

PRODUCT INFORMATION



BRD4 bromodomain 1 (human, recombinant; His-tagged)

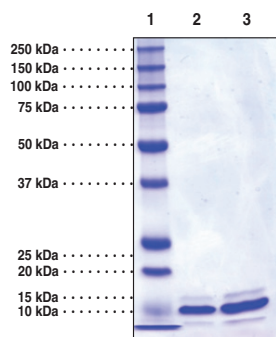
Item No. 11720

Overview and Properties

Synonyms:	Bromodomain containing protein 4, HUNK1, MCAP, Mitotic Chromosome-associated Protein
Source:	Recombinant N-terminal hexahistidine-tagged protein expressed in <i>E. coli</i>
Amino acids:	49-170 (partial protein)
Uniprot No.:	O60885
Molecular Weight:	16.6 kDa
Storage:	-80°C (as supplied); avoid freeze/thaw cycles by aliquoting protein
Stability:	≥2 years
Purity:	≥90% estimated by SDS-PAGE
Supplied in:	50 mM Tris, pH 8.0, with 500 mM NaCl, 5% glycerol, and 1 mM DTT
Protein Concentration:	<i>batch specific</i> mg/ml
Activity:	<i>batch specific</i> U/ml
Specific Activity:	<i>batch specific</i> U/mg

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

Image



Lane 1: MW Markers
Lane 2: BRD4 bromodomain 1 (2 µg)
Lane 3: BRD4 bromodomain 1 (5 µg)

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

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.

Copyright Cayman Chemical Company, 12/16/2021

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

PRODUCT INFORMATION



Description

Bromodomain-containing protein 4 (BRD4) is a member of the bromodomain and extra-terminal domain (BET) family.¹ It is a ubiquitously expressed nuclear protein with roles in a variety of cellular processes, including regulation of gene transcription, cell cycle progression, and viral genome segregation.^{1,2} BRD4 is comprised of two N-terminal bromodomains (BD1 and BD2) that can bind to acetylated lysine residues in histones, serving to couple histone acetylation marks to the transcriptional regulation of target promoters, an extra-terminal (ET) domain that facilitates protein-protein interactions, and a C-terminal motif, and can be expressed as either a long or short isoform generated via alternative splicing.¹⁻³ In addition to binding acetylated lysine residues on histones, BRD4 can bind to a variety of non-histone proteins and protein complexes, including positive transcription elongation factor b (P-TEFb) and the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) envelope (E) protein, a transmembrane protein involved in CoV virion assembly and pathogenesis of the related virus, SARS-CoV.^{1,4-6} In mice, knock-down of *Brd4* is embryonic lethal.² Chromosomal translocations leading to the fusion of *BRD4* with the nuclear protein in testis (*NUT*) gene and resulting in expression of BRD4-NUT fusion proteins are associated with NUT midline carcinoma (NMC).^{1,3} Inhibition of BRD4-NUT binding to chromatin by the BET bromodomain inhibitor (+)-JQ1 (Item No. 11187) induces tumor regression and prolongs survival in NMC mouse xenograft models.⁷ Cayman's BRD4 bromodomain 1 (human, recombinant; His-tagged) protein can be used for ELISA, Western blot (WB), and binding assay applications.

References

1. Taniguchi, Y. The bromodomain and extra-terminal domain (BET) family: Functional anatomy of BET paralogous proteins. *Int. J. Mol. Sci.* **17(11)**, E1849 (2016).
2. Wu, S.Y. and Chiang, C.M. The double bromodomain-containing chromatin adaptor Brd4 and transcriptional regulation. *J. Biol. Chem.* **282(18)**, 13141-13145 (2007).
3. Wang, C.Y. and Filippakopoulos, P. Beating the odds: BETs in disease. *Trends Biochem. Sci.* **40(8)**, 2015.
4. Gordon, D.E., Jang, G.M., Bouhaddou, M. *et al.* A SARS-CoV-2-human protein-protein interaction map reveals drug targets and potential drug-repurposing. *BioRxiv* (2020).
5. Kandeel, M., Ibrahim, A., Fayez, M., *et al.* From SARS and MERS CoVs to SARS-CoV-2: Moving toward more biased codon usage in viral structural and nonstructural genes. *J. Med. Virol.* (2020).
6. Schoeman, D. and Fielding, B.C. Coronavirus envelope protein: Current knowledge. *Viol. J.* **16(1)**, 69 (2019).
7. Goldstein, D. P. and Kosasa, T. S. The subunit radioimmunoassay for human chorionic gonadotropin - clinical applications. *Progress in Gynecology* 145-184 (1975).

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