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Product datasheet for TP319082

Nucleolin (NCL) (NM_005381) Human Recombinant Protein

Product data:

Product Type:	Recombinant Proteins
Description:	Recombinant protein of human nucleolin (NCL), 20 µg
Species:	Human
Expression Host:	HEK293T
Expression cDNA Clone or AA Sequence:	>RC219082 representing NM_005381 Red=Cloning site Green=Tags(s) MVKLAKAGKNQGDPKKMAPPPKEVEEDSEDEEMSEDEEDDSSGEEVVIPQKKGKKAAATSAKKVVVSPTK KVAVATPAKKAAVTPGKKAAATPAKKTVTPAKAVTTPGKKGATPGKALVATPGKKGAAIPAKGAKNGKNA KKEDSDEEEDDDSEEDEEDDEDEDEDEDEIEPAAMKAAAAAPASEDEDDEDDEDDEDDDDEEDDSEEEA METTPAKGKKAAKVVPVKAKNVAEDEDEEEDDEDEDDDDDEDDEDDDDEDDEEEEEEEEEPVKEAPGKR KKEMAKQKAAPEAKKQKVEGTEPTTAFNLFVGNLNFNKSAPELKTGISDVFAKNDLAVVDVRIGMTRKFG YVDFESAEDLEKALELTGLKVFGNEIKLEKPKGKDSKKERDARTLLAKNLPYKVTQDELKEVFEDAAEIR LVSKDGKSKGIAYIEFKTEADAEKTFEEKQGTEIDGRSISLYYTGEKGQNQDYRGGKNSTWSGESKTLVL SNLSYSATEETLQEVFEKATFIKVPQNQNGKSKGYAFIEFASFEDAKEALNSCNKREIEGRAIRLELQGP RGSPNARSQPSKTLFVKGLSEDTTEETLKESFDGSVRARIVTDRETGSSKGFGFVDFNSEEDAKAAKEAM EDGEIDGNKVTLDWAKPKGEGGFGGRGGGRGGFGGRGGGRGGRGGFGGRGRGGFGGRGGFRGGRGGGGDH KPQGKKTKFE TRTRPLEQKLISEEDLAANDILDYKDDDDKV
Tag:	C-Myc/DDK
Predicted MW:	76.4 kDa
Concentration:	>0.1 µg/µL as determined by microplate BCA method
Purity:	> 80% as determined by SDS-PAGE and Coomassie blue staining
Buffer:	25 mM Tris-HCl, 100 mM glycine, pH 7.3, 10% glycerol

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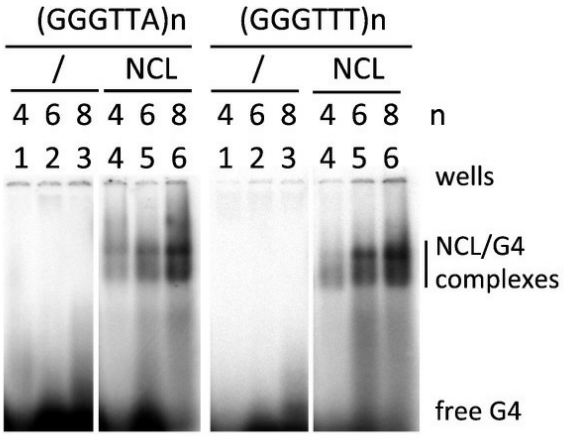
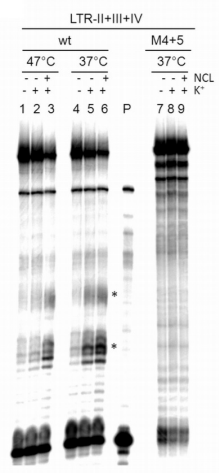
Bioactivity:	EMSA reaction positive control (PMID: 26354862) Taq polymerase assay (regulator) (PMID: 26354862) Binding assay (Dimethylsulfate footprinting) (PMID: 26354862) Binding assay (FRET) (PMID: 26354862) Surface Plasmon Ressonance (SPR) (PMID: 26354862) Association in cell culture (PMID: 26707270) Surface Plasmon Ressonance (SPR) (PMID: 27032748) EMSA reaction positive control (PMID: 27913192) ELISA binding assay (PMID: 28974366)
Preparation:	Recombinant protein was captured through anti-DDK affinity column followed by conventional chromatography steps.
Note:	For testing in cell culture applications, please filter before use. Note that you may experience some loss of protein during the filtration process.
Storage:	Store at -80°C.
Stability:	Stable for 12 months from the date of receipt of the product under proper storage and handling conditions. Avoid repeated freeze-thaw cycles.
RefSeq:	NP_005372
Locus ID:	4691
UniProt ID:	P19338, B3KM80
RefSeq Size:	2732
Cytogenetics:	2q37.1
RefSeq ORF:	2130
Synonyms:	C23; Nsr1
Summary:	Nucleolin (NCL), a eukaryotic nucleolar phosphoprotein, is involved in the synthesis and maturation of ribosomes. It is located mainly in dense fibrillar regions of the nucleolus. Human NCL gene consists of 14 exons with 13 introns and spans approximately 11kb. The intron 11 of the NCL gene encodes a small nucleolar RNA, termed U20. [provided by RefSeq, Jul 2008]
Protein Families:	Druggable Genome, Stem cell - Pluripotency
Protein Pathways:	Pathogenic Escherichia coli infection

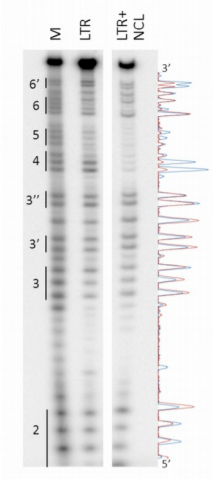
Product images:



EMSA analysis of nucleolin (NCL) (OriGene TP319082) binding to telomeric sequences (GGGTTA)n or (GGGTTT)n to form NCL/G-quadruplexes (G4s) complex (where n = 4, 6 and 8). Lanes 1 - 3 are control reactions without NCL. Figure cited from Biochim Biophys Acta Gen Subj, PMID: 27913192



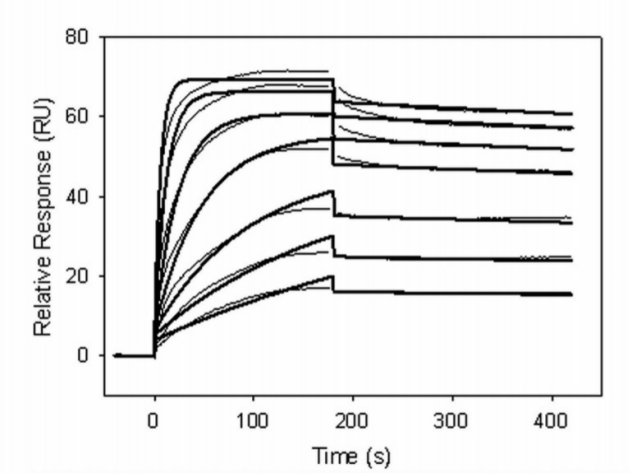
Taq polymerase stop assays were used to assess the stabilization imparted by NCL to wild-type (wt) and mutant M4+5 LTRII+III+IV (M4+5) sequences. Taq polymerization was performed in the presence/absence of K+ and NCL (OriGene TP319082). Amplification of the wt template was performed at 37 C and 47 C; elongation was obtained at 37 C on the mutant template. The * symbol highlights stop regions. Figure cited from Nucleic Acids Res, PMID: 26354862



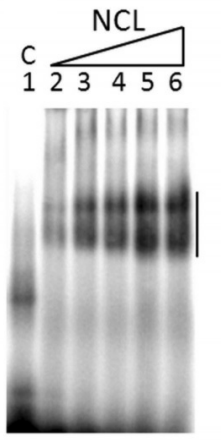
Dimethylsulfate protection analysis of the complex between NCL (OriGene TP319082) and LTR sequence oligonucleotides. A densitogram shown on the right quantifies band cleavage intensity: red and blue lines correspond to the LTR and NCL/LTR complex, respectively. G-tracts and their numbering are indicated on the left. The two gel portions derive from a single gel run. Figure cited from Nucleic Acids Res, PMID: 26354862

LTR sequence	T_m LTR (°C)	T_m LTR + NCL (°C)	ΔT_m (°C)
LTR-II	58.1 ± 0.2	76.2 ± 1.4	18.1
LTR-III	63.1 ± 0.1	75.1 ± 0.7	12.0
LTR-IV	62.1 ± 0.6	69.0 ± 1.4	6.9
LTR-III+IV	54.0 ± 0.6	78.5 ± 2.5	24.5
LTR-II+III+IV	48.0 ± 0.6	86.9 ± 1.4	38.9

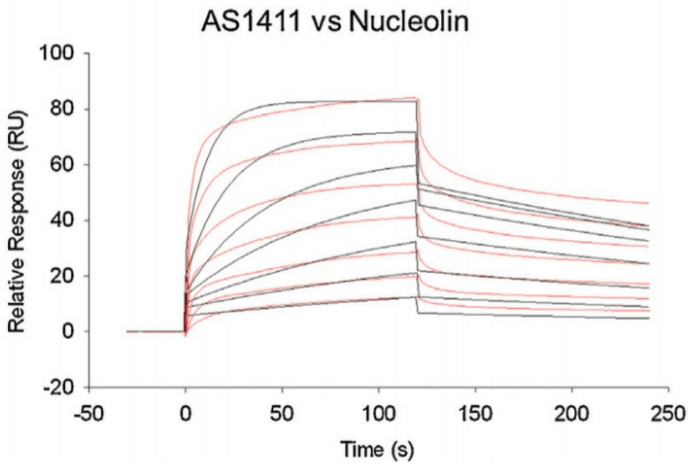
FRET melting analysis of the stabilization of NCL (OriGene TP319082) on the different length G4 LTR sequences.The results showed that NCL conferred the highest stabilization in the series to the LTR-II+III+IV construct, followed by LTR-III+IV. Progressively lower stabilization was observed for LTR-III and LTR-II, whereas LTR-IV was the least affected in the series. The negative control bovine serum albumin (BSA) did not afford any detectable stabilization to the selected sequences. Figure cited from Nucleic Acids Res, PMID: 26354862



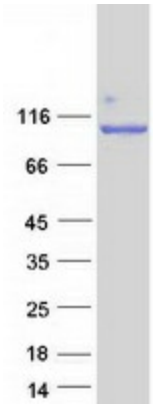
SPR binding analysis of wild-type (wt) LTR-II+III+IV to immobilized NCL (OriGene TP319082). Oligonucleotide concentration range was 31.25 nM - 2000 nM. Sensograms are shown as gray lines and their respective fits as black lines. Figure cited from Nucleic Acids Res, PMID: 26354862



EMSA analysis of the binding of increasing amounts of purified NCL (OriGene TP319082) to the HIV-1 LTR-II+III+IV G-quadruplexes (LTR G4). The vertical bar highlights the portion of the gel where the two NCL/LTR G4 complex bands are observed. Figure cited from Nucleic Acids Res, PMID: 26354862



Surface plasmon resonance (SPR) plots of AS1411 (concentrations 15.6, 31.2, 62.5, 125, 250, 500 and 1000 nM) interactions with nucleolin (OriGene TP319082). AS1411 showed a dose-dependent interaction with NCL (KD = 34.2 nM) with fast association rates. Figure cited from Int J Antimicrob Agents, PMID: 27032748



Coomassie blue staining of purified NCL protein (Cat# TP319082). The protein was produced from HEK293T cells transfected with NCL cDNA clone (Cat# [RC219082]) using MegaTran 2.0 (Cat# [TT210002]).