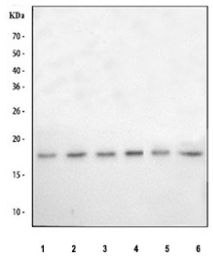
POLR2D Antibody / RNA polymerase II subunit RPB4 (RQ8137)

Catalog No.	Formulation	Size
RQ8137	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	O15514
Localization	Nuclear
Applications	Western Blot : 0.5-1ug/ml Direct ELISA : 0.1-0.5ug/ml
Limitations	This POLR2D antibody is available for research use only.



Western blot testing of 1) human HepG2, 2) human U-2 OS, 3) human K562, 4) human Caco-2, 5) rat C6 and 6) mouse Neuro-2a cell lysate with POLR2D antibody. Predicted molecular weight ~16 kDa.

Description

POLR2D antibody targets RNA polymerase II subunit RPB4, encoded by the POLR2D gene. RPB4 is a conserved component of the RNA polymerase II complex, the multi-subunit enzyme responsible for transcription of protein-coding genes and many non-coding RNAs in eukaryotic cells. RPB4 forms a stable subcomplex with RPB7 that associates with the core polymerase and contributes to transcriptional regulation beyond catalytic RNA synthesis. The protein is primarily localized in the nucleus as part of the active transcription machinery but can also shuttle between nuclear and cytoplasmic compartments depending on cellular conditions.

Functionally, RNA polymerase II subunit RPB4 plays an important role in coordinating transcription with downstream RNA processing events. The RPB4-RPB7 subcomplex influences transcription initiation, elongation, and termination, and has been implicated in coupling transcription to mRNA stability, export, and translation. Through these activities, RPB4 contributes to global gene expression control and enables cells to rapidly adapt transcriptional output in response to stress and environmental changes. A POLR2D antibody supports studies focused on transcriptional regulation and RNA metabolism.

POLR2D is broadly expressed across tissues and cell types, reflecting the universal requirement for RNA polymerase II-mediated transcription. RPB4 is considered a regulatory rather than catalytic subunit, and its association with the polymerase complex can vary depending on growth conditions, stress responses, and transcriptional demand. In addition to its nuclear role, RPB4 has been linked to cytoplasmic mRNA decay pathways, highlighting its multifunctional contribution to gene expression regulation beyond transcription alone.

From a disease-relevance perspective, altered regulation of RNA polymerase II subunits, including RPB4, has been studied in the context of cancer, stress responses, and transcription-associated disorders. Disruption of transcriptional control and RNA processing is a hallmark of many diseases, and components of the polymerase complex are frequently investigated as markers of transcriptional activity and cellular proliferation. While POLR2D itself is not commonly mutated, changes in expression or polymerase composition can influence global transcriptional programs in disease states.

At the molecular level, RNA polymerase II subunit RPB4 is a small, highly conserved protein that interacts tightly with RPB7 and other polymerase subunits. Post-translational modifications and dynamic association with the polymerase complex can influence its functional roles and electrophoretic behavior on SDS-PAGE without implying changes in primary sequence. A POLR2D antibody supports research applications focused on transcription machinery organization, gene expression regulation, and cellular responses to stress, with NSJ Bioreagents providing reagents intended for research use.

Application Notes

Optimal dilution of the POLR2D antibody should be determined by the researcher.

Immunogen

E. coli-derived recombinant human protein (amino acids D7-D124) was used as the immunogen for the POLR2D antibody.

Storage

After reconstitution, the POLR2D antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.