

PRODUCT INFORMATION



BRD4 bromodomains 1 and 2 (human, recombinant; aa 49-460)

Item No. 11052

Overview and Properties

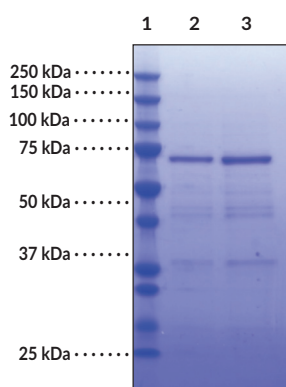
Synonyms: BRD4, Bromodomain containing protein 4, HUNK1, MCAP
Source: Recombinant human GST-tagged protein expressed in *E. coli*
Amino Acids: 49-460
Molecular Weight: 73.4 kDa
Storage: -80°C (as supplied)
Stability: ≥2 years
Purity: *batch specific* (≥65% estimated by SDS-PAGE)
Supplied in: 50 mM Tris, pH 7.5, with 500 mM sodium chloride, 5% glycerol, and 5 mM β-mercaptoethanol

Protein

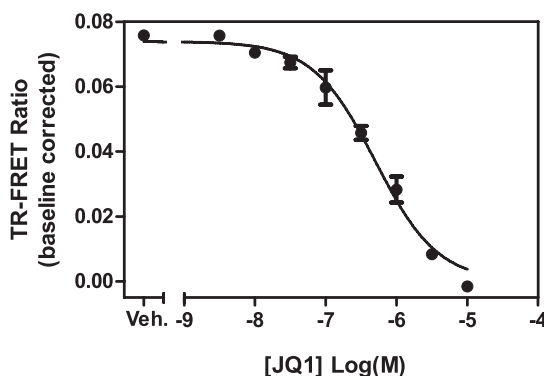
Concentration: *batch specific* mg/ml

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

Images



Lane 1: MW Markers
Lane 2: BRD4 Domain 1 and 2 (2 μg)
Lane 3: BRD4 Domain 1 and 2 (4 μg)



Typical inhibition curves for the displacement of the acetylated peptide from BRD4 bromodomains 1 and 2 by the JQ1 Positive Control. "Veh." represents compound vehicle control.

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

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 bromodomains 1 and 2 (human, recombinant; aa 49-460) protein can be used for ELISA, Western blot (WB), and binding assay applications.

References

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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).
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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).
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