts with components of the endosomal sorting complex required for transport-I and is required for epidermal growth factor receptor turnover. *Cancer Res.* 66: 6250-6257.
9. Cho, Y.J., et al. 2007. ABR and Bcr, two homologous Rac GTPase-activating proteins, control multiple cellular functions of murine macrophages. *Mol. Cell. Biol.* 27: 899-911.

CHROMOSOMAL LOCATION

Genetic locus: ABR (human) mapping to 17p13.3; Abr (mouse) mapping to 11 B5.

SOURCE

ABR (24) is a mouse monoclonal antibody raised against amino acids 21-121 of ABR of human origin.

PRODUCT

Each vial contains 50 µg IgG₁ in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

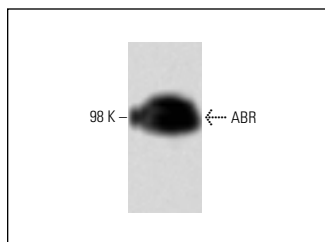
ABR (24) is recommended for detection of ABR of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for ABR siRNA (h): sc-61930, ABR siRNA (m): sc-61931, ABR shRNA Plasmid (h): sc-61930-SH, ABR shRNA Plasmid (m): sc-61931-SH, ABR shRNA (h) Lentiviral Particles: sc-61930-V and ABR shRNA (m) Lentiviral Particles: sc-61931-V.

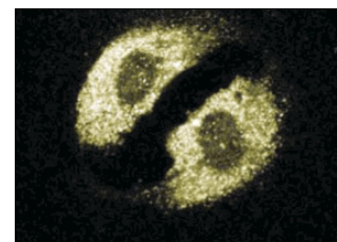
Molecular Weight of ABR: 98 kDa.

Positive Controls: rat brain extract: sc-2392 or rat cerebrum tissue extract.

DATA



ABR (24): sc-135821. Western blot analysis of ABR expression in rat cerebrum tissue extract.



ABR (24): sc-135821. Immunofluorescence staining of human intestinal smooth muscle cells showing cytoplasmic staining.

SELECT PRODUCT CITATIONS

1. Duman, J.G., et al. 2019. The adhesion-GPCR BAI1 shapes dendritic arbors via Bcr-mediated RhoA activation causing late growth arrest. *Elife* 8 pii: e47566.

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. Not for resale.

PROTOCOLS

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