

PRODUCT INFORMATION



SETD3 (human, recombinant)

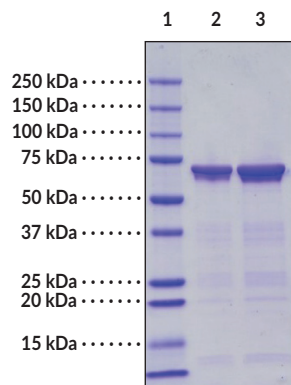
Item No. 27355

Overview and Properties

Synonyms:	Actin Histidine Methyltransferase, Actin Histidine N-Methyltransferase, C14orf154, Chromosome 14 Open Reading Frame 154, HSETD3, SET Doman-Containing 3, SET Domain-containing Protein 3
Source:	Active recombinant N-terminal His-tagged SETD3 expressed in <i>E. coli</i>
Amino Acids:	2-594 (full length)
Uniprot No.:	Q86TU7
Molecular Weight:	69.2 kDa
Storage:	-80°C (as supplied)
Stability:	≥1 year
Purity:	batch specific (≥80% estimated by SDS-PAGE)
Supplied in:	50 mM HEPES, pH 8.0, with 150 mM sodium chloride and 10% glycerol
Protein Concentration:	batch specific mg/ml
Activity:	batch specific U/ml
Specific Activity:	batch specific U/mg
Unit Definition:	nmol/min/mg. One unit is defined as the amount of enzyme required to transfer one methyl group to actin peptide per minute using 8 μM actin peptide (LKYPIDHGIVTNWDDMEKIW-amide) at 37°C in Cayman's Methyltransferase Colorimetric Assay Kit (Item No. 700140).

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images



Lane 1: MW Markers
Lane 2: SETD3 (2 μg)
Lane 3: SETD3 (4 μg)

Figure 1: SDS-PAGE Analysis of SETD3

Representative gel image shown; actual purity may vary between each batch.

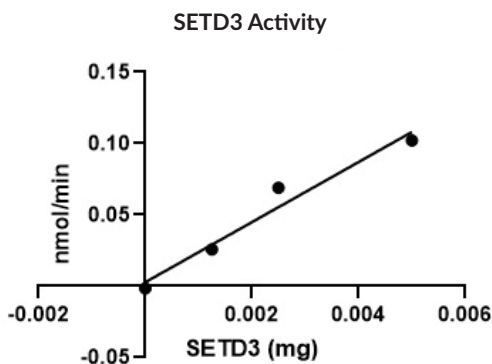


Figure 2: Activity Assay. SETD3 activity was determined using Cayman's Methyltransferase Colorimetric Assay Kit (Item No. 700140).

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

SET domain protein 3 (SETD3) is an actin histidine methyltransferase encoded by the *SETD3* gene in humans and a member of the SET family of methyltransferases.¹ It contains an N-terminal SET domain, responsible for transferring a methyl group from S-adenosyl methionine to histidine 73 on β -actin, that forms a cleft with a C-terminal domain that is similar to large subunit methyltransferase (LSMT) domains.² SETD3 is ubiquitously expressed and localizes to the cytoplasm. *SETD3* expression in liver cancer cell lines increases proliferation while shRNA knockdown decreases it.¹ Expression of *SETD3* increases tumor size in a HepG2 mouse xenograft model, and a xenograft model using cancer cells with an endogenous knockdown of *SETD3* reduces tumor size. SETD3 protein levels are increased in isolated human cancer tissues compared with adjacent tissue. *Setd3* knockout in mice leads to skeletal muscle myopathy, abnormal cardiac electrocardiogram, and, in female mice, delayed parturition.² Cayman's SETD3 (human, recombinant) protein can be used for Western blot, ELISA, and enzymatic assay applications.

References

1. Cheng, X., Hao, Y., Shu, W., *et al.* Cell cycle-dependent degradation of the methyltransferase SETD3 attenuates cell proliferation and liver tumorigenesis. *J. Biol. Chem.* **292**(22), 9022-9033 (2017).
2. Wilkinson, A.W., Diep, J., Dai, S., *et al.* SETD3 is an actin histidine methyltransferase that prevents primary dystocia. *Nature* **585**(7739), 372-376 (2019).

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