

Recombinant SMARCAL1 protein

Catalog No: 82169, 82769

Expressed In: Baculovirus

Quantity: 20, 1000 µg

Source: Human

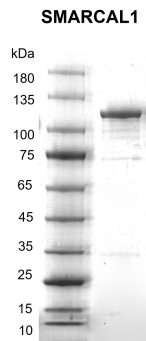
Buffer Contents: Recombinant SMARCAL1 protein is supplied in 25 mM HEPES pH 7.5, 300 mM NaCl, 20% glycerol, 0.04% Triton X-100, 0.5 mM TCEP.

Background: **SMARCAL1 (SWI/SNF-related, matrix-associated, actin-dependent regulator of chromatin, subfamily A-like 1)**, also known as HARP (HepA-related protein) or ALDH1L2 pseudogene, is an ATP-dependent annealing helicase that plays a critical role in DNA replication stress responses and genome stability maintenance. This protein binds to replication forks and catalyzes the reannealing of complementary single DNA strands, thereby preventing fork collapse and facilitating replication restart under stress conditions such as replication fork stalling, DNA damage, or secondary structure formation. Through its interactions with RPA and other replication fork remodeling factors, **SMARCAL1** ensures proper fork progression and protects genome integrity, with mutations in the SMARCAL1 gene leading to Schimke immuno-osseous dysplasia, a multisystem disorder characterized by growth retardation, renal dysfunction, and T-cell immunodeficiency.

Protein Details: Recombinant SMARCAL1 protein was expressed in a baculovirus expression system as the full length protein (accession number NP_054859.2) with an N-terminal FLAG tag. The molecular weight of the protein is 107.2 kDa.

Application Notes: This product was manufactured as described in Protein Details. Where possible, Active Motif has developed functional or activity assays for recombinant proteins. Additional characterization such as enzyme kinetic activity assays, inhibitor screening or other biological activity assays may not have been performed for every product. All available data for this product is shown.

Storage and Guarantee: Recombinant proteins in solution are temperature sensitive and must be stored at -80°C to prevent degradation. Avoid repeated freeze/thaw cycles and keep on ice when not in storage. This product is for research use only and is not for use in diagnostic procedures. This product is guaranteed for 6 months from date of arrival.

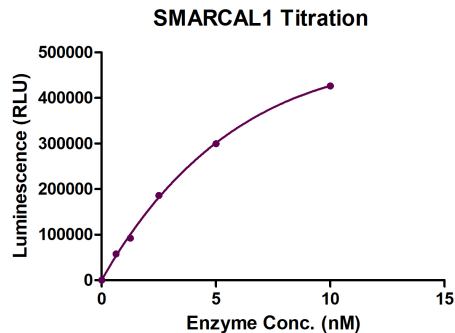


Recombinant SMARCAL1 protein gel

4-20% SDS-PAGE gel

MW:107.2 kDa

Purity: >90%



ADP-Glo assay for SMARCAL1 activity

20 μ M ATP and 10 nM Salmon sperm DNA was incubated with different concentrations of SMARCAL1 protein in a 10 μ l reaction system containing 20 mM HEPES (pH 7.5), 10mM MgCl₂, 50 mM NaCl, 0.1% Tween-20, 1 mM DTT at RT for 1 hour, then add 10 μ l ADP-Glo Reagent incubates at RT for 1 hour. Then add 20 μ l Kinase Detection Reagent incubates at RT for 1 hour. Finally, Luminescence measurement is collected by BMG.