SMARCA5 Chromatin Remodeling Enzyme

Catalog No	15-1024	**Species**	Human
Lot No	22116001-01	**Source**	SF9 cells
Pack Size	100 Reactions	**Epitope Tag**	FLAG-6His
Concentration	0.308 µM	**MW**	123.7 kDa

DESCRIPTION

Full length recombinant human SMARCA5 Remodeling Enzyme. SMARCA5 is a core ATPase subunit of the ATP-dependent chromatin remodeling ISWI complexes that regulate nucleosome spacing to control DNA accessibility [1,2]. SMARCA5 containing complexes exhibit substrate preference and distinct remodeling directionalities with different regulatory subunits [3]. Mis-regulation of SMARCA5 is linked with multiple human cancers including leukemia, breast, lung, and gastric cancers [4]. SMARCA5 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	SMARCA5 at 0.038 mg/mL in 32.5 µL of 25 mM HEPES pH 7.6, 0.1 mM EDTA, 10% glycerol, 200 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 µL containing 10 nM SMARCA5 (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	O60264-1
Gene Name	SMARCA5
Protein Name	SWI/SNF-related matrix-associated actin-dependent regulator of chromatin subfamily A member 5
Amino Acids	2-1052 with an N-terminal FLAG-6His
Alternate Names	SNF2H, WCRF135, Sucrose nonfermenting protein 2 homolog

REFERENCES

[1] Clapier & Carins *Annu. Rev. Biochem.* (2009) PMID: 19355820
[2] Sundaramoorthy & Owen-Hughes *F1000Research* (2020) PMID: 32864100
[3] Oppikofer et al. *EMBO Rep.* (2017) PMID: 28801535
[4] Thakur et al. *Cells* (2022) PMID: 35269430

VALIDATION DATA

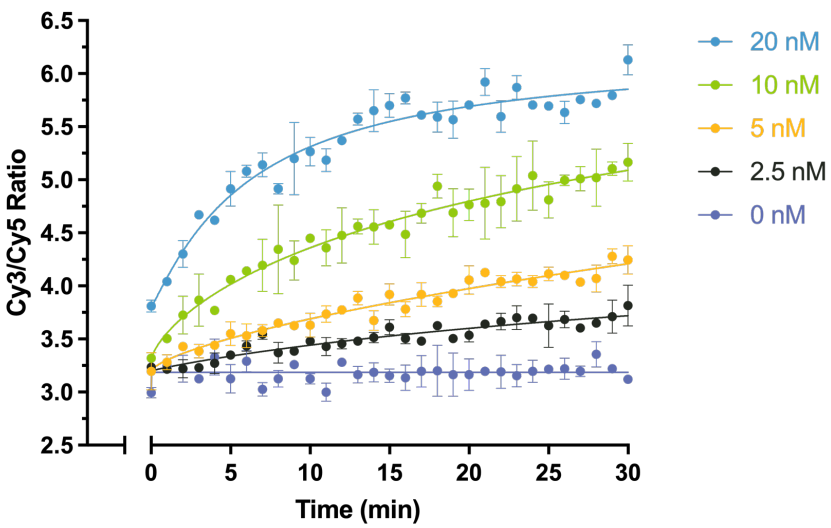

Figure 1: ATP-dependent chromatin remodeling assay. EpiDyne®-FRET Chromatin Remodeling Substrate (EpiCypher 16-4201; 20 nM) incubated with SMARCA5 Remodeling Enzyme (concentrations indicated) in 1x SMARCA Remodeling Assay Buffer. Curves denote FRET efficiency/chromatin remodeling.

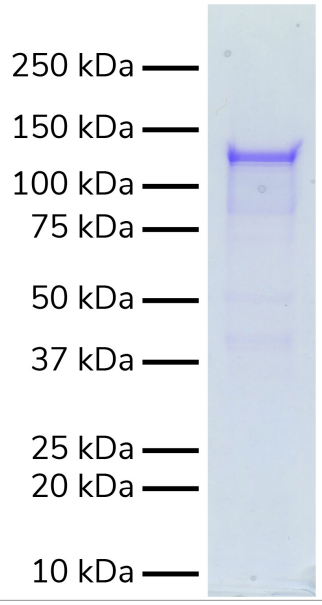

Figure 2: Protein gel data. SMARCA5 Remodeling Enzyme (1 µg) was run on an SDS-PAGE gel and stained with Coomassie blue. The migration and molecular weight of the protein standards are indicated.