

## METTL1 Protein, Human (His)

<b>Cat. No.:</b>	HY-P75926
<b>Synonyms:</b>	tRNA (guanine-N(7)-)-methyltransferase; Methyltransferase-like protein 1; METTL1; C12orf1
<b>Species:</b>	Human
<b>Source:</b>	E. coli
<b>Accession:</b>	Q9UBP6 (D32-Q265)
<b>Gene ID:</b>	4234
<b>Molecular Weight:</b>	Approximately 30 kDa

### PROPERTIES

<b>AA Sequence</b>	<p>D H T L R Y P V K P    E E M D W S E L Y P    E F F A P L T Q N Q    S H D D P K D K K E</p> <p>K R A Q A Q V E F A    D I G C G Y G G L L    V E L S P L F P D T    L I L G L E I R V K</p> <p>V S D Y V Q D R I R    A L R A A P A G G F    Q N I A C L R S N A    M K H L P N F F Y K</p> <p>G Q L T K M F F L F    P D P H F K R T K H    K W R I I S P T L L    A E Y A Y V L R V G</p> <p>G L V Y T I T D V L    E L H D W M C T H F    E E H P L F E R V P    L E D L S E D P V V</p> <p>G H L G T S T E E G    K K V L R N G G K N    F P A I F R R I Q D    P V L Q</p>
<b>Biological Activity</b>	Measured in a cell proliferation assay using HepG2 cells. The ED <sub>50</sub> for this effect is 0.9259 ng/mL, corresponding to a specific activity is 1.080×10 <sup>6</sup> units/mg.
<b>Appearance</b>	Solution
<b>Formulation</b>	Supplied as a 0.2 µm filtered solution of 50 mM Tris, 0.5 M NaCl, 20% Glycerol, pH 8.0.
<b>Endotoxin Level</b>	<1 EU/µg, determined by LAL method.
<b>Reconstitution</b>	N/A.
<b>Storage &amp; Stability</b>	Stored at -80°C for 1 year. It is stable at -20°C for 3 months after opening. It is recommended to freeze aliquots at -80°C for extended storage. Avoid repeated freeze-thaw cycles.
<b>Shipping</b>	Shipping with dry ice

### DESCRIPTION

<b>Background</b>	METTL1, the catalytic component of the METTL1-WDR4 methyltransferase complex, is instrumental in mediating the formation of N(7)-methylguanine in various RNA species, including tRNAs, mRNAs, and microRNAs (miRNAs). Specifically, METTL1 catalyzes the addition of N(7)-methylguanine at position 46 (m7G46) within a significant subset of tRNAs containing the 5'-RAGGU-3' motif in the variable loop. This modification, such as m7G46, stabilizes tRNA tertiary structure and shields
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tRNAs from decay. METTL1 also serves as a methyltransferase for internal N(7)-methylguanine in mRNAs, particularly in response to stress, leading to the relocalization of methylated mRNAs to stress granules and consequent translational suppression. Furthermore, METTL1 methylates specific miRNAs, including let-7, facilitating let-7 miRNA processing by disrupting inhibitory secondary structures within primary miRNA transcripts. Beyond its role in RNA modification, METTL1 emerges as a regulator of embryonic stem cell self-renewal and differentiation.

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**Caution: Product has not been fully validated for medical applications. For research use only.**

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