

Product datasheet for **MC200951**

Mettl3 (NM_019721) Mouse Untagged Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Mettl3 (NM_019721) Mouse Untagged Clone
Tag:	Tag Free
Symbol:	Mettl3
Synonyms:	2310024F18Rik; M6A; Spo8
Mammalian Cell Selection:	Neomycin
Vector:	PCMV6-Kan/Neo (PCMV6KN)
E. coli Selection:	Kanamycin (25 ug/mL)



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Fully Sequenced ORF: >BC012526 sequence for NM_019721
 CTTGGCTCTATCCGGCTGGCCTTCGGGCGTCTCGTGAGAATTAGATGTTTCTTAGTTCTAGGCTGGGGA
 GGTGCTAGTCCGCCGCGCCTGATTTCGAGCCGAGTCCGCGCTGGGAGCTAGGATGTCGGACACGTGGAGCT
 CTATCCAGGCCATAAGAAACAGCTGGACTCGCTTCGCGAGAGACTGCAGCGGCACGGAAGCAGGACTC
 TGGCCACTTGGATTTAAGGAACCCAGAAGCGGCACTGTCCCAACCTCCGTAGTGATAGTCCCCTGCCT
 ACTGCCCTACCTCTAGTGGCCCTAAGCCAGCAGCAGCTGTGGCCCTTGCCTTGGCCACTGATGCTGTTCCAT
 AGTTAGAGAAGAAGTTGCTACACCACCTCAGATCTGGCCTTGCCTTGGCCACTGATGCTGTTCCAT
 CCGTCTTGCCATCTCTACGCCAGATGCACCTGCCACTCAAGATGGGGTAGAAAGCCTTCTCCAGAAATTT
 GCCGCCAGGAGTTGATTGAGGTAAGCGAGGTTCTCTCCAAGATGATGCACATCTACTCTTGTAACTT
 ACGCTGACCCTCAAGCTGTCTGCCATGATGGGGCTGTGGCAGATAAGAAAGGCTTTGGAGAGGTAGC
 AGGGACCATCGCGGGGCAGAAACGGCGTGCAGAACAGGATTTGACTACAGTGACCACCTTTGCCAGCTCT
 TTAGCATCTGGTCTGGCCTCTTCAGCATCAGAACCAGCTAAGGAGCCGGCTAAGAAGTCAAGGAAGCAG
 CTGCTCCGATGTTGATCTGGAGATAGAAAGCCTTTTGAACCAACAGTCAACGAAAGAAGCAGAGCAA
 GAAGGTCAGTCAGGAGATCCTAGAGCTATTAATACCACAACAGCAAGGAACAGTCCATTGTTGAAAAG
 TTTTCGCTCTCGAGGTCGGGCCAGGTGCAAGAATTTTGTGACTATGGGACCAAGGAAGAGTGCATGAAA
 CAGTGACGCTGACCGGCTTGTGCAAGCTGCACTTCAGACGAATTATCAATAAGCACACTGATGAATC
 TTAGGTGACTGCTTTTCTTAACACATGTTTCCACATGGACACCTGCAAAATATGTTCACTATGAAT
 GATGCTTGTGTTGATTCTGAGAGTCTGGCAGCAAGGAGCATATGCCAAGCCAGGAGCTTGTCTTACAC
 AGAGTGTGGGGTGACTCCAGTGTGATCGACTCTTCCACCTCAGTGGATCTGTTGTGATATCCGCTA
 CCTGGACGTCAGTATCTTGGGCAAATTTGCAGTTGTGATGGCTGACCCACCTTGGGATATTCACATGGAG
 CTACCGTATGGGACATTAACAGATGATGAGATGCCAGGCTCAATATACCAGTGTACAGGATGACGGCT
 TTCTTTTCTCTGGGTCACAGGAAGGGCCATGGAATTTGGCAGAGAATGTCTGAACCTCTGGGTTATGA
 ACGGGTGGATGAAATCATCTGGGTGAAGACTAATCAGCTGCAGCGCATATTAGGACGGCCGGACGGGT
 CACTGGTTAAACCACGGGAAGGAACACTGCTTGGTTGGTGTCAAGGGAAATCCTCAAGGATTCACCCAGG
 GTCTGGACTGCGATGTGATTGTAGCTGAGGTTCCGTTCCACCAGTCATAAACCCAGATGAAATATATGGCAT
 GATTGAGAGACTGTCCCCTGGCACCCGCAAGATTGAGTTATTTGGACGACCACACAATGTGCAGCCCAAC
 TGGATTACTCTTGGAAACCAACTGGATGGGATACACCTACTAGACCCAGATGTGGTTGCCAGGTTTAAAGC
 AAAGGTATCCGGACGGCATCATCTCTAAACCTAAGAATTTATAGACGCACTTCTTACAAAGCTAAGCAT
 TCAGAGCCATGGGCTACAGGCCACACCTTAAGAGGACTGTTTACGCAATAGTGTCCCTACCTGTATAT
 AAATAAAAGTTTGTATTGTAATAAAAAAAAAAAAAAAAAAAAAAAAAA

Restriction Sites: RsrII-NotI

ACCN: NM_019721

Insert Size: 1743 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).

Components: 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).

- Reconstitution Method:**
1. Centrifuge at 5,000xg for 5min.
 2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.
 3. Close the tube and incubate for 10 minutes at room temperature.
 4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.
 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.

RefSeq: [BC012526](#), [AAH12526](#)
RefSeq Size: 2003 bp
RefSeq ORF: 1743 bp
Locus ID: 56335
UniProt ID: [Q8C3P7](#)
Cytogenetics: 14 C2

Gene Summary:

The METTL3-METTL14 heterodimer forms a N6-methyltransferase complex that methylates adenosine residues at the N(6) position of some RNAs and regulates various processes such as the circadian clock, differentiation of embryonic and hematopoietic stem cells, cortical neurogenesis, response to DNA damage, differentiation of T-cells and primary miRNA processing (PubMed:25456834, PubMed:24394384, PubMed:25569111, PubMed:28809392, PubMed:28792938, PubMed:28869969, PubMed:28965759). In the heterodimer formed with METTL14, METTL3 constitutes the catalytic core (By similarity). N6-methyladenosine (m6A), which takes place at the 5'-[AG]GAC-3' consensus sites of some mRNAs, plays a role in mRNA stability, processing, translation efficiency and editing (By similarity). M6A acts as a key regulator of mRNA stability: methylation is completed upon the release of mRNA into the nucleoplasm and promotes mRNA destabilization and degradation (PubMed:28637692). In embryonic stem cells (ESCs), m6A methylation of mRNAs encoding key naive pluripotency-promoting transcripts results in transcript destabilization, promoting differentiation of ESCs (PubMed:25456834, PubMed:24394384, PubMed:25569111). M6A regulates the length of the circadian clock: acts as an early pace-setter in the circadian loop by putting mRNA production on a fast-track for facilitating nuclear processing, thereby providing an early point of control in setting the dynamics of the feedback loop (PubMed:24209618). M6A also regulates circadian regulation of hepatic lipid metabolism (By similarity). M6A regulates spermatogonial differentiation and meiosis and is essential for male fertility and spermatogenesis (PubMed:28809392, PubMed:28914256). Involved in the response to DNA damage: in response to ultraviolet irradiation, METTL3 rapidly catalyzes the formation of m6A on poly(A) transcripts at DNA damage sites, leading to the recruitment of POLK to DNA damage sites (By similarity). M6A is also required for T-cell homeostasis and differentiation: m6A methylation of transcripts of SOCS family members (SOCS1, SOCS3 and CISH) in naive T-cells promotes mRNA destabilization and degradation, promoting T-cell differentiation (PubMed:28792938). Inhibits the type I interferon response by mediating m6A methylation of IFNB (By similarity). M6A also regulates cortical neurogenesis: m6A methylation of transcripts related to transcription factors, neural stem cells, the cell cycle and neuronal differentiation during brain development promotes their destabilization and decay, promoting differentiation of radial glial cells (PubMed:28965759). M6A also takes place in other RNA molecules, such as primary miRNA (pri-miRNAs) (By similarity). Mediates m6A methylation of Xist RNA, thereby participating in random X inactivation: m6A methylation of Xist leads to target YTHDC1 reader on Xist and promote transcription repression activity of Xist (By similarity). METTL3 mediates methylation of pri-miRNAs, marking them for recognition and processing by DGCR8 (By similarity). Acts as a positive regulator of mRNA translation independently of the methyltransferase activity: promotes translation by interacting with the translation initiation machinery in the cytoplasm (By similarity).[UniProtKB/Swiss-Prot Function]