abcam

ab220788

# Anti-TATA binding protein TBP antibody [EPR21954] - Loading Control and ChIP Grade

Lab Essentials | Recombinant | RabMAb | Advanced Validation | 20ul selling size

## Key facts

| | |
|---|---|
| **Isotype** | IgG |
| **Host species** | Rabbit |
| **Storage buffer** | pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA |
| **Form** | Liquid |
| **Clonality** | Monoclonal |
| **Immunogen** | The exact immunogen used to generate this antibody is proprietary information. |
| **Clone number** | EPR21954 |
| **Purification technique** | Affinity purification Protein A |
| **Concentration** | 0.547 mg/mL The concentration of this product may be batch-dependent<br>Batch concentration finder → |

## Reactivity data

## ChIC/CUT&RUN-seq

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 3 µg |
| **Notes** | - |

### Expected

| | |
|---|---|
| **Species** | Mouse, Rat |
| **Dilution info** | Use at an assay dependent concentration. |
| **Notes** | - |

## IHC-P

### Tested

| | |
|---|---|
| **Species** | Mouse |
| **Dilution info** | 1/4000 |
| **Notes** | - |

| | |
|---|---|
| **Species** | Rat |
| **Dilution info** | 1/4000 |
| **Notes** | - |

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/4000 |
| **Notes** | - |

## IP

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/30 |
| **Notes** | - |

### Expected

| | |
|---|---|
| **Species** | Mouse, Rat |
| **Dilution info** | Use at an assay dependent concentration. |
| **Notes** | - |

## ChIP

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 5 µg for 25 µg chromatin |
| **Notes** | - |

### Expected

| | |
|---|---|
| **Species** | Mouse, Rat |
| **Dilution info** | Use at an assay dependent concentration. |
| **Notes** | - |

## WB

### Tested

| | |
|---|---|
| **Species** | Mouse |
| **Dilution info** | 1/1000 |
| **Notes** | - |

| | |
|---|---|
| **Species** | Rat |
| **Dilution info** | 1/1000 |
| **Notes** | - |

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/1000 |
| **Notes** | - |

## ICC/IF

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/500 |
| **Notes** | - |

### Expected

| | |
|---|---|
| **Species** | Mouse, Rat |
| **Dilution info** | Use at an assay dependent concentration. |
| **Notes** | - |

## ChIP-seq

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 4 µg for 30 µg chromatin |
| **Notes** | - |

### Expected

| | |
|---|---|
| **Species** | Mouse, Rat |
| **Dilution info** | Use at an assay dependent concentration. |
| **Notes** | - |

## Flow Cyt (Intra)

### Tested

| | |
|---|---|
| **Species** | Human |
| **Dilution info** | 1/500 |
| **Notes** | - |

### Expected

| | |
|---|---|
| **Species** | Mouse, Rat |
| **Dilution info** | Use at an assay dependent concentration. |
| **Notes** | - |

# Target data

See full target information TBP

| | |
|---|---|
| **Function** | The TFIID basal transcription factor complex plays a major role in the initiation of RNA polymerase II (Pol II)-dependent transcription (PubMed:33795473). TFIID recognizes and binds promoters with or without a TATA box via its subunit TBP, a TATA-box-binding protein, and promotes assembly of the pre-initiation complex (PIC) (PubMed:2194289, PubMed:2363050, PubMed:2374612, PubMed:27193682, PubMed:33795473). The TFIID complex consists of TBP and TBP-associated factors (TAFs), including TAF1, TAF2, TAF3, TAF4, TAF5, TAF6, TAF7, TAF8, TAF9, TAF10, TAF11, TAF12 and TAF13 (PubMed:27007846, PubMed:33795473). The TFIID complex structure can be divided into 3 modules TFIID-A, TFIID-B, and TFIID-C (PubMed:33795473). TBP forms the TFIID-A module together with TAF3 and TAF5 (PubMed:33795473). TBP is a general transcription factor that functions at the core of the TFIID complex (PubMed:2194289, PubMed:2363050, PubMed:2374612, PubMed:27193682, PubMed:33795473, PubMed:9836642). During assembly of the core PIC on the promoter, as part of TFIID, TBP binds to and also bends promoter DNA, irrespective of whether the promoter contains a TATA box (PubMed:33795473). Component of a BRF2-containing transcription factor complex that regulates transcription mediated by RNA polymerase III (PubMed:26638071). Component of the transcription factor SL1/TIF-IB complex, which is involved in the assembly of the PIC during RNA polymerase I-dependent transcription (PubMed:15970593). The rate of PIC formation probably is primarily dependent on the rate of association of SL1 with the rDNA promoter (PubMed:15970593). SL1 is involved in stabilization of nucleolar transcription factor 1/UBTF on rDNA (PubMed:15970593). |

## Storage

| | |
|---|---|
| **Shipped at conditions** | Conditional Ambient |
| **Appropriate short-term storage duration** | 1-2 weeks |
| **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 |

## Notes

**Patented technology**
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

**What are the advantages of a recombinant monoclonal antibody?**
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

## Supplementary info

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

| | |
|---|---|
| **Activity summary** | The TATA binding protein (TBP) also known as TBP or TFIID (Transcription Factor IID) is a central player in transcription initiation. This protein weighing approximately 38 kDa binds to the TATA box a DNA sequence found in the promoter region of many genes especially those transcribed by RNA polymerase II. TBP facilitates the loading of the transcription machinery onto DNA enabling the start of transcription. It is found inside the nucleus of eukaryotic cells present across diverse cell types owing to its role in gene expression. |
| **Biological function summary** | TBP serves as a pivotal anchor in the assembly of the transcription preinitiation complex contributing to the process by bending DNA to assist other transcription factors such as TFIIA and TFIIB in binding. Its role in this complex illustrates its importance in regulating gene expression at a fundamental level. TBP’s interaction with other transcription factors ensures precise transcription regulation reflecting its significant contribution to cellular activities. |
| **Pathways** | TBP acts within the RNA polymerase II transcription initiation pathway and is integral in regulating gene expression. TBP's involvement is critical for the process of starting the transcription of mRNA. In its pathway TBP interacts with proteins like TFIID helping to anchor other transcription factors in the complex. By collaborating with these proteins TBP shapes gene regulatory networks essential for a wide range of cellular functions. |
| **Associated diseases and disorders** | TBP is linked to conditions such as spinocerebellar ataxia type 17 (SCA17) and Huntington's disease. SCA17 is associated with mutations in the TBP gene that disrupt its usual functioning leading to neurodegeneration. In Huntington's disease TBP's interaction with proteins such as huntingtin may influence nuclear signaling pathways involved in disease progression. The understanding of TBP’s role in these disorders underlines its relevance in research focused on genetic diseases and transcription-related pathologies. |

## 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.

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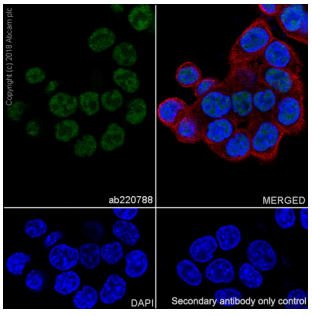
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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:
Terms & Conditions.

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## 14 product images



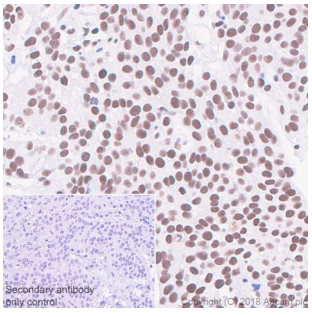

### Immunocytochemistry/ Immunofluorescence - Anti-TATA binding protein TBP antibody [EPR21954] - Loading Control and ChIP Grade (ab220788)

TATA binding protein TBP Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-TATA binding protein TBP antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HCT 116 (human colorectal carcinoma cell line) cells labeling TATA binding protein TBP with ab220788 at 1/500 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing nuclear staining in HCT 116 cells. The nuclear counter stain is DAPI (blue).
Tubulin is detected with Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) (ab195889) at 1/200 dilution (red).

Secondary antibody only control: Used PBS instead of primary antibody, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution.

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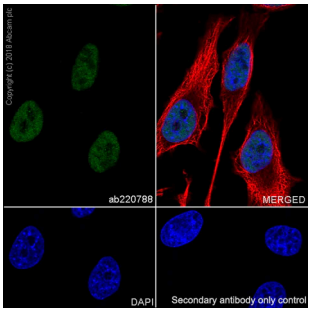

### Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TATA binding protein TBP antibody [EPR21954] - Loading Control and ChIP Grade (ab220788)

TATA binding protein TBP Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-TATA binding protein TBP antibody

Immunohistochemical analysis of paraffin-embedded human bladder cancer tissue labeling TATA binding protein TBP with ab220788 at 1/4000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP)

ready to use. Nuclear staining in human bladder cancer (PMID: 17570761; PMID: 11861477) is observed. Counter stained with hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) ready to use.

Heat mediated antigen retrieval was performed with citrate buffer pH 6 before commencing with IHC staining protocol.

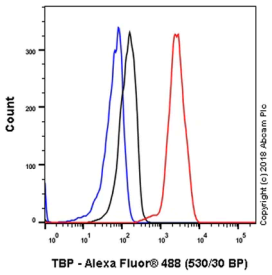



## Immunocytochemistry/ Immunofluorescence - Anti-TATA binding protein TBP antibody [EPR21954] - Loading Control and ChIP Grade (ab220788)

TATA binding protein TBP Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-TATA binding protein TBP antibody

Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HeLa (human epithelial cell line from cervix adenocarcinoma) cells labeling TATA binding protein TBP with ab220788 at 1/500 dilution, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution (green). Confocal image showing nuclear staining in HeLa cells. The nuclear counter stain is DAPI (blue).
Tubulin is detected with Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) (ab195889) at 1/200 dilution (red).

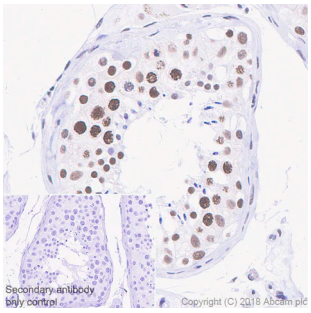
Secondary antibody only control: Used PBS instead of primary antibody, followed by Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077) secondary antibody at 1/1000 dilution.




## Flow Cytometry (Intracellular) - Anti-TATA binding protein TBP antibody [EPR21954] - Loading Control and ChIP Grade (ab220788)

TATA binding protein TBP Flow Cytometry (Intracellular) staining using rabbit Anti-TATA binding protein TBP antibody

Intracellular flow cytometric analysis of4% paraformaldehyde-fixed, 90% methanol-permeabilized HeLa (human epithelial cell line from cervix adenocarcinoma) cells labeling TATA binding protein TBP with ab220788 at 1/500 dilution (red) compared with a Rabbit IgG, monoclonal [EPR25A] - Isotype Control (ab172730) (black) and an unlabeled control (cells incubated with secondary antibody only) (blue). Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) (ab150077), at 1/2000 dilution was used as the secondary antibody.

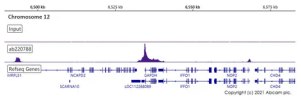



## Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TATA binding protein TBP antibody [EPR21954] - Loading Control and ChIP Grade (ab220788)

TATA binding protein TBP Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-TATA binding protein TBP antibody

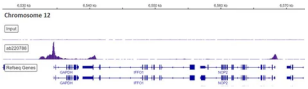
Immunohistochemical analysis of paraffin-embedded human testis tissue labeling TATA binding protein TBP with ab220788 at 1/4000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) ready to use. Nuclear staining in human testis (PMID: 17570761; PMID: 11861477) is observed. Counter stained with hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) ready to use.

Heat mediated antigen retrieval was performed with citrate buffer pH 6 before commencing with IHC staining protocol.



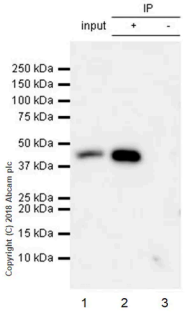
## ChIP-sequencing - Anti-TATA binding protein TBP antibody [EPR21954] - Loading Control and ChIP Grade (ab220788)

Chromatin was prepared from HeLa cells. Cells were fixed with 1% formaldehyde for 10 minutes. ChIP was performed with 30 µg of chromatin and 4 µg of ab220788. ChIP DNA was sequenced on the Illumina NovaSeq 6000 to a depth of 30 million reads. ChIP-Seq validation performed with ChIP-Kit Transcription Factors ChIP-Seq (ab270813).
Additional screenshots of mapped reads can be downloaded here.



## ChIP-sequencing - Anti-TATA binding protein TBP antibody [EPR21954] - Loading Control and ChIP Grade (ab220788)

Chromatin was prepared from HeLa cells. Cells were fixed with 1% formaldehyde for 10 minutes. ChIP was performed with 30 µg of chromatin and 4 µg of Anti-TATA binding protein TBP antibody [EPR21954] - ChIP Grade (ab220788). ChIP DNA was sequenced on the Illumina NextSeq 500 to a depth of 30 million reads. ChIP-Seq validation performed by Active Motif, Carlsbad, CA.
Additional screenshots of mapped reads can be downloaded here.




## Immunoprecipitation - Anti-TATA binding protein TBP antibody [EPR21954] - Loading Control and ChIP Grade (ab220788)

TATA binding protein TBP was immunoprecipitated from 0.35 mg of HeLa (human epithelial cell line from cervix adenocarcinoma) whole cell lysate with ab220788 at 1/30 dilution. Western blot was performed from the immunoprecipitate using ab220788 at 1/1000 dilution. VeriBlot for IP Detection Reagent (HRP) (ab131366), was used for detection at 1/5000 dilution.
**Lane 1:** HeLa whole cell lysate 10 µg (Input).
**Lane 2:** ab220788 IP in HeLa whole cell lysate.
**Lane 3:** Rabbit monoclonal IgG (ab172730) instead of ab220788 in HeLa whole cell lysate.

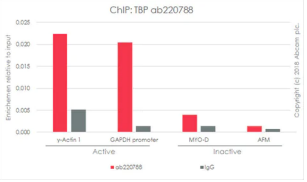
Blocking and dilution buffer and concentration: 5% NFDM/TBST.

Exposure time: 30 seconds.

All lanes:
Immunoprecipitation - Anti-TATA binding protein TBP antibody [EPR21954] - Loading Control and ChIP Grade (ab220788)

Predicted band size: 38 kDa

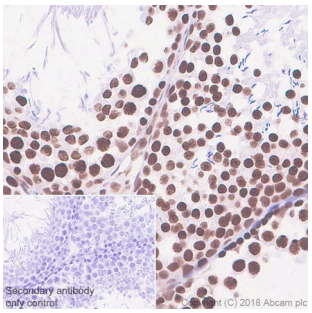
Observed band size: 45 kDa




## ChIP - Anti-TATA binding protein TBP antibody [EPR21954] - Loading Control and ChIP Grade (ab220788)

Chromatin was prepared from HeLa (human epithelial cell line from cervix adenocarcinoma) cells according to the Abcam X-ChIP protocol. The ChIP was performed with 25 µg of chromatin, 5 µg of

ab220788 (red), and 20 µl of Protein A/G sepharose beads. 5 µg of rabbit normal IgG was added to the beads control (gray). The immunoprecipitated DNA was quantified by real time PCR (SYBR green approach).Primers and probes are located in the first kb of the transcribed region.

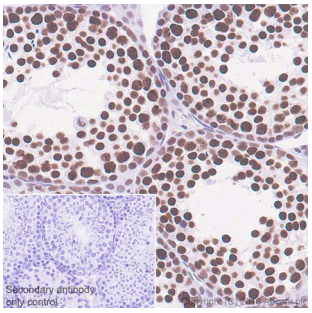



## Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TATA binding protein TBP antibody [EPR21954] - Loading Control and ChIP Grade (ab220788)

TATA binding protein TBP Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-TATA binding protein TBP antibody

Immunohistochemical analysis of paraffin-embedded rat testis tissue labeling TATA binding protein TBP with ab220788 at 1/4000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) ready to use. Nuclear staining in rat testis (PMID: 17570761; PMID: 11861477) is observed. Counter stained with hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) ready to use.

Heat mediated antigen retrieval was performed with citrate buffer pH 6 before commencing with IHC staining protocol.

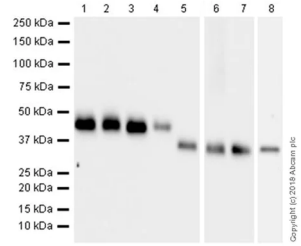



## Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-TATA binding protein TBP antibody [EPR21954] - Loading Control and ChIP Grade (ab220788)

TATA binding protein TBP Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-TATA binding protein TBP antibody

Immunohistochemical analysis of paraffin-embedded mouse testis tissue labeling TATA binding protein TBP with ab220788 at 1/4000 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) ready to use. Nuclear staining in mouse testis (PMID: 17570761; PMID: 11861477) is observed. Counter stained with hematoxylin.
Secondary antibody only control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) ready to use.

Heat mediated antigen retrieval was performed with citrate buffer pH 6 before commencing with IHC staining protocol.




## Western blot - Anti-TATA binding protein TBP antibody [EPR21954] - Loading Control and ChIP Grade (ab220788)

TATA binding protein TBP Western blot staining using rabbit Anti-TATA binding protein TBP antibody

**Exposure times :** Lanes 1-7: 15 seconds, Lane 8: 3 minutes.
Blocking and dilution buffer: 5% NFDM/TBST.

Human TBP migrates with an approximate molecular mass of 45 kDa on SDS-PAGE (PMID:1458534; PMID: 1907890) the molecular mass observed is lower in mouse than in human samples due to a shorter sequence.

All lanes:

Western blot - Anti-TATA binding protein TBP antibody [EPR21954] - Loading Control and ChIP Grade (ab220788) at 1/1000 dilution

Lane 1:
HeLa (human epithelial cell line from cervix adenocarcinoma) whole cell lysate at 20 µg

Lane 2:
HEK-293 (human epithelial cell line from embryonic kidney) whole cell lysate at 20 µg

Lane 3:
HCT 116 (human colorectal carcinoma cell line) whole cell lysate at 20 µg

Lane 4:
MCF7 (human breast adenocarcinoma cell line) whole cell lysate at 20 µg

Lane 5:
C2C12 (mouse myoblast cell line) whole cell lysate at 20 µg

Lane 6:
Mouse testis lysate at 20 µg

Lane 7:
Rat testis lysate at 20 µg

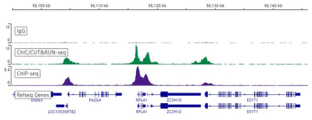
Lane 8:
NIH/3T3 (mouse embryo fibroblast cell line) whole cell lysate at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/100000 dilution

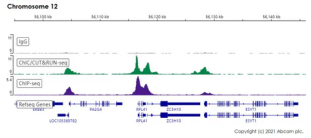
Predicted band size: 38 kDa

Observed band size: 35 kDa, 45 kDa



## ChIC/CUT&RUN sequencing - Anti-TATA binding protein TBP antibody [EPR21954] - Loading Control and ChIP Grade (ab220788)

ChIC/CUT&RUN was performed using a pAG-MNAse at a final concentration of 700 ng/mL, 3 x 10^5 HeLa (Human cervix adenocarcinoma epithelial cell line) cells and 3µg of ab220788 [EPR21954]. The resulting DNA was sequenced on the Illumina NovaSeq 6000 to a depth of 10 million reads. The negative IgG control ab172730 is also shown. The ChIP data was conducted on chromatin prepared from HeLa cells. Cells were fixed with 1% formaldehyde for 10 minutes. ChIP was performed with 30 µg of chromatin and 4 µg of ab220788 with ChIP-Kit Transcription Factors ChIP-Seq (ab270813). ChIP DNA was sequenced on the Illumina NovaSeq 6000 to a depth of 30 million reads. Additional screenshots of mapped reads can be found in the Protocol booklet in the Product Protocol section. The University of Geneva owns patents relevant to ChIC (Chromatin Immuno-Cleavage) methods.



## ChIC/CUT&RUN sequencing - Anti-TATA binding protein TBP antibody [EPR21954] - Loading Control and ChIP Grade (ab220788)

CUT&RUN was performed using a ChIC/CUT&RUN pAG-MNAse, 3x10^5 HeLa cells, and 3µg of ab220788 [EPR21954]. The resulting DNA was sequenced on the NovaSeq 6000 (PE150). Additional screenshots of mapped reads can be downloaded here.

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