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NCBP1 Blocking Peptide (C-term)

Synthetic peptide
Catalog # BP19943B

Specification

NCBP1 Blocking Peptide (C-term) - Product Information

Primary Accession	Q09161
Other Accession	Q56A27, Q3UYV9, NP_002477.1

NCBP1 Blocking Peptide (C-term) - Additional Information

Gene ID 4686

Other Names
Nuclear cap-binding protein subunit 1, 80 kDa nuclear cap-binding protein, CBP80, NCBP 80 kDa subunit, NCBP1, CBP80, NCBP

Target/Specificity
The synthetic peptide sequence is selected from aa 662-675 of HUMAN NCBP1

Format
Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions
This product is for research use only. Not for use in diagnostic or therapeutic procedures.

NCBP1 Blocking Peptide (C-term) - Protein Information

Name NCBP1

Synonyms CBP80, NCBP

Function
Component of the cap-binding complex (CBC), which binds cotranscriptionally to the 5'-cap of pre-mRNAs and is involved in various processes such as pre-mRNA splicing, translation regulation, nonsense-mediated mRNA decay, RNA-mediated gene silencing (RNAi) by microRNAs (miRNAs) and mRNA export. The CBC complex is involved in mRNA export from the nucleus via its interaction with ALYREF/THOC4/ALY, leading to the recruitment of the mRNA export machinery to the 5'-end of mRNA and to mRNA export in a 5' to 3' direction through the nuclear pore. The CBC complex is also involved in mediating U snRNA and intronless mRNAs export from the nucleus. The CBC complex is essential for a pioneer round of mRNA translation, before steady state translation when the CBC complex is replaced by cytoplasmic cap-binding protein eIF4E. The pioneer round of mRNA translation mediated by the CBC complex plays a central role in nonsense-mediated mRNA decay (NMD), NMD only taking place in mRNAs bound to the CBC complex, but not on eIF4E-bound

mRNAs. The CBC complex enhances NMD in mRNAs containing at least one exon-junction complex (EJC) via its interaction with UPF1, promoting the interaction between UPF1 and UPF2. The CBC complex is also involved in 'failsafe' NMD, which is independent of the EJC complex, while it does not participate in Staufen-mediated mRNA decay (SMD). During cell proliferation, the CBC complex is also involved in microRNAs (miRNAs) biogenesis via its interaction with SRRT/ARS2 and is required for miRNA-mediated RNA interference. The CBC complex also acts as a negative regulator of PARN, thereby acting as an inhibitor of mRNA deadenylation. In the CBC complex, NCBP1/CBP80 does not bind directly capped RNAs (m7GpppG-capped RNA) but is required to stabilize the movement of the N-terminal loop of NCBP2/CBP20 and lock the CBC into a high affinity cap-binding state with the cap structure. Associates with NCBP3 to form an alternative cap-binding complex (CBC) which plays a key role in mRNA export and is particularly important in cellular stress situations such as virus infections. The conventional CBC with NCBP2 binds both small nuclear RNA (snRNA) and messenger (mRNA) and is involved in their export from the nucleus whereas the alternative CBC with NCBP3 does not bind snRNA and associates only with mRNA thereby playing a role only in mRNA export. NCBP1/CBP80 is required for cell growth and viability (PubMed:26382858).

Cellular Location
Nucleus. Cytoplasm. Note=Localized in cytoplasmic mRNP granules containing untranslated mRNAs.

NCBP1 Blocking Peptide (C-term) - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Blocking Peptides

NCBP1 Blocking Peptide (C-term) - Images

NCBP1 Blocking Peptide (C-term) - Background

The product of this gene is a component of the nuclear cap-binding protein complex (CBC), which binds to the monomethylated 5' cap of nascent pre-mRNA in the nucleoplasm. The encoded protein promotes high-affinity mRNA-cap binding and associates with the CTD of RNA polymerase II. The CBC promotes pre-mRNA splicing, 3'-end processing, RNA nuclear export, and nonsense-mediated mRNA decay.

NCBP1 Blocking Peptide (C-term) - References

Hwang, J., et al. Mol. Cell 39(3):396-409(2010)
Kim, K.M., et al. Genes Dev. 23(17):2033-2045(2009)
Dias, S.M., et al. Nat. Struct. Mol. Biol. 16(9):930-937(2009)
Worch, R., et al. J. Mol. Biol. 385(2):618-627(2009)
Ma, X.M., et al. Cell 133(2):303-313(2008)