REACTION BIOLOGY

PRODUCT DATASHEET

BRDT-Tndm (His) (Bromodomain testis-specific protein (CT9, BRD6), Brd's 1 & 2)

CATALOG NO.: RD-11-170 **LOT NO.:**

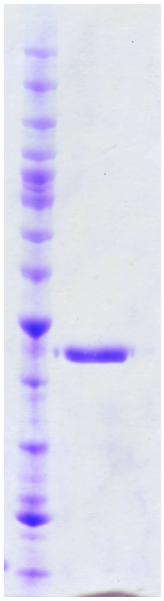
DESCRIPTION: Human recombinant BRDT, tandem construct comprising bromodomains 1 and 2 (residues 21-383; Genbank Accession # NM_001726; MW = 44.0 kDa), expressed in *E. coli* with an N-terminal His-tag. BRDT, like other human members of the BET family of chromatin-binding proteins (BRD2, BRD3, BRD4), comprises two bromodomains (see reviews[1,2]), protein modules that bind ε-*N*-acetyllysine residues[3,4]. Mouse BRDT-1 can bind simultaneously to two acetyllysine residues and, among the multiply acetylated histone tails tested, had the highest affinity for a histone H4 peptide acetylated at lysines 5 and 8 (H4K5AcK8Ac)[5]. Expression of BRDT is testis-specific[6] and deletion of the mouse BRDT-1 causes abnormal spermatid development and sterility[7]. BRDT's functions in spermiogenesis include roles in broad, programmatic regulation of gene expression[8,9], mRNA splicing[8], chromatin remodeling[6,9,10], meiosis[9], formation of the chromocenter[11] and post-meiotic genome repackaging[9]. A three-month treatment of male mice with the BET family bromodomain inhibitor, JQ1, reversibly eliminated fertility, highlighting the potential of BRDT-specific inhibition as an approach for pharmacologic male contraception[12].

PURITY: >95% by SDS-PAGE

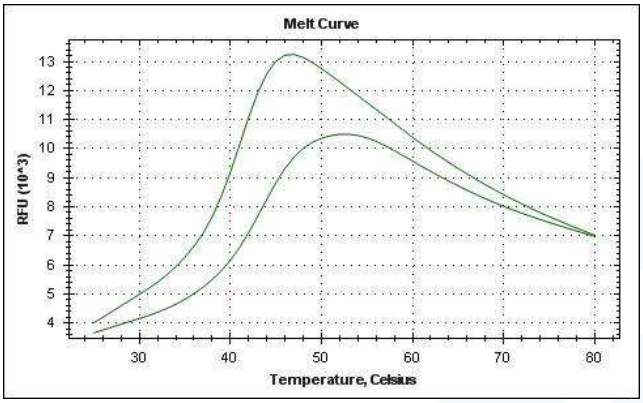
SUPPLIED AS: _ µg/µL in 50 mM Tris/HCl, pH 7.5, 150 mM NaCl, 1.0 mM TCEP, 10% glycerol (v/v) as determined by OD_{280}.

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) J. Morinière *et al. Nature* 2009 **461** 664; 6) C. Pivot-Pajot *et al. Mol. Cell. Biol.* 2003 **23** 5354; 7) E. Shang *et al. Development* 2007 **134** 3507; 8) B.D. Berkovits *et al. Nucleic Acids Res.* 2012 **40** 7162; 9) J. Gaucher *et al. EMBO J.* 2012 31 3809; 10) S. Dhar *et al. J. Biol. Chem.* 2012 287 6387; 11) B.D. Berkovits & D.J. Wolgemuth *Dev. Biol.* 2011 **360** 358; 12) M.M. Matzuk *et al. Cell* 2012 **150** 673



Coomassie blue stained SDS-PAGE (4-12% acrylamide) of 2 µg of RBC BRDT-Tndm (His). 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 BRDT-Tndm (His) in Presence or Absence of (+)-JQ1. Thermal denaturation of BRDT-Tndm (His) 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 41°C to 44°C.

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