10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

XPB Polyclonal Antibody

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP58140

Product Information

Application	IHC-P, IHC-F, IF, E
Primary Accession	P19447
Reactivity	Rat, Pig, Dog, Bovine
Host	Rabbit
Clonality	Polyclonal
Calculated MW	89278
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human XPB/ERCC3
Epitope Specificity	601-700/782
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Belongs to the helicase family. RAD25/XPB subfamily. Contains 1 helicase ATP-binding domain. Contains 1 helicase C-terminal domain.
DISEASE	Defects in ERCC3 are the cause of xeroderma pigmentosum complementation group B (XP-B) [MIM:610651]; also known as xeroderma pigmentosum II (XP2) or XP group B (XPB) or xeroderma pigmentosum group B combined with Cockayne syndrome (XP-B/CS). Xeroderma pigmentosum is an autosomal recessive pigmentary skin disorder characterized by solar hypersensitivity of the skin, high predisposition for developing cancers on areas exposed to sunlight and, in some cases, neurological abnormalities. Some XP-B patients present features of Cockayne syndrome, including dwarfism, sensorineural deafness, microcephaly, mental retardation, pigmentary retinopathy, ataxia, decreased nerve conduction velocities. Defects in ERCC3 are a cause of trichothiodystrophy photosensitive (TTDP) [MIM:601675]. TTDP is an autosomal recessive disease characterized by sulfur-deficient brittle hair and nails, ichthyosis, mental retardation, impaired sexual development, abnormal facies and cutaneous photosensitivity correlated with a nucleotide excision repair (NER) defect. Neonates with trichothiodystrophy and ichthyosis are usually born with a collodion membrane. The severity of the ichthyosis after the membrane is shed is variable, ranging from a mild to severe lamellar ichthyotic phenotype. There are no reports of skin cancer associated with TTDP.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	Initiation of transcription from protein-coding genes in eukaryotes is a complex process that requires RNA polymerase II, as well as families of basal transcription factors. Binding of the factor TFIID (TBP) to the TATA box is believed to be the first step in the formation of a multiprotein complex containing several additional factors, including TFIIA, TFIIB, TFIIE, TFIIF and TFIIH. TFIIH (or BTF2) is a multisubunit transcription/DNA repair factor that possesses several enzymatic activities. The core of TFIIH is composed of 5 subunits, designated p89 (XPB or ERCC3), p62, p52, p44 and p34. Additional

subunits of the TFIIH complex are p80 (XPD or ERCC2) and the ternary kinase complex composed of Cdk7, cyclin H and MAT1. Both p89 and p80 have ATP-dependent helicase activity. The p62, p52 and p44 subunits have been shown to be involved in nucleotide excision repair.

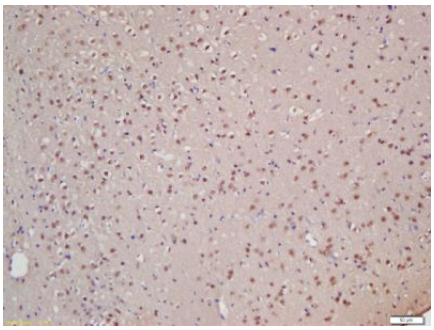
Additional Information

Gene ID	2071
Other Names	General transcription and DNA repair factor IIH helicase subunit XPB, TFIIH subunit XPB, 3.6.4.12, Basic transcription factor 2 89 kDa subunit, BTF2 p89, DNA excision repair protein ERCC-3, DNA repair protein complementing XP-B cells, TFIIH basal transcription factor complex 89 kDa subunit, TFIIH 89 kDa subunit, TFIIH p89, Xeroderma pigmentosum group B-complementing protein, ERCC3, XPB, XPBC
Dilution	IHC-P=1:100-500,IHC-F=1:100-500,IF=1:100-500,ELISA=1:5000-10000
Format	0.01M TBS(pH7.4) with 1% BSA, 0.09% (W/V) sodium azide and 50% Glyce
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

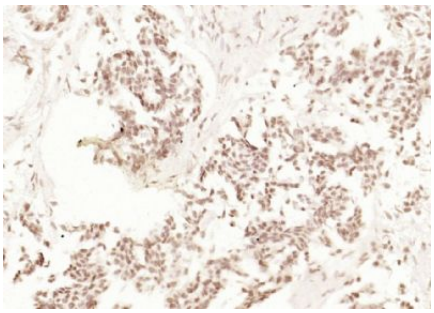
Protein Information

Name	ERCC3 {ECO:0000303|PubMed:2111438}
Function	ATP-dependent 3'-5' DNA helicase/translocase (PubMed: 17466626, PubMed:27193682, PubMed:33902107, PubMed:8465201, PubMed:8663148). Binds dsDNA rather than ssDNA, unzipping it in a translocase rather than classical helicase activity (PubMed:27193682, PubMed:33902107). Component of the general transcription and DNA repair factor IIH (TFIIH) core complex (PubMed:10024882, PubMed:17466626, PubMed:8157004, PubMed:8465201). When complexed to CDK-activating kinase (CAK), involved in RNA transcription by RNA polymerase II. The ATPase activity of XPB/ERCC3, but not its helicase activity, is required for DNA opening; it may wrap around the damaged DNA wedging it open, causing localized melting that allows XPD/ERCC2 helicase to anchor (PubMed:10024882, PubMed:17466626). In transcription, TFIIH has an essential role in transcription initiation (PubMed:30894545, PubMed:8157004). When the pre-initiation complex (PIC) has been established, TFIIH is required for promoter opening and promoter escape (PubMed:8157004). The ATP-dependent helicase activity of XPB/ERCC3 is required for promoter opening and promoter escape (PubMed:10024882). In transcription pre-initiation complexes induces and propagates a DNA twist to open DNA (PubMed:27193682, PubMed:33902107). Also involved in transcription-coupled nucleotide excision repair (NER) of damaged DNA (PubMed:17466626, PubMed:2111438, PubMed:8157004). In NER, TFIIH acts by opening DNA around the lesion to allow the excision of the damaged oligonucleotide and its replacement by a new DNA fragment. The structure of the TFIIH transcription complex differs from the NER-TFIIH complex; large movements by XPD/ERCC2 and XPB/ERCC3 are stabilized by XPA (PubMed:31253769, PubMed:33902107). XPA retains XPB/ERCC3 at the 5' end of a DNA bubble (mimicking DNA damage) (PubMed:31253769).
Cellular Location	Nucleus.

Images



Tissue/cell: rat brain tissue; 4% Paraformaldehyde-fixed and paraffin-embedded;
Antigen retrieval: citrate buffer (0.01M, pH 6.0), Boiling bathing for 15min; Block endogenous peroxidase by 3% Hydrogen peroxide for 30min; Blocking buffer (normal goat serum,C-0005) at 37℃ for 20 min;
Incubation: Anti-XPB Polyclonal Antibody, Unconjugated(AP58140) 1:200, overnight at 4°C, followed by conjugation to the secondary antibody(SP-0023) and DAB(C-0010) staining



Paraformaldehyde-fixed, paraffin embedded (human gastric carcinoma); Antigen retrieval by boiling in sodium citrate buffer (pH6.0) for 15min; Block endogenous peroxidase by 3% hydrogen peroxide for 20 minutes; Blocking buffer (normal goat serum) at 37°C for 30min; Antibody incubation with (XPB) Polyclonal Antibody, Unconjugated (AP58140) at 1:200 overnight at 4°C, followed by operating according to SP Kit(Rabbit) (sp-0023) instructionsand DAB staining.

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