

ERAL1 Antibody / GTPase Era, mitochondrial Antibody (FY13643)

Catalog No.	Formulation	Size
FY13643	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

Species Reactivity	Human
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na ₂ HPO ₄ .
UniProt	O75616
Applications	Western Blot : 0.5-1ug/ml Immunohistochemistry (FFPE) : 2-5ug/ml Immunoprecipitation : 2ug per 500ug of lysate ELISA : 0.1-0.5 ug/ml
Limitations	For research use only, this ERAL1 Antibody / GTPase Era, mitochondrial Antibody is not intended for diagnostic or therapeutic use.

ERAL1 Antibody by WB in human cell lines. Western blot analysis using GTPase Era, mitochondrial Antibody detects a band near 39-40 kDa in three human cell lysates. Lane 1 contains HEK293T cells, lane 2 contains K562 cells, and lane 3 contains A549 cells. The bands migrate at similar apparent molecular weights across the three samples, consistent with detection of ERAL1. The blot includes a molecular weight marker and was developed by immunoblotting with an anti-ERAL1 primary antibody. This experiment documents detection of a target-sized protein in multiple human cellular backgrounds.

ERAL1 Antibody by IHC in human ovarian cancer tissue. Immunohistochemistry using GTPase Era, mitochondrial Antibody shows brown DAB staining in a paraffin-embedded section of human ovarian carcinoma. The image includes hematoxylin-counterstained nuclei and heterogeneous staining among the tumor cells. Heat-induced epitope retrieval was performed in EDTA buffer at pH 8.0, followed by blocking with goat serum. The tissue was incubated with rabbit anti-ERAL1 antibody at 2 ug/mL overnight at 4°C, and signal was developed using an HRP-based detection system with DAB chromogen.

ERAL1 Antibody by IP from K562 cell lysate. Immunoprecipitation analysis using GTPase Era, mitochondrial Antibody shows an ERAL1-reactive band in the antibody immunoprecipitate. The figure includes an input lysate lane and a control-IgG immunoprecipitation lane for comparison. K562 cell lysate was used as the starting material, and the recovered material was analyzed by immunoblotting. The visible band in the antibody-IP lane supports enrichment of an ERAL1-reactive protein under the tested conditions.

Description

ERAL1 Antibody / GTPase Era, mitochondrial Antibody recognizes a mitochondrial GTP-binding protein involved in the maturation of the small mitochondrial ribosomal subunit. ERAL1 is related to bacterial Era proteins, reflecting the evolutionary origin of mitochondria and the conservation of certain ribosome-assembly mechanisms. Its function links nucleotide-dependent protein activity with the production of a translation apparatus required for mitochondrial gene expression.

Mitochondrial ribosomes synthesize a limited but essential set of proteins encoded by mitochondrial DNA, many of which are core components of oxidative phosphorylation complexes. The small mitochondrial ribosomal subunit contains mitochondrial ribosomal proteins and 12S ribosomal RNA. ERAL1 associates with this RNA and helps protect or stabilize it during ribosomal subunit biogenesis. Disturbances in ERAL1 function can therefore impair mitochondrial translation even if mitochondrial DNA transcription continues.

As a GTPase, ERAL1 binds guanine nucleotides and undergoes conformational changes associated with its nucleotide state. This type of molecular switching is well suited to assembly pathways in which RNA and proteins must interact in a coordinated sequence. ERAL1 is not itself a structural respiratory-chain subunit; its effects on respiration arise indirectly through the maturation and function of mitochondrial ribosomes. Reduced mitochondrial protein synthesis can compromise the assembly of complexes that depend on mitochondrially encoded polypeptides.

Because mitochondrial energy production is particularly important in metabolically active tissues, defects in ribosome assembly can have consequences that extend beyond a single biochemical reaction. The precise impact depends on cellular energy demand and the capacity to compensate for reduced respiratory activity. NSJ Bioreagents offers this ERAL1 Antibody to support investigation of 12S ribosomal RNA maintenance and the assembly of translation-competent mitochondrial ribosomes. Studying ERAL1 helps clarify how mitochondrial RNA maturation is coordinated with the synthesis of proteins needed to sustain oxidative phosphorylation.

Explore related research targets in our [Cell Biology Antibodies](#) collection.

Application Notes

The ideal working dilution for the ERAL1 Antibody / GTPase Era, mitochondrial Antibody should be established by the investigator based on assay conditions.

Immunogen

The ERAL1 Antibody was generated using e. coli-derived human ERAL1 recombinant protein (amino acids S77-D421).

Storage

After reconstitution, keep the ERAL1 Antibody at 4oC for up to one month. Alternatively, store aliquots at -20oC for up to six months. Avoid multiple freezing and thawing cycles.

Alternate Names

ERAL1 antibody, GTPase Era, mitochondrial antibody, GTPase Era antibody, mitochondrial antibody, Era like 12S mitochondrial rRNA chaperone 1 antibody, CEGA antibody, Conserved ERA like GTPase antibody, ERA antibody, Era G protein like 1 (E. coli) antibody, ERA W antibody, ERAL1A antibody, hERA antibody, HERA A antibody, HERA B antibody