

PRODUCT INFORMATION



YTHDC2 (human, recombinant)

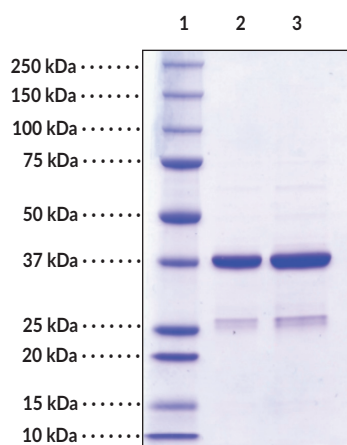
Item No. 26344

Overview and Properties

Synonyms:	CsA-Associated Helicase-Like Protein, hYTHDC2, Probable ATP-Dependent RNA Helicase YTHDC2, 3'-5' RNA Helicase YTHDC2, YTH Domain-Containing Protein 2
Source:	Recombinant N-terminal GST-tagged YTHDC2 purified from <i>E. coli</i>
Amino Acids:	1288-1421
Uniprot No.:	Q9H6S0
Molecular Weight:	42.13 kDa
Storage:	-80°C (as supplied)
Stability:	≥1 year
Purity:	<i>batch specific</i> (≥85% estimated by SDS-PAGE)
Supplied in:	50 mM HEPES, pH 8.0, with 150 mM sodium chloride and 10% glycerol
Protein Concentration:	<i>batch specific</i> mg/ml

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

Image



Lane 1: MW Markers
Lane 2: YTHDC2 (2 µg)
Lane 3: YTHDC2 (4 µg)

Representative gel image shown; actual purity may vary between each batch.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

YTH domain containing 2 (YTHDC2) is an ATP-dependent 3'-5' RNA helicase and a member of the DExD/H-box family of helicases.¹ YTHDC2 contains ATP binding, ATP hydrolysis, and RNA binding motifs.¹ The YTH domain binds to N⁶-methyladenosine-modified germline messenger RNA to regulate meiotic gene expression in mammalian germ cells, mediating the mitotic-to-meiotic transition in mouse germ cells.^{2,3} *Ythdc2*^{-/-} male and female mice show disrupted meiotic prophase progression.³ Male *Ythdc2*^{-/-} mice have degraded germ cells and lack mature spermatozoa, while female *Ythdc2*^{-/-} mice lack developing ovarian follicles and have few germ cells. YTHDC2 also facilitates hepatitis C virus (HCV) genome replication by binding to the HCV replication cofactor cyclophilin B and the HCV RNA polymerase non-structural protein 5B (NS5B).⁴ YTHDC2 downregulation inhibits proliferation in Huh7 hepatocellular carcinoma cells and reduces metastasis in a Y2KD-116 mouse xenograft model using HCT116 cells in which YTHDC2 is downregulated.^{4,5} The expression of YTHDC2 in isolated human tumor tissue is positively correlated with tumor stage and lymph node metastasis.⁵

References

1. Tanabe, A., Konno, J., Tanikawa, K., *et al.* Transcriptional machinery of TNF- α -inducible YTH domain containing 2 (YTHDC2) gene. *Gene* **535(1)**, 24-32 (2014).
2. Wojtas, M.N., Pandey, R.R., Mendel, M., *et al.* Regulation of m⁶A transcripts by the 3'→5' RNA helicase YTHDC2 is essential for a successful meiotic program in the mammalian germline. *Mol. Cell* **68(2)**, 374-387 (2017).
3. Bailey, A.S., Batista, P.J., Gold, R.S., *et al.* The conserved RNA helicase YTHDC2 regulates the transition from proliferation to differentiation in the germline. *Elife* **pii:e26116** (2017).
4. Morohashi, K., Sahara, H., Watashi, K., *et al.* Cyclosporin A associated helicase-like protein facilitates the association of hepatitis C virus RNA polymerase with its cellular cyclophilin B. *PLoS One* **6(4):e18285** (2011).
5. Tanabe, A., Tanikawa, K., Tsunetomi, M., *et al.* RNA helicase YTHDC2 promotes cancer metastasis via the enhancement of the efficiency by which *HIF-1 α* mRNA is translated. *Cancer Lett.* **376(1)**, 34-42 (2016).

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