

## Product datasheet for **RN207010**

### **Ncbp2 (NM\_001109525) Rat Untagged Clone**

#### Product data:

**Product Type:** Expression Plasmids  
**Product Name:** Ncbp2 (NM\_001109525) Rat Untagged Clone  
**Tag:** Tag Free  
**Symbol:** Ncbp2  
**Synonyms:** CBP20; Pigz  
**Vector:** pCMV6-Entry (PS100001)  
**E. coli Selection:** Kanamycin (25 ug/mL)  
**Cell Selection:** Neomycin  
**Fully Sequenced ORF:** >RN207010 representing NM\_001109525  
 Red=Cloning site Blue=ORF Orange=Stop codon

TTTTGTAATACGACTCACTATAGGGCGGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
 GCC**GCGATCGC**C

ATGTCGGGTGGCCTCCTGAAGGCGCTGCGCAGTGACTCCTACGTGGAGCTCAGCGAATACCGGGACCAAC  
 ACTTCCGGGGTGACAATGAAGAACAGGAAAAGTTACTGAAGAAGAGCTGTACGTTGTATGTTGGGAATCT  
 TTCCTTTTATACAACAGAAGAACAGATTTATGAGCTCTTCAGCAAAAGTGGGGACATAAAGAAGATCATC  
 ATGGGTCTGGACAAGATGAAGAAAACAGCGTGTGGGTTCTGTTTCGTGGAATACTATTCAAGAGCAGATG  
 CAGAGAACGCAATGCGGTACATAAACCGAACCGCTCTGGATGACCGGATCATACGGACAGACTGGGATGC  
 AGGCTTTAAGGAGGGCAGGCAGTATGGACGTGGACGGTCTGGGGTCCAGGTCCGGGATGAGTATCGGGAG  
 GACTACGATGCTGGAAGAGGCGGCTATGGAAAAGTGGCACAAAAACAG**TGA**

AG**CGGACCG**ACGCGTACGCGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCC  
 TGGATTACAAGGATGACGACGATAAGGTTTAA

**Restriction Sites:** SgfI-RsrII  
**ACCN:** NM\_001109525  
**Insert Size:** 471 bp  
**OTI Disclaimer:**

Our molecular clone sequence data has been matched to the reference identifier above as a point of reference. Note that the complete sequence of our molecular clones may differ from the sequence published for this corresponding reference, e.g., by representing an alternative RNA splicing form or single nucleotide polymorphism (SNP).



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<b>Components:</b>	The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).
<b>Reconstitution Method:</b>	<ol style="list-style-type: none"><li>1. Centrifuge at 5,000xg for 5min.</li><li>2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.</li><li>3. Close the tube and incubate for 10 minutes at room temperature.</li><li>4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.</li><li>5. Store the suspended plasmid at -20°C. The DNA is stable for at least one year from date of shipping when stored at -20°C.</li></ol>
<b>RefSeq:</b>	<u>NM_001109525.1, NP_001102995.1</u>
<b>RefSeq Size:</b>	1587 bp
<b>RefSeq ORF:</b>	471 bp
<b>Locus ID:</b>	689116
<b>UniProt ID:</b>	<u>B1WC40</u>
<b>Cytogenetics:</b>	11q22
<b>Gene Summary:</b>	<p>Component of the cap-binding complex (CBC), which binds co-transcriptionally 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, thereby being 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, NCBP2/CBP20 recognizes and binds capped RNAs (m7GpppG-capped RNA) but requires NCBP1/CBP80 to stabilize the movement of its N-terminal loop and lock the CBC into a high affinity cap-binding state with the cap structure. The conventional cap-binding complex with NCBP2 binds both small nuclear RNA (snRNA) and messenger (mRNA) and is involved in their export from the nucleus (By similarity).[UniProtKB/Swiss-Prot Function]</p>