PRODUCT INFORMATION

CBX3 (human recombinant)

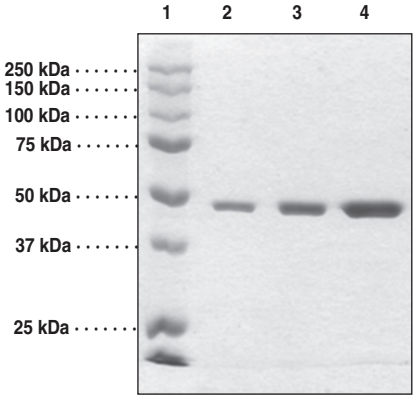
Item No. 15467

Overview and Properties

Synonyms:	Chromobox Protein Homolog 3, Heterochromatin Protein 1 Homolog γ, HP1-γ
Source:	Recombinant N-terminal GST-tagged protein expressed in *E. coli*
Amino Acids:	2-183 (full length)
Uniprot No.:	Q13185
Molecular Weight:	48.4 kDa
Storage:	-80°C (as supplied)
Stability:	≥6 months
Purity:	***batch specific*** (≥95% estimated by SDS-PAGE)
Supplied in:	***batch specific***
Protein Concentration:	***batch specific*** mg/ml
Activity:	***batch specific*** U/ml
Specific Activity:	***batch specific*** U/mg

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Image



Lane 1: MW Markers
Lane 2: CBX3 (2 µg)
Lane 3: CBX3 (4 µg)
Lane 4: CBX3 (6 µg)

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Description

The heterochromatin protein 1 (HP1) family, which consists of isoforms HP1-α (CBX5), HP1-β (CBX1), and HP1-γ (CBX3), are chromatin-associated proteins involved in gene regulation and heterochromatin formation.[1] CBX proteins have an N-terminal chromodomain, a C-terminal chromoshadow domain, and a hinge domain that connects the two.[2] Extensive post-translational modifications have been observed and mapped on the CBX proteins.[3] The chromodomain of CBX3 has been shown to recognize methylated histone H3 lysine 9, methylated histone H1 lysine 26, and G9A methylated at lysine 185.[4] CBX3 associates with the exons of a subset of actively transcribed genes, and loss of CBX3 results in accumulation of unspliced mRNA from that subset of genes.[5-6] Further, CBX3 suppresses Nanog gene transcription in pre-induced pluripotent stem cells and long terminal repeat protein expression in HIV-1 infected cells.[6-7] Knockdown of CBX3 by siRNA in cells latently infected with HIV-1 leads to virus reactivation.[8] CBX3 has been proposed to be a biomarker for tumor stem cells in osteosarcoma.[9]

References

1. Lachner, M., O'Carroll, D., Rea, S., *et al. Nature* **410**, 116-120 (2001).
2. Kwon, S.H. and Workman, J.L. *BioEssays* **33(4)**, 280-289 (2011).
3. LeRoy, G., Weston, J.T., Zee, B.M., *et al. Mol. Cell Proteomics* **8(11)**, 2432-2442 (2009).
4. Ruan, J., Ouyang, H., Amaya, M.F., *et al. PLoS One* **7(4)**, e35376 (2012).
5. Smallwood, A., Hon, G.C., Jin, F., *et al. Genome Res.* **22(8)**, 1426-1436 (2012).
6. Sridharan, R., Gonzales-Cope, M., Chronis, C., *et al. Nat. Cell Biol.* **15(7)**, 872-882 (2013).
7. Mateescu, B., Bourachot, B., Rachez, C., *et al. EMBO J.* **9(3)**, 267-272 (2008).
8. du Chéné, I., Basyuk, E., Lin, Y.L., *et al. EMBO J.* **26(2)**, 424-435 (2007).
9. Saini, V., Hose, C.D., Monks, A., *et al. PLoS One* **7(8)**, e41401 (2014).

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