PECR Antibody / Peroxisomal trans-2-enoyl-CoA reductase (FY13267)

Catalog No.	Formulation	Size
FY13267	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human, Rat
Format	Lyophilized
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q9BY49
Applications	Western Blot : 0.25-0.5ug/ml Immunohistochemistry : 2-5ug/ml Immunofluorescence : 5ug/ml
Limitations	This PECR antibody is available for research use only.

Description

PECR antibody detects Peroxisomal trans-2-enoyl-CoA reductase, an oxidoreductase enzyme that participates in the peroxisomal fatty acid beta-oxidation pathway. The UniProt recommended name is Peroxisomal trans-2-enoyl-CoA reductase (PECR). This enzyme catalyzes the NADPH-dependent reduction of trans-2-enoyl-CoA intermediates to acyl-CoA during the chain elongation and degradation of fatty acids, thereby maintaining lipid homeostasis and energy balance.

Functionally, PECR antibody identifies a 303-amino-acid peroxisomal matrix enzyme encoded by the PECR gene, which contributes to the reduction step of unsaturated fatty acid metabolism. PECR participates in both peroxisomal beta-oxidation and fatty acid elongation cycles, converting trans-2-enoyl-CoA substrates into saturated acyl-CoA derivatives for further processing. It plays a critical role in maintaining normal lipid composition within cellular membranes and is essential for the metabolism of very long-chain and polyunsaturated fatty acids.

The PECR gene is located on chromosome 2q35 and is expressed in liver, kidney, brain, and skeletal muscle. Its expression is regulated by peroxisome proliferator-activated receptors (PPARs), linking it to lipid metabolism and oxidative stress responses. The enzyme's localization to peroxisomes allows it to cooperate with other beta-oxidation

enzymes such as ACOX1 and HSD17B4.

Pathologically, PECR dysfunction or mutation has been associated with metabolic abnormalities and neurodegenerative disease. Variants in PECR can lead to abnormal lipid accumulation and impaired energy metabolism, contributing to disorders such as Refsum-like disease and retinal dystrophy. Research using PECR antibody supports studies in lipid metabolism, peroxisomal function, and oxidative stress regulation.

PECR antibody is validated for western blotting, immunohistochemistry, and immunofluorescence to detect peroxisomal enzymes. NSJ Bioreagents provides PECR antibody reagents optimized for studies in fatty acid oxidation, lipid homeostasis, and metabolic enzyme regulation.

Structurally, Peroxisomal trans-2-enoyl-CoA reductase belongs to the short-chain dehydrogenase/reductase (SDR) family and contains conserved catalytic motifs (TGxxxGxG and YxxxK) required for NADPH binding and substrate reduction. The enzyme forms homotetramers within peroxisomes and contributes to redox balance via NADPH utilization. This antibody allows investigation of PECR's role in peroxisomal metabolism, energy balance, and cellular redox homeostasis.

Application Notes

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

Immunogen

A synthetic peptide corresponding to a sequence in the middle region of human PECR was used as the immunogen for the PECR antibody.

Storage

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