

SMARCAL1 (D3P5I) Rabbit mAb

Orders: 877-616-CELL (2355)
orders@cellsignal.com

Support: 877-678-TECH (8324)

Web: info@cellsignal.com
cellsignal.com

3 Trask Lane | Danvers | Massachusetts | 01923 | USA

For Research Use Only. Not for Use in Diagnostic Procedures.

| Applications: | Reactivity: | Sensitivity: | MW (kDa): | Source/Isotype: | UniProt ID: | Entrez-Gene Id: |
|---------------|-------------|--------------|-----------|-----------------|-------------|-----------------|
| W, IP | H | Endogenous | 105 | Rabbit IgG | #Q9NZC9 | 50485 |

Product Usage Information**Application**

Western Blotting
Immunoprecipitation

Dilution

1:1000
1:50

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

Specificity/Sensitivity

SMARCAL1 (D3P5I) Rabbit mAb recognizes endogenous levels of total SMARCAL1 protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Ala933 of human SMARCAL1 protein.

Background

SMARCAL1 was first identified as a ubiquitously expressed member of the SNF2 family with homology to the *E. coli* protein HepA (1). Mutations in the gene encoding SMARCAL1 were subsequently shown to be the cause of Schimke immuno-osseous dysplasia (SIOD), an autosomal recessive disorder characterized by phenotypes in multiple systems, including spondyloepiphyseal dysplasia, renal dysfunction, immunodeficiency, and impaired neurological function (2). Researchers have also associated SMARCAL1 deficiency with predisposition to non-Hodgkin's lymphoma (3). The array of phenotypes associated with SMARCAL1 is likely due to its role as an annealing helicase in the DNA damage response. During DNA replication stress, SMARCAL1 is phosphorylated by DNA repair kinases (ATM, ATR, DNA-PK) (4). SMARCAL1 deficiency sensitizes cells to replication stress agents, and appears to increase the frequency of replication fork breakdown (4,5). SMARCAL1 is also required for efficient DNA double strand break repair via the nonhomologous end joining (NHEJ) DNA repair pathway (6). Researchers have suggested that inhibitors targeting SMARCAL1 may be effective in sensitizing cancer cells to chemotherapeutic agents (reviewed in 7).

Background References

1. Coleman, M.A. et al. (2000) *Genomics* 65, 274-82.
2. Boerkoel, C.F. et al. (2002) *Nat Genet* 30, 215-20.
3. Baradaran-Heravi, A. et al. (2012) *Am J Med Genet A* 158A, 2204-13.
4. Bansbach, C.E. et al. (2009) *Genes Dev* 23, 2405-14.
5. Silverberg, M.J. et al. (2009) *AIDS* 23, 2337-45.
6. Keka, I.S. et al. (2015) *Nucleic Acids Res* 43, 6359-72.
7. Zhang, L. et al. (2012) *Biochem Biophys Res Commun* 427, 232-5.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IP:** Immunoprecipitation

Cross-Reactivity Key

H: Human

Trademarks and Patents

Cell Signaling Technology is a trademark of Cell Signaling Technology, Inc.

XP is a registered trademark of Cell Signaling Technology, Inc.

All other trademarks are the property of their respective owners. Visit cellsignal.com/trademarks for more information.

Limited Uses

Except as otherwise expressly agreed in a writing signed by a legally authorized representative of CST, the following terms apply to Products provided by CST, its affiliates or its distributors. Any Customer's

terms and conditions that are in addition to, or different from, those contained herein, unless separately accepted in writing by a legally authorized representative of CST, are rejected and are of no force or effect.

Products are labeled with For Research Use Only or a similar labeling statement and have not been approved, cleared, or licensed by the FDA or other regulatory foreign or domestic entity, for any purpose. Customer shall not use any Product for any diagnostic or therapeutic purpose, or otherwise in any manner that conflicts with its labeling statement. Products sold or licensed by CST are provided for Customer as the end-user and solely for research and development uses. Any use of Product for diagnostic, prophylactic or therapeutic purposes, or any purchase of Product for resale (alone or as a component) or other commercial purpose, requires a separate license from CST. Customer shall (a) not sell, license, loan, donate or otherwise transfer or make available any Product to any third party, whether alone or in combination with other materials, or use the Products to manufacture any commercial products, (b) not copy, modify, reverse engineer, decompile, disassemble or otherwise attempt to discover the underlying structure or technology of the Products, or use the Products for the purpose of developing any products or services that would compete with CST products or services, (c) not alter or remove from the Products any trademarks, trade names, logos, patent or copyright notices or markings, (d) use the Products solely in accordance with CST Product Terms of Sale and any applicable documentation, and (e) comply with any license, terms of service or similar agreement with respect to any third party products or services used by Customer in connection with the Products.