

SNRNP70

Recombinant Human Small Nuclear Ribonucleoprotein 70 kDa His

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|-------------|---------|-----------|--------|
| Catalog No. | CRU103A | Quantity: | 5 µg |
| | CRU103B | | 20 µg |
| | CRU103C | | 1.0 mg |

Alternate Names: U1 small nuclear ribonucleoprotein 70 kDa, U1 snRNP 70 kDa, snRNP70, U1-70K, SNRNP70, RNP101, RPU1, SNRNP70, U1AP1, U1AP, U170K, U1RNP.

Description: Small nuclear ribonucleoprotein complexes (abbreviated as U-snRNP) are essential for splicing of precursor mRNA molecules. U1-snRNP is the most abundant RNP particle in the nucleus and consists of one small uridylate-rich RNA (U1 RNA) complexed with several proteins: the three 68/70 kDa, A, C polypeptides are unique to the U1-snRNP particle, whereas 7 so-called Sm proteins (B/B', D1, D2, D3, E, F, G) form a core subparticle that is common to all U-snRNP complexes.

Both the U1-specific proteins and the Sm core particle are targets of autoantibodies which classically have been called the RNP and RNP-Sm specificities, respectively. A clean diagnostic distinction of these specificities has been complicated by the biochemical difficulties of producing clean subparticle fractions from native sources. The use of single recombinant proteins as antigenic targets guarantees a much higher sensitivity and specificity and is the only way to determine RNP antibodies *sensu stricto* without the disturbing influence of Sm antigens; also with single U1 proteins antibodies will be detected which can be missed because of steric hindrance when using the RNP-Sm complex in an assay.

Autoantibodies to U1-snRNP are present in 95% of patients with Mixed Connective Tissue Disease (MCTD) and 30% of patients with SLE. Antibodies against the 68/70 kDa protein are known to have a high clinical significance in MCTD patients. The 68/70 kDa nomenclature of this protein refers to the fact that different splice variants of the protein are found in human cells.

Recombinant Human U1-snRNP 68 kDa cDNA codes for the 70 kDa isoform of the human U1-snRNP 68 protein (lacking 66 internal amino acids outside the known epitope-containing areas) fused to a hexahistidine purification tag.

The Calculated molecular weight is 44.8 kDa (U1-snRNP 68 displays aberrant electrophoretic mobility leading to an apparent discrepancy between calculated molecular weight and the 55-56 kDa molecular weight determined for this internally shortened molecule by SDS gel electrophoresis).

Physical Appearance: Sterile Filtered clear solution.

GenelD: 6625

Source: *E. coli*

Molecular Weight: 44.8 kDa

Formulation: U1-snRNP is supplied in 20 mM HEPES buffer, pH-7.5, + 0.01 mM EDTA + 0.02% SDS.

Purity: Greater than 90% as determined by SDS-PAGE.

- Immunological functions:** 1. Binds IgG-type human auto-antibodies.
2. Standard ELISA test (checker-board analysis of positive/negative sera panels including CDC international reference sera).
- Coating Concentration:** 0.3-0.6 µg/ml (depending on the type of ELISA plate and coating buffer). Also suitable for biotinylation and iodination
- Applications:** Western-Blot with monoclonal anti-hexa-His-tag antibody & MCTD sera (Mixed Connective Tissue Disease).
- Storage & Stability:** Store at 4°C if entire vial will be used within 2-4 weeks. Store, frozen at -20°C for longer periods of time. **Avoid repeated freeze-thaw cycles.**

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