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Anti-CTPS Antibody

Catalog # AP51126

Product Information

Application	WB
Primary Accession	P17812
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Calculated MW	66690

Additional Information

Gene ID	1503
Other Names	CTPS; CTP synthase 1; CTP synthetase 1; UTP--ammonia ligase 1
Target/Specificity	KLH-conjugated synthetic peptide encompassing a sequence within the N-term region of human CTPS. The exact sequence is proprietary.
Dilution	WB~~WB (1/500 - 1/1000)
Format	Liquid in 0.42% Potassium phosphate, 0.87% Sodium chloride, pH 7.3, 30% glycerol, and 0.01% sodium azide.
Storage	Store at -20 °C.Stable for 12 months from date of receipt

Protein Information

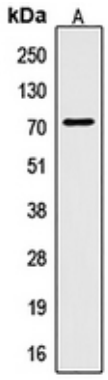
Name	CTPS1 {ECO:0000303|PubMed:16179339, ECO:0000312|HGNC:HGNC:2519}
Function	CTP synthase involved in the de novo synthesis of CTP, a precursor of DNA, RNA and phospholipids (PubMed:16179339, PubMed:17189248, PubMed:17463002, PubMed:24870241, PubMed:28459447, PubMed:34583994). Catalyzes the ATP-dependent amination of UTP to CTP with either L-glutamine or ammonia as a source of nitrogen (PubMed:16179339, PubMed:24870241, PubMed:28459447, PubMed:34583994). 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:24870241, PubMed:8530356). 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:40240600). 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.

References

Yamauchi M.,et al.EMBO J. 9:2095-2099(1990).
Gregory S.G.,et al.Nature 441:315-321(2006).
Mural R.J.,et al.Submitted (SEP-2005) to the EMBL/GenBank/DDBJ databases.
Han G.-S.,et al.J. Biol. Chem. 280:38328-38336(2005).
Olsen J.V.,et al.Cell 127:635-648(2006).

Images



Western blot analysis of CTPS expression in HepG2 (A) whole cell lysates. (Predicted band size: 41; 66 kD; Observed band size: 80 kD)

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