

**TRIM33 $\alpha$ -[PHD-BRD] (His)**

(TIF1  $\gamma$  isoform  $\alpha$ )

**CATALOG NO.:** RD-11-243

**LOT NO.:**

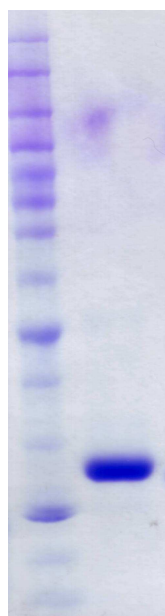
**DESCRIPTION:** Human recombinant TRIM33a PHD-bromodomain construct (residues 885-1091; Genbank Accession # NM\_015906; MW = 26.5 kDa) expressed in *E. coli* with an N-terminal His-tag. A member of the Tripartite Motif (TRIM) family of proteins<sup>1,2</sup>, TRIM33a functions as an E3 ubiquitin protein ligase for SMAD4<sup>3</sup>. 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)<sup>4</sup>. The biological roles of TRIM33 include tumor suppression in various tissues<sup>5-7</sup>, regulation of ALC1 activity in the PARP-dependent DNA damage response<sup>8</sup>, transcriptional regulation in hematopoiesis<sup>9,10</sup> and regulation of TGF- $\beta$  signaling in stem cell differentiation<sup>4</sup>.

**PURITY:** >95% by SDS-PAGE

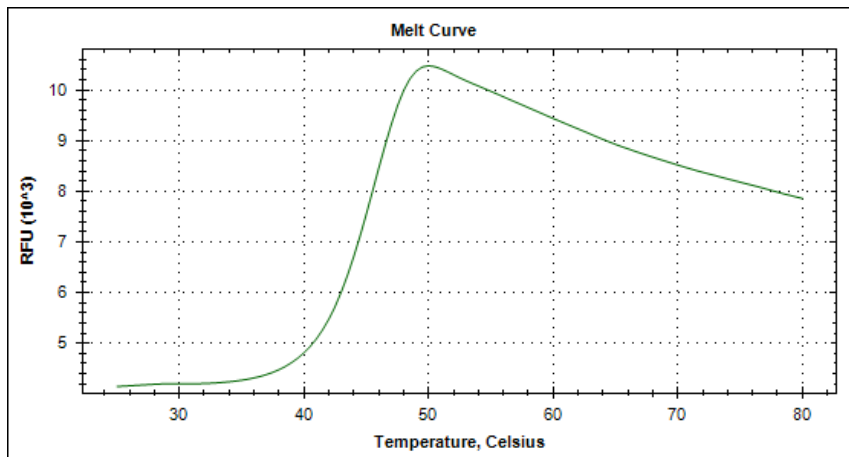
**SUPPLIED AS:**  $\mu$ g/ $\mu$ L in 50 mM Tris HCl, pH 7.5, 500 mM NaCl, 1 mM TCEP, 10% glycerol (v/v) as determined by OD<sub>280</sub>.

**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  $\mu$ L) 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 5  $\mu$ g of RBC TRIM33a (His).** 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] (His)** . Thermal denaturation of TRIM33a-[PHD-BRD] (His) is detected (CFX384TM Touch thermal cycler, 'FRET' channel; Bio- Rad) by increased binding and fluorescence of the dye SYPRO®Orange (Life Technologies). The apo form displays a T<sub>m</sub> of 45.5°C and is not stabilized in the presence of various known bromodomain ligands (JQ1, PFI1, CBP112, Bromosporine, SGC-CBP30, BET151 and RVX-208; all tested at 25  $\mu$ M).

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

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