

BRDT-2 (GST)

(Bromodomain testis-specific protein, bromodomain 2)

CATALOG NO.: RD-11-196

LOT NO.:

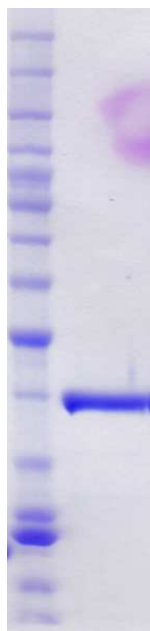
DESCRIPTION: Human recombinant BRDT, bromodomain-2 (residues 250-383; Genbank Accession # NM_001242806; MW = 42.9 kDa) expressed in *E. coli* with an N-terminal GST-tag. BRDT, like other human members of the BET family of chromatin-binding proteins (BRD2, BRD3, BRD4), comprises two bromodomains (see reviews^{1,2}), protein modules that bind ϵ -N-acetyllysine residues^{3,4}. Expression of BRDT is testis-specific⁵ and deletion of the mouse BRDT-1 (bromodomain 1) causes abnormal spermatid development and sterility⁶. BRDT's functions in spermiogenesis include roles in broad, programmatic regulation of gene expression^{7,8}, mRNA splicing⁷, chromatin remodeling^{5,8,9}, meiosis⁸, formation of the chromocenter¹⁰ and post-meiotic genome repackaging⁸. 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 contraception¹¹. The structure of the mouse BRDT-2 in complex with a histone H3 K18Ac peptide has been determined¹². The experimental atherosclerosis drug and BET family bromodomain inhibitor RVX-208¹³ is selective for the second bromodomains of this group, including BRDT-2¹⁴.

PURITY: >95% by SDS-PAGE

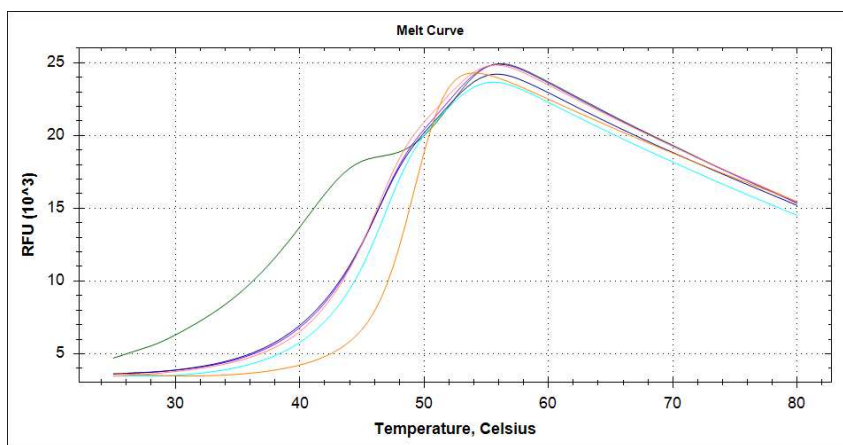
SUPPLIED AS: μ g/ μ L in 50 mM HEPES/NaOH, pH 7.5, 500 mM NaCl, 1 mM TCEP, 10% glycerol (v/v) as determined by OD₂₈₀

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 protein 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) C. Pivot-Pajot *et al. Mol. Cell. Biol.* 2003 **23** 5354; 6) E. Shang *et al. Development* 2007 **134** 3507; 7) B.D. Berkovits *et al. Nucleic Acids Res.* 2012 **40** 7162; 8) J. Gaucher *et al. EMBO J.* 2012 **31** 3809; 9) S. Dhar *et al. J. Biol. Chem.* 2012 **287** 6387; 10) B.D. Berkovits & D.J. Wolgemuth *Dev. Biol.* 2011 **360** 358; 11) M.M. Matzuk *et al. Cell* 2012 **150** 673; 12) J. Morinier *et al. Nature* 2009 **461** 664; 13) K.G. McLure *et al. PLoS One* 2013 **8** e83190; 14) S. Picaud *et al. Proc. Natl. Acad. Sci. USA* 2013 **110** 19754



Coomassie blue-stained SDS-PAGE (4-12% acrylamide) of 4 μ g of RBC BRDT-2 (GST). 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 BRDT2 (GST) in presence or absence of common bromodomain ligands. Thermal denaturation of BRDT-2 (GST) is detected (CFX384 TMTouch thermal cycler, 'FRET' channel; BioRad) by increased binding and fluorescence of the dye SYPRO®Orange (Life Technologies). Addition of 25 μ M JQ1 (orange), PFI1 (pink), Bromosporine (navy), or BET151 (light blue) stabilizes the protein folding and shifts the T_m (inflection point) from 41°C to 49°C, 46.5°C, 46.5°C or 47°C, respectively.

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

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