REACTION BIOLOGY

PRODUCT DATASHEET

TRIM33a-[PHD-BRD] (GST) (TIF1 γ isoform α)

CATALOG NO.: RD-11-238 **LOT NO.:**

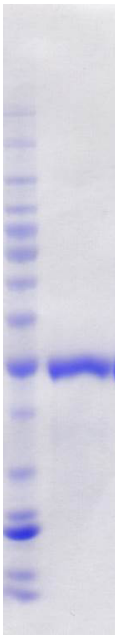
DESCRIPTION: Human recombinant TRIM33a PHD-bromodomain construct (residues 885-1091; Genbank Accession # NM_015906; MW = 50.8 kDa) expressed as an N-terminal GST-fusion protein in *E. coli*. A member of the Tripartite Motif (TRIM) family of proteins[1,2], TRIM33a functions as an E3 ubiquitin protein ligase for SMAD4[3]. The C-terminally located PHD-bromodomain reader cassette displays a high affinity for histone H3 N-terminal tails with unmodified lysine-4, trimethylated lysine-9 (H3K9me3, bound by PHD) and acetylated lysine-18 (H3K18Ac, bound by bromodomain)[4]. The biological roles of TRIM33 include tumor suppression in various tissues[5-7], regulation of ALC1 activity in the PARP-dependent DNA damage response[8], transcriptional regulation in hematopoiesis[9,10] and regulation of TGF-ß signaling in stem cell differentiation[4].

PURITY: >90% by SDS-PAGE

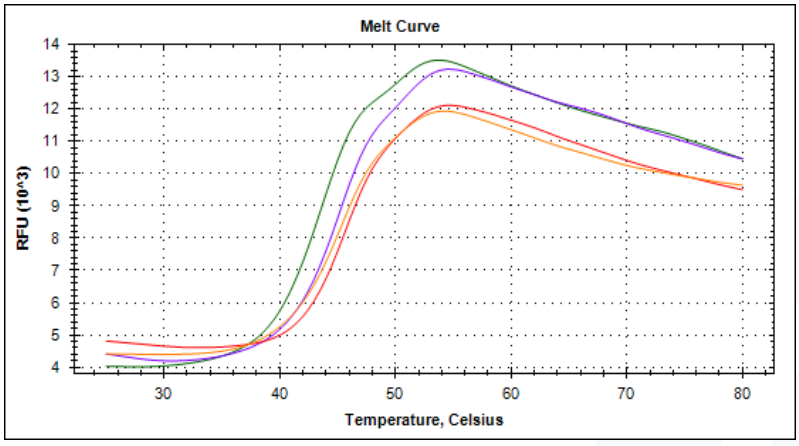
SUPPLIED AS: _ µg/µL in 50 mM Tris HCl, pH 7.5, 500 mM NaCl, 1 mM TCEP, 10% glycerol (v/v) as determined by OD_{280}.

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) L. Venturini *et al. Oncogene* 1999 **18** 1209; 2) A. Reymond *et al. EMBO J.* 2001 **20** 2140; 3) S. Dupont *et al. Cell* 2005 **121** 87; 4) Q. Xi *et al. Cell* 2011 **147** 1511; 5) B. Herquel *et al. Proc. Natl. Acad. Sci. USA* 2011 **108** 8212; 6) D.F. Vincent *et al. Am. J. Pathol.* 2012 **180** 2214; 7) J. Xue *et al. J. Clin. Invest.* 2014 **124** 564; 8) A. Kulkarni *et al. J. Biol. Chem.* 2013 **288** 32357; 9) W. He *et al. Cell* 2006 **125** 929; 10) X. Bai *et al. Cell* 2010 **142** 133



Coomassie blue-stained SDS-PAGE (4-12% acrylamide) of 4 ug of RBC TRIM33a-[PHD-BRD] (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 TRIM33a-[PHD-BRD] (GST) Thermal denaturation of TRIM33a-[PHD-BRD] (GST) is detected (CFX384 TMTouch thermal cycler, 'FRET' channel; Bio- Rad) by increased binding and fluorescence of the dye SYPRO®Orange (Life Technologies). Addition of 25 µM JQ1 (orange), SGC-CBP30 (red) or RVX-208 (purple) stabilizes the protein folding and shifts the Tm (inflection point) from 43.5°C to 45.5°C, 45.5°C and 45°C, respectively.

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

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