

BRD4-2 (His)

(Bromodomain containing protein 4, bromodomain 2)

CATALOG NO.: RD-11-141

LOT NO.:

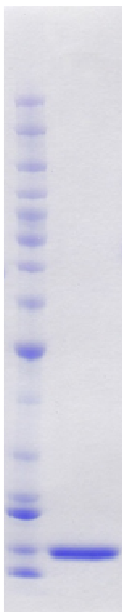
DESCRIPTION: Human recombinant BRD4, bromodomain-2 (residues 349-460; Genbank Accession # NM_058243; MW = 15.8 kDa) expressed in *E. coli* with an N-terminal His-tag. BRD4, like other human members of the BET family of chromatin-binding proteins (BRD2, BRD3, BRDT), comprises two bromodomains (see reviews^{1,2}), protein modules that bind ϵ -N-acetyllysine residues^{3,4}. The ubiquitously expressed BRD4 functions as a transcriptional regulator² with roles in cell cycle progression^{5,6} and has recently been shown to be an atypical kinase that can phosphorylate RNA Pol II⁷. Chromosomal translocations that produce BRD4-NUT fusion proteins are implicated in causation of a rare and aggressive cancer, NUT midline carcinoma⁸. Selective inhibitors of BRD4/BET family bromodomains⁹⁻¹¹ are showing promise as possible therapeutic agents for cancer^{9,12-14} and inflammation¹⁰.

PURITY: >95% by SDS-PAGE

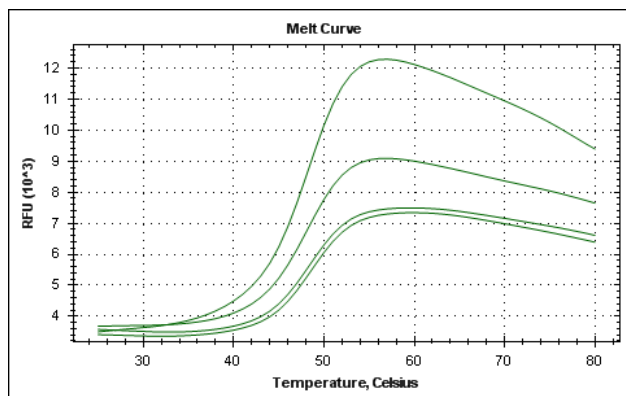
SUPPLIED AS: _ μ g/ μ L in 20 mM Tris, pH 7.5, 150 mM NaCl, 1.0 mM TCEP, 10% glycerol (v/v) as determined by OD₂₈₀

STORAGE: -70°C. Thaw quickly and store on ice before use. The remaining, unused, undiluted protein should be snap frozen, for example in a dry/ice ethanol bath or liquid nitrogen. Minimize freeze/thaws if possible, but very low volume aliquots (<5 μ L) or storage of diluted enzyme is not recommended.

REFERENCES: 1) B. Florence & D.V. Faller *Front. Biosci.* 2001 **6** D1008; 2) S.-Y. Wu & C.-M. Chiang *J. Biol. Chem.* 2007 **282** 13141; 3) D.J. Owen *et al. EMBO J.* 2000 **19** 6141; 4) L. Zeng & M.-M. Zhou *FEBS Lett.* 2002 **513** 124; 5) A. Dey *et al. Mol. Cell. Biol.* 2000 **20** 6537; 6) T. Maruyama *et al. Mol. Cell. Biol.* 2002 **22** 6509; 7) B.N. Devaiah *et al. Proc. Natl. Acad. Sci. USA* 2012 **109** 6927; 8) C.A. French *J. Clin. Pathol.* 2010 **63** 492; 9) P. Filippakopoulos *et al. Nature* 2010 **468** 1067; 10) E. Nicodeme *et al. Nature* 2010 **468** 1119; 11) D.S. Hewings *et al. J. Med. Chem.* 2012 **55** 9393; 12) J.E. Delmore *et al. Cell* 2011 **146** 904; 13) J. Zuber *et al. Nature* 2011 **478** 524; 14) W.W. Lockwood *et al. Proc. Natl. Acad. Sci. USA* 2012 **109** 19408



Coomassie blue stained SDS-PAGE (4-12% acrylamide) of 2 μ g of RBC BRD4-2 (His). MW markers (left) are, from top, 220, 160, 120, 100, 90, 80, 70, 60, **50**, 40, 30, 25, **20**, 15, 10 kDa.



Differential Scanning Fluorimetry of RBC BRD4-2 (His) in Presence or Absence of (+)-JQ1. Thermal denaturation of BRD4-2 (His) is detected (CFX384TM Touch thermal cycler, 'FRET' channel; Bio-Rad) by increased binding and fluorescence of the dye SYPRO[®] Orange (Life Technologies). Addition of the BET bromodomain inhibitor/ligand (+)-JQ1 (10 μ M) stabilizes the protein folding and shifts the T_m (inflection point) from 48°C to 49°C. Duplicate sets of runs, at two protein concentrations, with and without JQ1, are displayed (4 curves)

This product is not intended for therapeutic or diagnostic use in animals or in humans.

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