REACTION BIOLOGY

PRODUCT DATASHEET

BRDT-1 (GST) (Bromodomain testis-specific protein (CT9, BRD6), bromodomain 1)

CATALOG NO.: RD-11-169 **LOT NO.:**

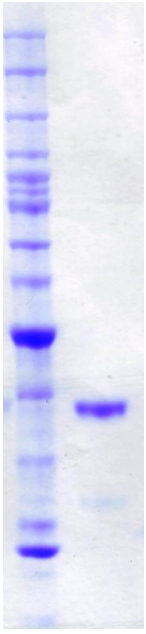
DESCRIPTION: Human recombinant BRDT, bromodomain-1 (residues 21-137; Genbank Accession # NM_001242806; MW = 41.0 kDa) expressed as an N-terminal GST fusion protein in *E. coli*. BRDT, like other human members of the BET family of chromatin-binding proteins (BRD2, BRD3, BRD4), comprises two bromodomains (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: >90% by SDS-PAGE

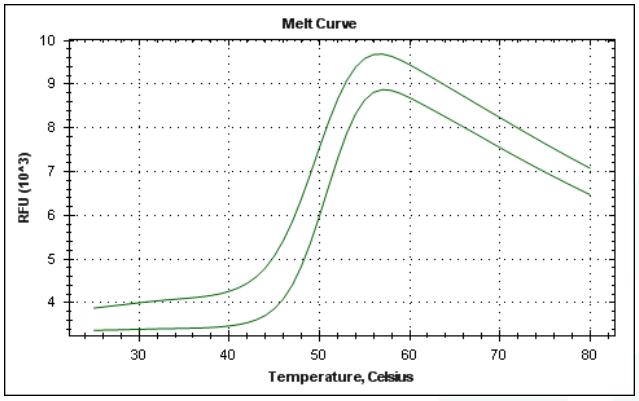
SUPPLIED AS: _ µg/µL in 50 mM Tris, pH 7.5, 150 mM NaCl, 1.0 mM TCEP, 10% glycerol (v/v) as determined by OD_{280}

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 1 µg of RBC BRDT-1 (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 BRDT-1 (GST) in Presence or Absence of (+)-JQ1. Thermal denaturation of BRDT-1 (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 50°C to 51°C.

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