

# CTP Synthase Rabbit mAb

Catalog # AP75301

## Product Information

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<b>Application</b>	WB, FC
<b>Primary Accession</b>	<a href="#">P17812</a>
<b>Reactivity</b>	Rat, Human, Mouse
<b>Host</b>	Rabbit
<b>Clonality</b>	Monoclonal Antibody
<b>Isotype</b>	IgG
<b>Conjugate</b>	Unconjugated
<b>Purification</b>	Affinity Purified
<b>Calculated MW</b>	66690

## Additional Information

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<b>Gene ID</b>	1503
<b>Other Names</b>	CTPS1
<b>Dilution</b>	WB~~1:1000-1:5000 FC~~1:10-1:100
<b>Format</b>	Liquid in 50mM Tris-Glycine(pH 7.4), 0.15M NaCl, 40%Glycerol, 0.01% sodium azide and 0.05% BSA.
<b>Storage</b>	Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.

## Protein Information

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<b>Name</b>	CTPS1 {ECO:0000303   PubMed:16179339, ECO:0000312   HGNC:HGNC:2519}
<b>Function</b>	CTP synthase involved in the de novo synthesis of CTP, a precursor of DNA, RNA and phospholipids (PubMed: <a href="#">16179339</a> , PubMed: <a href="#">17189248</a> , PubMed: <a href="#">17463002</a> , PubMed: <a href="#">24870241</a> , PubMed: <a href="#">28459447</a> , PubMed: <a href="#">34583994</a> ). Catalyzes the ATP-dependent amination of UTP to CTP with either L-glutamine or ammonia as a source of nitrogen (PubMed: <a href="#">16179339</a> , PubMed: <a href="#">24870241</a> , PubMed: <a href="#">28459447</a> , PubMed: <a href="#">34583994</a> ). CTPS1 CTP synthase activity plays a crucial role in the proliferation of activated lymphocytes and immunity; additional CTP being required to meet increased demand for DNA, RNA and lipid membrane biosynthesis in proliferating lymphocytes (PubMed: <a href="#">24870241</a> , PubMed: <a href="#">8530356</a> ). In addition to CTP synthase activity, also acts as a protein deamidase that catalyzes the side chain deamidation of specific asparagine residues of proteins to aspartate (PubMed: <a href="#">40240600</a> ). Acts as a negative regulator of innate immunity by mediating deamidation of 'Asn-85' of IRF3, preventing IRF3 from binding DNA (By similarity). Facilitates chromatin

relaxation in response to DNA damage by mediating deamidation of 'Asn-76' and 'Asn-77' of histone H1, thereby promoting subsequent acetylation of histone H1 at 'Lys-75' (H1K75ac), increasing chromatin accessibility to facilitate the recruitment of DNA repair proteins (PubMed:[40240600](#)).

### Cellular Location

Cytoplasm, cytosol. Nucleus. Chromosome Note=Cytoplasmic and nuclear; when active, detected in long filamentous structures named cytoophidium (PubMed:24503052, PubMed:25223282, PubMed:28459447). Enriched on chromatin in response to DNA damage (PubMed:40240600).

### Tissue Location

Widely expressed at low level, except in activated T-cells where it is highly expressed.

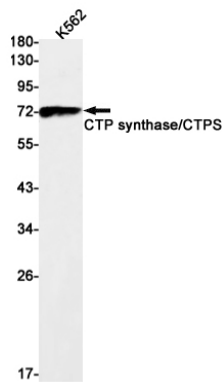
## Background

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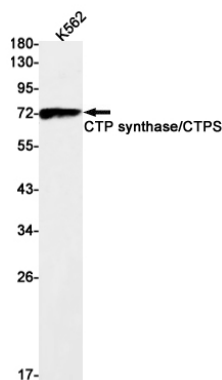
This enzyme is involved in the de novo synthesis of CTP, a precursor of DNA, RNA and phospholipids. Catalyzes the ATP-dependent amination of UTP to CTP with either L-glutamine or ammonia as a source of nitrogen. This enzyme and its product, CTP, play a crucial role in the proliferation of activated lymphocytes and therefore in immunity.

## Images

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Western blot analysis of CTP synthase/CTPS in K562 lysates using CTP Synthase antibody.



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