PRODUCT INFORMATION

ASH1L bromodomain (human, recombinant)

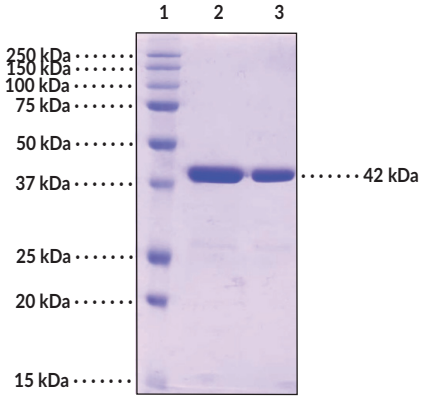
Item No. 14489

Overview and Properties

Synonyms:	Absent Small and Homeotic Disks Protein 1 homolog, ASH1-like protein, Histone-lysine N-Methyltransferase ASH1L, Lysine N-Methyltransferase 2H
Source:	Recombinant N-terminal GST-tagged protein expressed in *E. coli*
Amino Acids:	2,438-2,561 (partial protein)
Uniprot No.:	Q9NR48
Molecular Weight:	42 kDa
Storage:	-80°C (as supplied)
Stability:	≥1 year
Purity:	***batch specific*** (≥90% estimated by SDS-PAGE)
Supplied in:	50 mM Tris, pH 8.0, with 150 mM sodium chloride and 20% glycerol
Protein Concentration:	***batch specific*** mg/ml

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

Image



Lane 1: MW Markers
Lane 2: ASH1L bromodomain (5 µg)
Lane 3: ASH1L bromodomain (2.5 µg)

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

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM

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Description

The acetylation of histone lysine residues plays a crucial role in the epigenetic regulation of gene transcription. Acetylated lysine residues are recognized by a small protein domain known as a bromodomain.[1] These domains function in linking protein complexes to acetylated nucleosomes, thereby controlling chromatin structure and gene expression. Thus, bromodomains serve as "readers" of histone acetylation marks regulating the transcription of target promoters.[2] ASH1L is the mammalian homolog of the *Drosophila* protein Absent, small, or homeotic disc 1 (Ash1), a trithorax group histone methyltransferase involved in gene activation.[3] ASH1L contains an associated with SET domain, a SET domain, a post-SET domain, a bromodomain, a bromoadjacent homology domain, and a plant homeodomain finger.[3,4] ASH1L regulates mammalian Hox gene expression, which plays an important role in haematopoietic development in mammals. ASH1L has been reported to methylate histone H3 at lysine 4 (H3K4) and H3K36.[3,5,6] This protein product contains the bromodomain region of ASH1L.

References

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2. Muller, S., Filippakopoulos, P., and Knapp, S. Bromodomains as therapeutic targets. *Expert Rev. Mol. Med.* **13**, 1-21 (2011).
3. An, S., Yeo, K.J., Jeon, Y.H., *et al.* Crystal structure of the human histone methyltransferase ASH1L catalytic domain and its implications for the regulatory mechanism. *J. Biol. Chem* **286(10)**, 8369-8374 (2011).
4. Nakamura, T., Blechman, J., Tada, S., *et al.* huASH1 protein, a putative transcription factor encoded by a human homologue of the *Drosophila* ash1 gene, localizes to both nuclei and cell-cell tight junctions. *PNAS* **97(13)**, 7284-7289 (2000).
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6. Gregory, G.D., Vakoc, C.R., Rozovskaia, T., *et al.* Mammalian ASH1L is a histone methyltransferase that occupies the transcribed region of active genes. *Molecular and Cellular Biology* **27(24)**, 8466-8479 (2007).

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