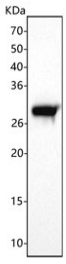
RPE Antibody / Ribulose-phosphate 3-epimerase (RQ8870)

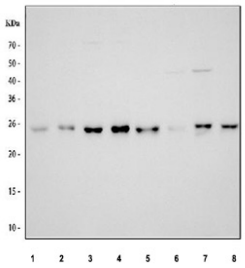
Catalog No.	Formulation	Size
RQ8870	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

Availability	1-3 days
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity chromatography
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	Q96AT9
Applications	Western blot: 0.5-1ug/ml ELISA: 0.1-0.5ug/ml
Limitations	This RPE antibody is available for research use only.



Western blot analysis using RPE antibody. The predicted molecular weight of Ribulose-phosphate 3-epimerase is ~25 kDa. A band is observed at ~28 kDa in mouse liver lysates, consistent with tissue-dependent apparent migration of RPE on SDS-PAGE.



Western blot analysis using RPE antibody. Lane 1: human 293T whole cell lysates; Lane 2: human HeLa whole cell lysates; Lane 3: human K-562 whole cell lysates; Lane 4: human HepG2 whole cell lysates; Lane 5: rat thymus tissue lysates; Lane 6: rat RH35 whole cell lysates; Lane 7: mouse thymus tissue lysates; Lane 8: mouse NIH/3T3 whole cell lysates. The predicted molecular weight of Ribulose-phosphate 3-epimerase is ~25 kDa. A predominant band is observed near the expected size across samples, with minor variation in apparent molecular weight consistent with context-dependent electrophoretic behavior.

Description

RPE antibody targets Ribulose-phosphate 3-epimerase, encoded by the RPE gene. Ribulose-phosphate 3-epimerase is a cytosolic enzyme that plays an essential role in the non-oxidative phase of the pentose phosphate pathway. This metabolic pathway is critical for generating ribose-5-phosphate for nucleotide synthesis and for maintaining cellular redox balance through coordinated flux with NADPH-producing reactions. RPE catalyzes the reversible epimerization of ribulose-5-phosphate to xylulose-5-phosphate, enabling flexible carbon rearrangement to meet cellular biosynthetic demands.

Functionally, Ribulose-phosphate 3-epimerase supports cellular metabolism by facilitating the interconversion of pentose phosphates that feed into glycolysis and nucleotide biosynthesis. Through its enzymatic activity, RPE helps balance carbon flow between energy production and anabolic processes, particularly in rapidly dividing or metabolically active cells. The enzyme operates in concert with other pentose phosphate pathway components to adapt metabolic output in response to oxidative stress, nutrient availability, and proliferative signals. An RPE antibody supports studies focused on metabolic regulation and central carbon metabolism.

RPE is broadly expressed across tissues, reflecting the universal requirement for pentose phosphate pathway activity in mammalian cells. Expression is particularly relevant in tissues with high biosynthetic or detoxification capacity, such as liver and proliferative cell populations. As a housekeeping metabolic enzyme, RPE expression is relatively stable but can be modulated by metabolic state, cellular growth conditions, and stress responses that alter flux through the pentose phosphate pathway.

From a disease-relevance perspective, Ribulose-phosphate 3-epimerase has been studied in the context of cancer metabolism and cellular adaptation to oxidative stress. Altered pentose phosphate pathway activity is a hallmark of many tumors, where increased nucleotide demand and redox control support uncontrolled proliferation. Changes in RPE expression or regulation have therefore been examined as part of broader investigations into metabolic reprogramming in cancer and other diseases characterized by disrupted cellular metabolism.

At the molecular level, Ribulose-phosphate 3-epimerase is a conserved enzyme that functions as part of a tightly regulated metabolic network. Post-translational modifications, protein conformation, and cellular context can influence its enzymatic activity and electrophoretic behavior on SDS-PAGE without indicating changes in primary sequence. An RPE antibody supports research applications focused on metabolic enzyme expression, pentose phosphate pathway regulation, and disease-associated changes in cellular metabolism, with NSJ Bioreagents providing reagents intended for research use.

Application Notes

Optimal dilution of the RPE antibody should be determined by the researcher.

Immunogen

An E.coli-derived human recombinant protein (amino acids D68-E110) was used as the immunogen for the RPE antibody.

Storage

After reconstitution, the RPE Antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

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