

SMARCA4 Chromatin Remodeling Enzyme

Catalog No	15-1014	Species	Human
Lot No	21145007-02	Source	SF9 cells
Pack Size	100 Reactions	Epitope Tag	6xHis-FLAG
Concentration	0.697 μ M	MW	186.6 kDa

DESCRIPTION

Full length recombinant human SMARCA4 Remodeling Enzyme. SMARCA4 is a core ATPase subunit of the ATP-dependent chromatin remodeling complex SWI/SNF that mobilizes nucleosomes and plays key roles in gene transcription regulation, development, genome replication and repair [1,2]. Aberrant activities of SWI/SNF subunits is linked with more than 20% of human cancers and multiple developmental disorders, making SMARCA4 an emerging candidate therapeutic target [3,4]. SMARCA4 can be used in conjunction with EpiDyne®-FRET Remodeling Assay Substrate (EpiCypher 16-4201) in HTS-compatible drug discovery studies.

TECHNICAL INFORMATION

Storage	Stable for six months at -80°C from date of receipt. For best results, aliquot and avoid freeze/thaws.
Formulation	SMARCA4 at 0.13 mg/mL in 14.4 μ L of 25 mM HEPES pH 7.6, 0.1 mM EDTA, 10% glycerol, 350 mM NaCl, 1 mM DTT, 0.4 mM PMSF, 1 mM benzamidine, 0.02% NP-40, 0.4 mg/mL insulin.

APPLICATION NOTES

This product is sufficient to perform 100 remodeling reactions using EpiDyne®-FRET substrate (EpiCypher 16-4201). A single reaction is defined as 10 μ L containing 10 nM SMARCA4 (concentration is lot-specific), 20 nM EpiDyne®-FRET, & 1 mM rATP with remodeling to completion in <30 minutes. Remodeling readout can be observed in the change of Cy3/Cy5 ratio over time in a black 384-well assay plate on a compatible fluorescent plate reader. 5x SMARCA Remodeling Assay Buffer is included (EpiCypher 21-0014; 100 mM Tris HCl pH 7.5, 250 mM KCl, 15 mM MgCl_2 , 0.05% (w/v) BSA, 0.05% (v/v) Tween 20). See the EpiDyne®-FRET Technical Note (epicypher.com/resources/technical-notes) or contact techsupport@epicypher.com for more information.

GENE & PROTEIN INFORMATION

UniProt ID	P51532-1
Gene Name	SMARCA4
Protein Name	Transcription activator BRG1
Amino Acids	1-1647 with a C-terminal 6His-FLAG
Alternate Names	BAF190A, BRG1, SNF2B, SNF2L4

REFERENCES

- [1] Clapier & Carins *Annu. Rev. Biochem.* (2009) PMID: 19355820
- [2] Sundaramoorthy & Owen-Hughes *F1000Research* (2020) PMID: 32864100
- [3] Kadoch & Crabtree *Sci. Adv.* (2015) PMID: 26601204
- [4] Cenik & Shilatifard *Nat. Rev. Genet.* (2021) PMID: 32958894

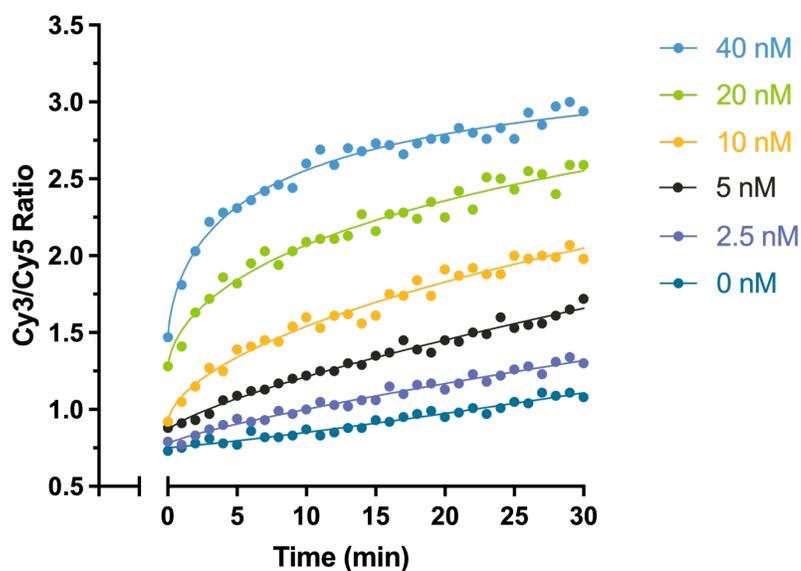


Figure 1: ATP-dependent chromatin remodeling assay. EpiDyne®-FRET Chromatin Remodeling Substrate (EpiCypher 16-4201; 20 nM) incubated with SMARCA4 Remodeling Enzyme (concentrations indicated) in 1x SMARCA Remodeling Assay Buffer. Curves denote FRET efficiency/chromatin remodeling.

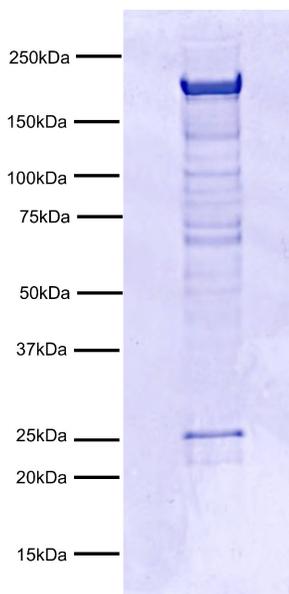


Figure 2: Protein gel data. SMARCA4 Remodeling Enzyme (1 µg) was run on an SDS-PAGE gel and stained with Coomassie blue. The migration and molecular weight of the protein standards are indicated.