SANTA CRUZ BIOTECHNOLOGY, INC.

WRP (B-3): sc-514179

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

WAVE-associated Rac GTPase-activating protein (WRP), also known as SLIT-ROBO Rho GTPase-activating protein 3 (srGAP3) and Mental disorder-activating GAP (MEGAP), is a 1,099 amino acid protein containing one FCH domain, one Rho-GAP domain and one SH3 domain. Expressed highly in brain, and in lower levels in kidney, WRP is thought to play a role in cell migration through its interaction with Cdc42 and Rac1. Cdc42 and Rac1 are two intracellular signaling proteins that regulate the multistep cell migration process. WRP downregulates Cdc42 and Rac1 activity, thereby impairing actin and microtubule dynamics, the formation of protrusions, and total cell migration. Defects in the gene encoding WRP have been linked to severe idiopathic mental retardation. Three isoforms of WRP exist as a result of alternative splicing events.

REFERENCES

1. Miki, H., et al. 1998. WAVE, a novel WASP-family protein involved in actin reorganization induced by Rac. EMBO J. 17: 6932-6941.
2. Wong, K., et al. 2001. Signal transduction in neuronal migration: roles of GTPase activating proteins and the small GTPase Cdc42 in the Slit-Robo pathway. Cell 107: 209-221.
3. Soderling, S.H., et al. 2002. The WRP component of the WAVE-1 complex attenuates Rac-mediated signalling. Nat. Cell Biol. 4: 970-975.
4. Endris, V., et al. 2002. The novel Rho-GTPase activating gene MEGAP/srGAP3 has a putative role in severe mental retardation. Proc. Natl. Acad. Sci. USA 99: 11754-11759.
5. Miki, H., et al. 2003. Regulation of actin dynamics by WASP family proteins. J. Biochem. 134: 309-313.
6. Soderling, S.H., et al. 2007. A WAVE-1 and WRP signaling complex regulates spine density, synaptic plasticity, and memory. J. Neurosci. 27: 355-365.
7. Waltereit, R., et al. 2008. Expression of MEGAP mRNA during embryonic development. Gene Expr. Patterns 8: 307-310.

CHROMOSOMAL LOCATION

Genetic locus: SRGAP3 (human) mapping to 3p25.3; Srgap3 (mouse) mapping to 6 E3.

SOURCE

WRP (B-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 196-215 within an internal region of WRP of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} 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-514179 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

WRP (B-3) is recommended for detection of WRP 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 WRP siRNA (h): sc-76929, WRP siRNA (m): sc-76930, WRP shRNA Plasmid (h): sc-76929-SH, WRP shRNA Plasmid (m): sc-76930-SH, WRP shRNA (h) Lentiviral Particles: sc-76929-V and WRP shRNA (m) Lentiviral Particles: sc-76930-V.

Molecular Weight (predicted) of WRP: 124 kDa.

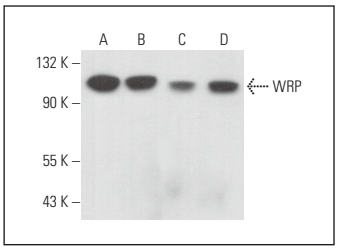
Molecular Weight (observed) of WRP: 140 kDa.

Positive Controls: SH-SY5Y cell lysate: sc-3812, IMR-32 cell lysate: sc-2409 or Caki-1 cell lysate: sc-2224.

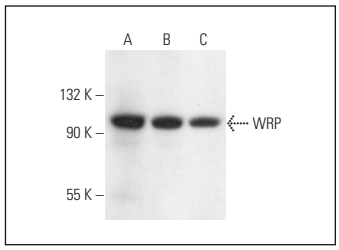
RECOMMENDED SUPPORT REAGENTS

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



WRP (B-3): sc-514179. Western blot analysis of WRP expression in IMR-32 (**A**), HEK293 (**B**), EOC 20 (**C**) and C6 (**D**) whole cell lysates.



WRP (B-3): sc-514179. Western blot analysis of WRP expression in SH-SY5Y (**A**), IMR-32 (**B**) and Caki-1 (**C**) whole cell lysates.

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.

PROTOCOLS

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