abcam

ab10297

Anti-hnRNP U/p120 antibody [3G6]

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	Preservative: 0.1% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	Native Full Length Protein corresponding to Human HNRNPU. Database link Q00839
Clone number	3G6
Purification technique	Affinity purification Protein A
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Protein A purified from tissue culture supernatant.

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	1 µg for 10^6 Cells
Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

Not recommended

Species	Lizard
Dilution info	-
Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

Species	Chicken
Dilution info	-
Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

WB

Tested

Species	Human
Dilution info	-
Notes	-

Not recommended

Species	Lizard, Chicken
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	-
Notes	-

Not recommended

Species	Lizard, Chicken

Dilution info	-
Notes	-

Target data

See full target information HNRNPU

Function

DNA- and RNA-binding protein involved in several cellular processes such as nuclear chromatin organization, telomere-length regulation, transcription, mRNA alternative splicing and stability, Xist-mediated transcriptional silencing and mitotic cell progression (PubMed:10490622, PubMed:18082603, PubMed:19029303, PubMed:22325991, PubMed:25986610, PubMed:28622508). Plays a role in the regulation of interphase large-scale gene-rich chromatin organization through chromatin-associated RNAs (caRNAs) in a transcription-dependent manner, and thereby maintains genomic stability (PubMed:1324173, PubMed:28622508, PubMed:8174554). Required for the localization of the long non-coding Xist RNA on the inactive chromosome X (Xi) and the subsequent initiation and maintenance of X-linked transcriptional gene silencing during X-inactivation (By similarity). Plays a role as a RNA polymerase II (Pol II) holoenzyme transcription regulator (PubMed:10490622, PubMed:15711563, PubMed:19617346, PubMed:23811339, PubMed:8174554, PubMed:9353307). Promotes transcription initiation by direct association with the core-TFIIH basal transcription factor complex for the assembly of a functional pre-initiation complex with Pol II in a actin-dependent manner (PubMed:10490622, PubMed:15711563). Blocks Pol II transcription elongation activity by inhibiting the C-terminal domain (CTD) phosphorylation of Pol II and dissociates from Pol II pre-initiation complex prior to productive transcription elongation (PubMed:10490622). Positively regulates CBX5-induced transcriptional gene silencing and retention of CBX5 in the nucleus (PubMed:19617346). Negatively regulates glucocorticoid-mediated transcriptional activation (PubMed:9353307). Key regulator of transcription initiation and elongation in embryonic stem cells upon leukemia inhibitory factor (LIF) signaling (By similarity). Involved in the long non-coding RNA H19-mediated Pol II transcriptional repression (PubMed:23811339). Participates in the circadian regulation of the core clock component BMAL1 transcription (By similarity). Plays a role in the regulation of telomere length (PubMed:18082603). Plays a role as a global pre-mRNA alternative splicing modulator by regulating U2 small nuclear ribonucleoprotein (snRNP) biogenesis (PubMed:22325991). Plays a role in mRNA stability (PubMed:17174306, PubMed:17289661, PubMed:19029303). Component of the CRD-mediated complex that promotes MYC mRNA stabilization (PubMed:19029303). Enhances the expression of specific genes, such as tumor necrosis factor TNFA, by regulating mRNA stability, possibly through binding to the 3'-untranslated region (UTR) (PubMed:17174306). Plays a role in mitotic cell cycle regulation (PubMed:21242313, PubMed:25986610). Involved in the formation of stable mitotic spindle microtubules (MTs) attachment to kinetochore, spindle organization and chromosome congression (PubMed:21242313). Phosphorylation at Ser-59 by PLK1 is required for chromosome alignement and segregation and progression through mitosis (PubMed:25986610). Also contributes to the targeting of AURKA to mitotic spindle MTs (PubMed:21242313). Binds to double- and single-stranded DNA and RNA, poly(A), poly(C) and poly(G) oligoribonucleotides (PubMed:1628625, PubMed:8068679, PubMed:8174554, PubMed:9204873, PubMed:9405365). Binds to chromatin-associated RNAs (caRNAs)

(PubMed:28622508). Associates with chromatin to scaffold/matrix attachment region (S/MAR) elements in a chromatin-associated RNAs (caRNAs)-dependent manner (PubMed:10671544, PubMed:11003645, PubMed:11909954, PubMed:1324173, PubMed:28622508, PubMed:7509195, PubMed:9204873, PubMed:9405365). Binds to the Xist RNA (PubMed:26244333). Binds the long non-coding H19 RNA (PubMed:23811339). Binds to SMN1/2 pre-mRNAs at G/U-rich regions (PubMed:22325991). Binds to small nuclear RNAs (snRNAs) (PubMed:22325991). Binds to the 3'-UTR of TNFA mRNA (PubMed:17174306). Binds (via RNA-binding RGG-box region) to the long non-coding Xist RNA; this binding is direct and bridges the Xist RNA and the inactive chromosome X (Xi) (By similarity). Also negatively regulates embryonic stem cell differentiation upon LIF signaling (By similarity). Required for embryonic development (By similarity). Binds to brown fat long non-coding RNA 1 (Blnc1); facilitates the recruitment of Blnc1 by ZBTB7B required to drive brown and beige fat development and thermogenesis (By similarity). (Microbial infection) Negatively regulates immunodeficiency virus type 1 (HIV-1) replication by preventing the accumulation of viral mRNA transcripts in the cytoplasm.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Heterogeneous nuclear ribonucleoprotein U (hnRNP U) also known as p120 is a multifunctional protein involved in various cellular processes. This protein has an approximate molecular mass of 120 kDa. It is expressed widely in different tissues predominantly within the nuclear compartment of cells. HnRNP U functions mainly in relation to RNA binding and regulation including alternative splicing RNA stability and RNA transport. Its ability to interact with both RNA and DNA attributes to a role in chromatin structure regulation and transcriptional control.
Biological function summary	HnRNP U plays a significant role in organizing chromatin architecture and facilitating transcription regulation. It often associates with other hnRNPs to form ribonucleoprotein complexes which are central in RNA metabolism. Importantly hnRNP U's capacity to interact with chromatin allows it to participate in chromatin remodeling which is necessary for processes such as embryonic development and

	cellular differentiation. It modifies the transcriptional landscape by influencing the accessibility of transcription factors to their DNA targets.
Pathways	HnRNP U integrates into pathways controlling gene expression and RNA processing. It is notably involved in pathways such as signal transduction and DNA damage response. This protein associates with the transcription machinery influencing the expression of genes responsive to cellular stress and proliferation signals. It interacts with proteins like p53 in the DNA damage response pathway which suggests a role in maintaining genomic stability by coordinating chromatin remodeling and transcription in response to stress.
Associated diseases and disorders	HnRNP U connects with pathological conditions such as cancer and neurodegenerative diseases. Its altered expression or mutation can disrupt chromatin structure leading to abnormal gene expression patterns. In cancer hnRNP U correlates with aberrant signaling pathways and may interact with oncoproteins driving tumor progression. In neurodegenerative disorders its association with RNA-binding proteins like TDP-43 suggests a role in the misregulation of RNA processing events contributing to neuronal dysfunction. Understanding hnRNP U's diverse functions helps clarify its potential as a therapeutic target.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

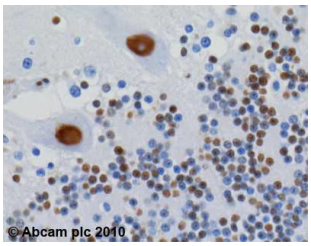
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
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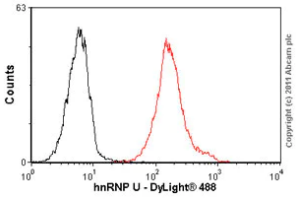
4 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-hnRNP U/p120 antibody [3G6] (ab10297)

HnRNP U/p120 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-hnRNP U/p120 antibody

ab10297 (4 µg/ml)) staining hnRNP U/p120 in human cerebellum using an automated system (DAKO Autostainer Plus). Using this protocol there is strong nuclear staining of Purkinje cells neurons.
Sections were rehydrated and antigen retrieved with the Dako 3 in 1 AR buffer EDTA pH 9.0 in a DAKO PT link. Slides were peroxidase blocked in 3% H_2O_2 in methanol for 10 minutes. They were then blocked with a protein block for 10 minutes (containing casein 0.25% in PBS) then incubated with primary antibody for 20 minutes and detected with Dako Envision Flex amplification kit for 30 minutes. Colorimetric detection was completed with Diaminobenzidine for 5 minutes. Slides were counterstained with Haematoxylin and coverslipped under DePeX. Please note that, for manual staining, optimization of primary antibody concentration and incubation time is recommended. Signal amplification may be required.



Flow Cytometry - Anti-hnRNP U/p120 antibody [3G6] (ab10297)

HnRNP U/p120 Flow Cytometry staining using mouse Anti-hnRNP U/p120 antibody

Overlay histogram showing HeLa (human epithelial cell line from cervix adenocarcinoma) cells stained with ab10297 (red line). The cells were fixed with 100% methanol (5 minutes) and then permeabilized with 0.1% PBS-Tween for 20 minutes. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab10297, 1 µg/1x10^6 cells) for 30 minutes at 22°C. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (ab96879) at 1/500 dilution for 30 minutes at 22°C. Isotype control antibody (black line) was mouse IgG1 [ICIGG1] (ab91353, 2µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed. This antibody gave a positive signal in HeLa cells fixed with 4% paraformaldehyde (10 minutes)/permeabilized in 0.1% PBS-Tween used under the same conditions.



Western blot - Anti-hnRNP U/p120 antibody [3G6] (ab10297)

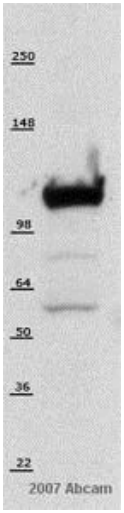
This correlates with the information published in the reference Dreyfuss, G. et. al.
All lanes:
Western blot - Anti-hnRNP U/p120 antibody [3G6] (ab10297) at 1/1000 dilution

Lane 1:
Cytoplasmic fraction of HeLa (human epithelial cell line from cervix adenocarcinoma) lysate

Lane 2:
Nuclear fraction of HeLa (human epithelial cell line from cervix adenocarcinoma) lysate

Predicted band size: 91 kDa

Observed band size: 120 kDa



This image is courtesy of a customer review submitted by Dr Stoil Dmitrov

Western blot - Anti-hnRNP U/p120 antibody [3G6] (ab10297)

All lanes:
Western blot - Anti-hnRNP U/p120 antibody [3G6] (ab10297) at 1/5000 dilution

All lanes:
HEK-293T (human epithelial cell line from embryonic kidney transformed with large T antigen) whole cell lysate at 100 µg

Secondary

All lanes:
HRP conjugated sheep anti-mouse IgG

Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 91 kDa

Observed band size: 120 kDa, 60 kDa, 80 kDa

Exposure time: 1min

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.