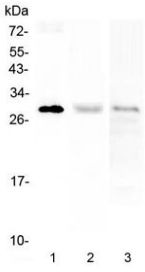
PTCRA Antibody / Pre T-cell antigen receptor alpha (RQ4602)

Catalog No.	Formulation	Size
RQ4602	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	Q6ISU1
Applications	Western Blot : 0.5-1ug/ml Direct ELISA : 0.1-0.5ug/ml (human recombinant protein)



Western blot testing of human 1) A375, 2) HL60 and 3) CCRM-CEM cell lysate with PTCRA antibody at 0.5ug/ml. Predicted molecular weight ~29 kDa.

Description

PTCRA antibody targets Pre T-cell antigen receptor alpha, encoded by the PTCRA gene. Pre T-cell antigen receptor alpha is a type I transmembrane protein that forms an essential component of the pre-T cell receptor (pre-TCR) complex during early T lymphocyte development. Unlike conventional antigen receptors, PTCRA pairs with the T cell receptor beta chain to enable ligand-independent signaling that drives thymocyte maturation.

Functionally, Pre T-cell antigen receptor alpha plays a critical role in beta-selection, a developmental checkpoint that ensures productive T cell receptor beta chain rearrangement. Signaling through the pre-TCR complex promotes

thymocyte survival, proliferation, and differentiation, while preventing further beta chain recombination. A PTCRA antibody supports research focused on T cell development, immune signaling, and lymphocyte lineage commitment.

PTCRA expression is largely restricted to immature thymocytes and is downregulated as T cells progress toward mature alpha-beta T cell receptor expression. Subcellular localization reflects its role as a membrane-associated receptor component, with PTCRA present at the cell surface as part of the pre-TCR complex and within intracellular compartments involved in receptor assembly and trafficking.

From a disease-relevance perspective, altered PTCRA expression has been investigated in T cell leukemias and lymphomas, where disruption of normal T cell developmental checkpoints can contribute to malignant transformation. PTCRA is also studied as a marker of early T cell differentiation and thymic activity, providing insight into immune development and dysregulation.

At the molecular level, Pre T-cell antigen receptor alpha contains an extracellular immunoglobulin-like domain, a transmembrane region, and a short cytoplasmic tail that contributes to receptor assembly and signaling competence. Regulatory mechanisms controlling PTCRA expression and stability influence pre-TCR signaling strength and developmental outcomes. PTCRA antibody reagents support research applications focused on immune development and T cell receptor signaling pathways, with NSJ Bioreagents providing reagents intended for research use.

Application Notes

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

Immunogen

Amino acids T24-T143 from the human protein were used as the immunogen for the PTCRA antibody.

Storage

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