Recombinant SMARCA4 (658-1328) protein

Catalog No: 81440, 81540
Expressed In: Baculovirus

Quantity: 20, 1000 µg
Concentration: 0.2 µg/µl
Source: Human

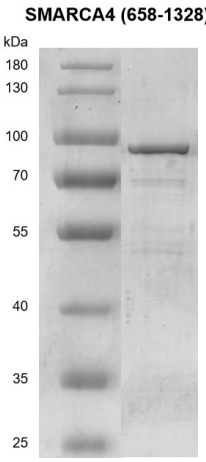
Buffer Contents: Recombinant SMARCA4 (658-1328) protein is supplied in 25 mM HEPES-NaOH pH 7.5, 300 mM NaCl, 10% glycerol, 0.04% Triton X-100, 0.5 mM TCEP.

Background: SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily a, member 4 (SMARCA4), also known as **BRG1**, is a member of the SWI/SNF family of proteins and is similar to the Brahma protein of *Drosophila*. Members of this family have helicase and ATPase activities and are thought to regulate transcription of certain genes by altering the chromatin structure around those genes. SMARCA4 contains bromodomains for interaction with other proteins. The bromodomain functions as a 'reader' of epigenetic histone marks and regulates chromatin structure and gene expression by linking associated proteins to the recognized acetylated nucleosomal targets. SMARCA4 is part of the large ATP-dependent chromatin remodeling complex SNF/SWI which is required for transcriptional activation of genes normally repressed by chromatin. In addition, this protein can bind BRCA1, as well as regulate the expression of the tumorigenic protein CD44. Gene mutation causes Rhabdoid Tumor Predisposition Syndrome Type 2. SMARCA4 functions as a transcriptional coactivator cooperating with nuclear hormone receptors to potentiate transcriptional activation. It also interacts with glucocorticoid receptor (GR), TOPBP1 and progesterone receptor (PR) and is a component of the BAF53 complex which acetylates histone H4 and H2A within nucleosomes. Somatic mutations of SMARCA4 have been detected in some cancer cell lines and loss of SMARCA4 is associated with decreased survival in cancer patients. It shows binding specificity for acetylated H2BK5, H3K14 and H3K9.

Protein Details: Recombinant SMARCA4 protein that includes amino acids 658-1328 of human SMARCA4 protein (accession number NP_001122317.1) was expressed in a baculovirus expression system, and contains an N-terminal FLAG tag. The molecular weight of the protein is 78.8 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 a given product is shown on the lot-specific Technical Data Sheet.

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.

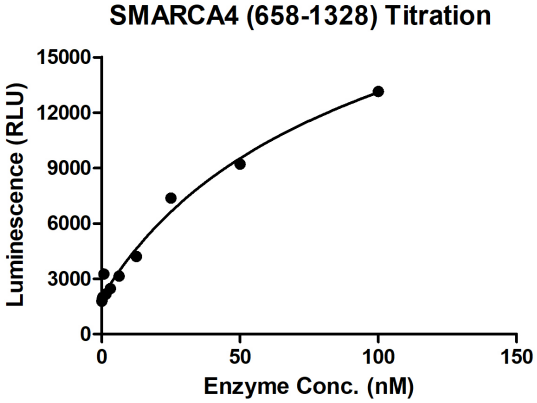


Recombinant SMARCA4 (658-1328) protein

10% SDS-PAGE Coomassie staining

MW: 78.8 kDa

Purity: ≥ 85%



ADP-Glo assay for SMARCA4 (658-1328) activity (Data from ICE Bioscience Inc.)

100 µM ATP and 10 nM DNA was incubated with different concentrations of SMARCA4 (658-1328) protein in a 10 µl reaction system containing 20 mM HEPES pH 7.5 ,10 mM MgCl2, 50 mM NaCl, 0.1%Tween-20, 1 mM DTT for 1 hour, 10 µl ADP-Glo Reagent was added to the products and incubated for 1 hour. Then 20 µl Kinase Detection Reagent incubated for 1 hour. All the operations and reactions were performed at RT. Luminescence measurement is collected by BMG.