PRODUCT DATASHEET

BRD4-Tndm (GST) (Bromodomain containing protein 4 (HUNK1), Tandem Brd's 1 & 2)

CATALOG NO.: RD-11-168 **LOT NO.:**

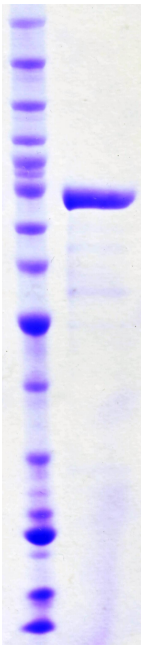
DESCRIPTION: Human recombinant BRD4, tandem construct comprising bromodomains 1 and 2 (residues 44-460; Genbank Accession # NM_058243; MW = 74.1 kDa), expressed as an N-terminal GST fusion protein in *E. coli*. BRD4, like other human members of the BET family of chromatin-binding proteins (BRD2, BRD3, 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 regulator[2] with roles in cell cycle progression[5,6] and has recently been shown to be an atypical kinase that can phosphorylate RNA Pol II[7]. Chromosomal translocations that produce BRD4-NUT fusion proteins are implicated in causation of a rare and aggressive cancer, NUT midline carcinoma[8]. Selective inhibitors of BRD4/BET family bromodomains[9-11] are showing promise as possible therapeutic agents for cancer[9,12-14] and inflammation[10].

PURITY: >85% by SDS-PAGE

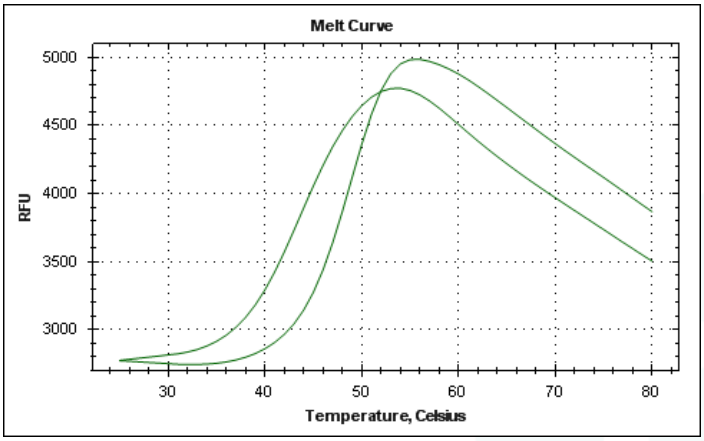
SUPPLIED AS: _ µg/µL in 50 mM Tris/HCl, pH 7.5, 500 mM NaCl, 1.0 mM TCEP, 10% glycerol (v/v) as determined by OD_{280}

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 µl) 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 4 µg of RBC BRD4-Tndm (GST). MW markers (left lane) 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-Tndm (GST) in Presence or Absence of (+)-JQ1. Thermal denaturation of BRD4-Tndm (GST) is detected (CFX384™ 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 µM) stabilizes the protein folding and shifts the T_m (inflection point) from 44°C to 49°C.

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