abcam

ab818

Anti-TATA binding protein TBP antibody [1TBP18] - Loading Control and ChIP Grade

Anti-TATA binding protein TBP antibody [1TBP18] - ChIP Grade (ab818) is a mouse monoclonal antibody detecting TATA binding protein TBP in **Western Blot, Flow Cytometry, IP, IHC-P, IHC-Fr, ICC/IF, ELISA, EM, ChIP**. Suitable for **Human, Mouse, Rat**.

- Over 260 publications
- Trusted since 2002

Lab Essentials

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	pH: 7.4 Preservative: 0.02% Sodium azide
Form	Liquid
Clonality	Monoclonal
Immunogen	Synthetic Peptide within Human TBP. The exact immunogen used to generate this antibody is proprietary information. Database link P20226
Clone number	1TBP18
Purification technique	Affinity purification Protein G
Epitope	Within amino acid residues 1-20 of human, mouse and rat TBP.The specific epitope for this antibody is accessible when the C-terminal domain of TBP is removed or when TBP is complexed with DNA.
Concentration	0.7 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Purified from TCS

Reactivity data

ChIP

Tested

Species	Human
Dilution info	5-10 µg for 25 µg chromatin
Notes	-

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Not recommended

Species	Saccharomyces cerevisiae, Silk worm, Drosophila melanogaster, Xenopus laevis
Dilution info	-
Notes	-

ChIP/Chip

Expected

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

Not recommended

Species	Saccharomyces cerevisiae, Silk worm, Drosophila melanogaster, Xenopus laevis
Dilution info	-

Notes	-

ICC

Expected

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

Not recommended

Species	Saccharomyces cerevisiae, Silk worm, Drosophila melanogaster, Xenopus laevis
Dilution info	-
Notes	-

IP

Expected

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

Not recommended

Species	Saccharomyces cerevisiae, Silk worm, Drosophila melanogaster, Xenopus laevis
Dilution info	-
Notes	-

Flow Cyt

Tested

Species	Human
Dilution info	1-6 µg for 10^6 Cells

Notes	ab170190 and ab81216 - Mouse monoclonal IgG1, are suitable for use as an isotype control with this antibody. We recommend Goat Anti-Mouse IgG H&L (DyLight® 488) preadsorbed (ab96879) secondary antibody

Not recommended

Species	Drosophila melanogaster
Dilution info	-
Notes	ab170190 and ab81216 - Mouse monoclonal IgG1, are suitable for use as an isotype control with this antibody. We recommend Goat Anti-Mouse IgG H&L (DyLight® 488) preadsorbed (ab96879) secondary antibody

Species	Xenopus laevis
Dilution info	-
Notes	ab170190 and ab81216 - Mouse monoclonal IgG1, are suitable for use as an isotype control with this antibody. We recommend Goat Anti-Mouse IgG H&L (DyLight® 488) preadsorbed (ab96879) secondary antibody

Species	Mouse
Dilution info	-
Notes	-

Species	Rat
Dilution info	-
Notes	-

Species	Saccharomyces cerevisiae
Dilution info	-
Notes	-

Species	Silk worm
Dilution info	-
Notes	-

ELISA

Expected

Species	Mouse
Dilution info	-
Notes	We recommend Rabbit Anti-Mouse IgG H&;L (Alkaline Phosphatase) (ab6729) secondary antibody.

Species	Rat
Dilution info	-
Notes	We recommend Rabbit Anti-Mouse IgG H&;L (Alkaline Phosphatase) (ab6729) secondary antibody.

Species	Human
Dilution info	-
Notes	We recommend Rabbit Anti-Mouse IgG H&;L (Alkaline Phosphatase) (ab6729) secondary antibody.

Not recommended

Species	Saccharomyces cerevisiae
Dilution info	-
Notes	We recommend Rabbit Anti-Mouse IgG H&;L (Alkaline Phosphatase) (ab6729) secondary antibody.

Species	Silk worm
Dilution info	-
Notes	We recommend Rabbit Anti-Mouse IgG H&;L (Alkaline Phosphatase) (ab6729) secondary antibody.

Species	Drosophila melanogaster
Dilution info	-
Notes	We recommend Rabbit Anti-Mouse IgG H&;L (Alkaline Phosphatase) (ab6729) secondary antibody.

Species	Xenopus laevis
Dilution info	-
Notes	We recommend Rabbit Anti-Mouse IgG H&;L (Alkaline Phosphatase) (ab6729) secondary antibody.

WB

Expected

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

Not recommended

Species	Saccharomyces cerevisiae, Silk worm, Drosophila melanogaster, Xenopus laevis
Dilution info	-
Notes	-

IHC-P

Expected

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

Not recommended

Species	Saccharomyces cerevisiae, Silk worm, Drosophila melanogaster, Xenopus laevis
Dilution info	-
Notes	-

ICC/IF

Expected

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

Not recommended

Species	Saccharomyces cerevisiae, Silk worm, Drosophila melanogaster, Xenopus laevis
Dilution info	-
Notes	-

EMSA

Expected

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

Not recommended

Species	Saccharomyces cerevisiae, Silk worm, Drosophila melanogaster, Xenopus laevis
Dilution info	-
Notes	-

IHC-Fr

Expected

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

Not recommended

Species	Saccharomyces cerevisiae, Silk worm, Drosophila melanogaster, Xenopus laevis
Dilution info	-
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	Blue Ice
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

What is this antibody validated in?

Anti-TATA binding protein TBP antibody [1TBP18] - ChIP Grade (ab818) is a mouse monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Flow Cyt), Immunoprecipitation (IP), Immunohistochemistry (IHC-P), Immunohistochemistry (IHC-Fr), Immunocytochemistry/immunofluorescence (ICC/IF), ELISA, Electron microscopy (EM), ChIP in Human, Mouse, Rat samples.

What is the molecular weight of TATA binding protein TBP?
Anti-TATA binding protein TBP [1TBP18] - ChIP Grade (ab818) specifically detects a band for TATA binding protein TBP (UniProt: P20226) at a molecular weight of 38kDa.

Trusted by the scientific community
Anti-TATA binding protein TBP [1TBP18] - ChIP Grade (ab818) was first used in a scientific publication in 2002 and has been cited over 260 times in peer-reviewed journals.

Reviewed by scientists
Anti-TATA binding protein TBP [1TBP18] - ChIP Grade (ab818) has over 35 independent reviews from customers.

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.

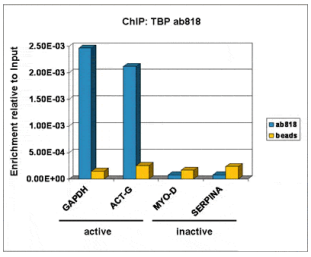
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

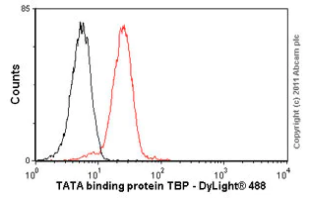
---

5 product images



ChIP - Anti-TATA binding protein TBP antibody [1TBP18] - Loading Control and ChIP Grade (ab818)

Chromatin was prepared from U2OS cells according to the Abcam X-ChIP protocol. Cells were fixed with formaldehyde for 10 min. The ChIP was performed with 25 µg of chromatin, 8 µg of ab818 (blue), and 20 µl of Protein A/G sepharose beads. No antibody was added to the beads control (yellow). The last wash was performed with final wash buffer containing 250 mM NaCl. The immunoprecipitated DNA was quantified by real time PCR (Taqman and sybr green approach). Primers and probes are located in the core promoter region of the genes.
This image was generated using the ascites version of the product.



Flow Cytometry - Anti-TATA binding protein TBP antibody [1TBP18] - Loading Control and ChIP Grade (ab818)

TATA binding protein TBP Flow Cytometry staining using mouse Anti-TATA binding protein TBP antibody

Overlay histogram showing HeLa cells stained with ab818 (red line). The cells were fixed with 100% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. 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 (ab818, 1µg/1x10^6 cells) for 30 min at 22°C. The secondary antibody used was Goat Anti-Mouse IgG H&L (DyLight® 488) preadsorbed (ab96879) secondary antibody at 1/500 dilution for 30 min 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 image was generated using the ascites version of the product.

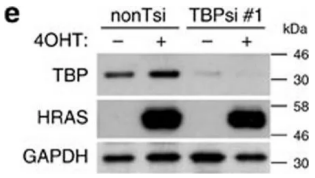


Image collected and cropped by CiteAb under a CC-BY license from the publication

Western blot - Anti-TATA binding protein TBP antibody [1TBP18] - Loading Control and ChIP Grade (ab818)

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

Western Blotting using Anti-TATA binding protein TBP antibody [1TBP18] - ChIP Grade, ab818. Publication image from Gromak, N. et al., 2016, Nat Commun, 27725641. Legend direct from paper.

TBP is an effector in HRASV12-induced replication stress.(a) TBP mRNA quantification by quantitative reverse transcriptase–PCR in BJ-HRASV12 cells 72 h after RAS induction. TBP mRNA levels were normalized to GAPDH and control. (b) Protein levels of TBP and β-ACTIN after RAS induction for the times indicated. (c) Densitometry quantification of TBP levels based on western blotting as in b after RAS induction for the times indicated. Values were normalized to 72 h control. N=3 (24 and 48 h), N=6 (72 h). (d) Twenty-four hours after RAS induction, cells were transfected with TBP siRNA (TBPsi #1) or control siRNA (nonTsi). Cells were processed for DNA fibre analysis or western blotting 48 h later and for 53BP1 staining 24 h later. (e) Protein levels of TBP, HRAS and GAPDH (loading control) 72 h after RAS induction and 48 h after siRNA transfection. (f) Quantification of nascent RNA synthesis by EU incorporation ±TBPsi #1 72 h after RAS induction. N=3. (g) Distribution of replication fork speeds ±TBPsi #1 72 h after RAS induction. N=3. (h) Median replication fork speeds ±TBPsi #1 72 h after RAS induction. N=3. (i) Percentages of cells containing more than eight 53BP1 foci, ±TBPsi #1 96 h after RAS induction. N=3. (j) Median replication fork speeds in cells treated with TBPsi #1 and DRB 72 h after RAS induction, compared with TBPsi #1 or DRB alone. N=3. (k) Percentages of cells treated with TBPsi #1 and DRB containing more than eight 53BP1 foci after 96 h after RAS induction, compared with TBPsi #1 or DRB alone. N=3. (l) Model for the role of TBP in HRASV12-induced replication stress. Means ±s.e.m. (bars) are shown. Student's t-test, *P<0.05, **P<0.01 and ***P<0.001.

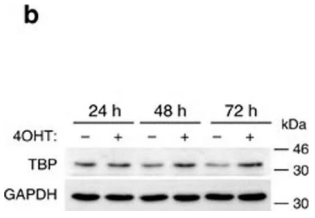


Image collected and cropped by CiteAb under a CC-BY license from the publication

Western blot - Anti-TATA binding protein TBP antibody [1TBP18] - Loading Control and ChIP Grade (ab818)

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

Western Blotting using Anti-TATA binding protein TBP antibody [1TBP18] - ChIP Grade, ab818. Publication image from Gromak, N. et al., 2016, Nat Commun, 27725641. Legend direct from paper.

TBP is an effector in HRASV12-induced replication stress.(a) TBP mRNA quantification by quantitative reverse transcriptase–PCR in BJ-HRASV12 cells 72 h after RAS induction. TBP mRNA levels were normalized to GAPDH and control. (b) Protein levels of TBP and β-ACTIN after RAS induction for the times indicated. (c) Densitometry quantification of TBP levels based on western blotting as in b after RAS induction for the times indicated. Values were normalized to 72 h control. N=3 (24 and 48 h), N=6 (72 h). (d) Twenty-four hours after RAS induction, cells were transfected with TBP siRNA (TBPsi #1) or control siRNA (nonTsi). Cells were processed for DNA fibre analysis or western blotting 48 h later and for 53BP1 staining 24 h later. (e) Protein levels of TBP, HRAS and GAPDH (loading control) 72 h after RAS induction and 48 h after siRNA transfection. (f) Quantification of nascent RNA synthesis by EU incorporation ±TBPsi #1 72 h after RAS induction. N=3. (g) Distribution of replication fork speeds ±TBPsi #1 72 h after RAS induction. N=3. (h) Median replication fork speeds ±TBPsi #1 72 h after RAS induction. N=3. (i) Percentages of cells containing more than eight 53BP1 foci, ±TBPsi #1 96 h after RAS induction. N=3. (j) Median replication fork speeds in cells treated with TBPsi #1 and DRB 72 h after RAS induction, compared with TBPsi #1 or DRB alone. N=3. (k) Percentages of cells treated with TBPsi #1 and DRB containing more than eight 53BP1 foci after 96 h after RAS induction, compared with TBPsi #1 or DRB alone.

N=3. (l) Model for the role of TBP in HRASV12-induced replication stress. Means ±s.e.m. (bars) are shown. Student's t-test, *P<0.05, **P<0.01 and ***P<0.001.

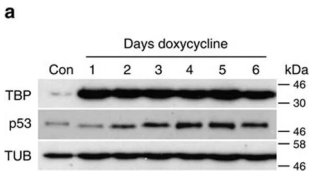


Image collected and cropped by CiteAb under a CC-BY license from the publication

Western blot - Anti-TATA binding protein TBP antibody [1TBP18] - Loading Control and ChIP Grade (ab818)

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

Western Blotting using Anti-TATA binding protein TBP antibody [1TBP18] - ChIP Grade, ab818. Publication image from Gromak, N. et al., 2016, Nat Commun, 27725641. Legend direct from paper.

TBP overexpression causes replication stress and senescence.(a) Protein levels of TBP, p53 and TUBULIN (loading control) in BJ-TBPind cells treated with doxycycline for 1–6 days, to induce TBP overexpression. No doxycycline was used as a control. (b) Nascent RNA synthesis as measured by EU incorporation after TBP induction for 3 days. Scale bars, 10 µm. (c). Quantification of nuclear EU intensity after TBP induction for 1–4 days. N=4 (con, day 1, 2 and 4), N=5 (day 3). (d) Median replication fork speeds in after TBP induction. N=2 (day 1, 2 and 4), N=4 (con, day 3). Asterisks compare with control. (e) Nascent RNA synthesis as measured by EU incorporation in cells treated with DRB or dimethylsulfoxide (DMSO) (control) for 100 min, 72 h after TBP induction. N=3. (f) Median replication fork speeds in BJ-TBPind cells treated with DRB 72 h after TBP induction. N=3. (g). Percentage of cells displaying more than eight 53BP1 foci or micronuclei after TBP induction. Right panel: representative images of cells with 53BP1 foci and micronuclei. Asterisks compare with control. N=2–7. (h) Cell cycle distribution of 53BP1-positive cells 96 h after TBP induction as determined by co-staining with Cyclin A. N=2. (i) Representative images and percentages of β-galactosidase staining after TBP induction for 1–6 days. Scale bars, 100 µm. (j) Model of how HRASV12 and other growth factor oncogenes such as epidermal growth factor receptor (EGFR) induce replication stress by increasing transcription through TBP and other transcription factors. Additional mechanisms, such as reactive oxygen species, may also contribute to HRASV12-induced DNA damage. Means ±s.e.m. (bars) are shown. Student's t-test, *P<0.05, **P<0.01 and ***P<0.001.

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