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KD-Validated Anti-CTP synthase 1 Rabbit Monoclonal Antibody

Rabbit monoclonal antibody
Catalog # AGI1435

Product Information

Application	WB, FC, ICC
Primary Accession	P17812
Reactivity	Rat, Human, Mouse
Clonality	Monoclonal
Isotype	Rabbit IgG
Clone Names	23GB 1685
Calculated MW	66690
Gene Name	CTPS1
Aliases	CTPS1; CTP Synthase 1; GATD5A; CTPS; UTP--Ammonia Ligase 1; CTP Synthetase 1; EC 6.3.4.2; Cytidine 5-Prime Triphosphate Synthetase; Cytidine 5'-Triphosphate Synthetase; CTP Synthase; GATD5; IMD24
Immunogen	A synthesized peptide derived from human CTP synthase / CTPS

Additional Information

Gene ID	1503
Other Names	CTP synthase 1, 6.3.4.2, CTP synthetase 1, UTP--ammonia ligase 1, CTPS1 (HGNC:2519)

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.

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