Anti-DNA polymerase η antibody, mouse monoclonal (5H10)

70-071 100 μg

Shipping and Storage: Shipped at 4℃ or -20℃ and store at -20℃

Immunogen: Human recombinant full-size Pol eta tagged with His6.

Form: 1 mg/ml in PBS- with 50% glycerol. Filter-sterilized. Azide- and carrier protein-free.

Purity: Produced in serum-free medium by mouse hybridoma clone 5H10 and purified by salting-out and ion-exchange chromatography processes under mild conditions. 90~95% as judged from SDS-PAGE

Isotype: Mouse IgG1 κ

Reactivity: Human Pol η protein. Not tested in other species

Applications: 1. Western blot. (1/500~1/2,000 dilution)

2. Immunofluorescence staining (1/200~1/1,000 dilution)

Not tested for other application

Key Words: DNA polymerase eta, *POLH,* Y-family DNA polymerase, Xerderma pigmentosum variant type (XPV), Translesion DNA synthesis, Error-prone DNA polymerase, UV-sensitive, DNA damage tolerance, Skin cancer

Background: DNA polymerase eta (713 aa, 78 kDa) is specifically involved in DNA repair. Plays an important role in translesion synthesis, where the normal high fidelity DNA polymerases cannot proceed and DNA synthesis stalls. Plays an important role in the repair of UV-induced pyrimidine dimers. Depending on the context, it inserts the correct base, but causes frequent base transitions and transversions. May play a role in hypermutation at immunoglobulin genes. Forms a Schiff base with 5'-deoxyribose phosphate at abasic sites, but does not have lyase activity. Targets POLI (Pol iota) to replication foci.

Involvement in disease: Xeroderma pigmentosum variant type (XPV) [MIM:278750]: 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. XPV shows normal nucleotide excision repair, but an exaggerated delay in recovery of replicative DNA synthesis. Most patients with the variant type of xeroderma pigmentosum do not develop clinical symptoms and skin neoplasias until a later age. Clinical manifestations are limited to photo-induced deterioration of the skin and eyes.

Data links: SwissProt: Q9Y253 Human

Entrez Gene: 5429 Human

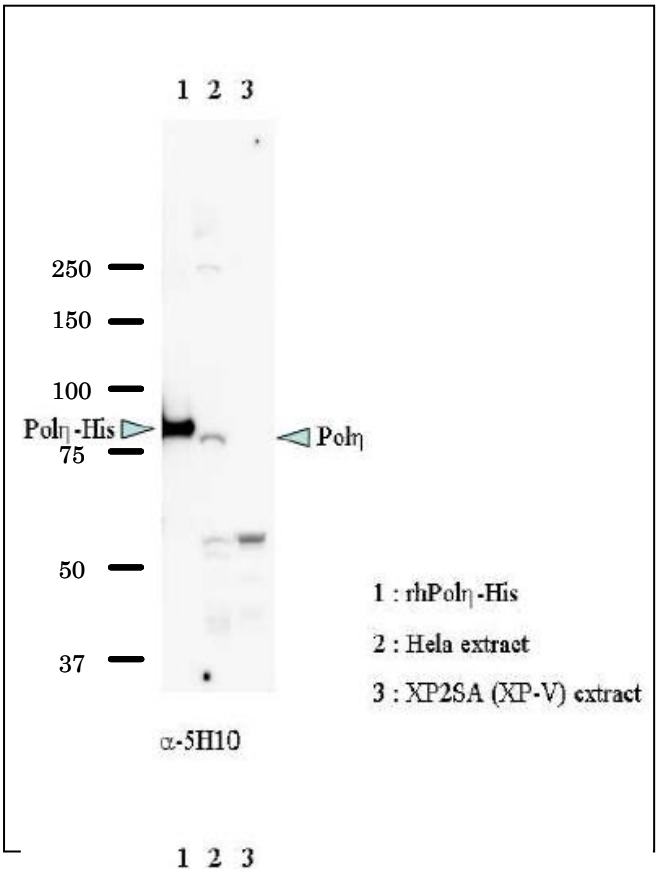

Fig. 1. Identification of Pol eta in whole cell extract of HeLa cells by western blot with anti-Pol eta antibody (5H10).

Lane 1; Recombinant full-size Pol eta with His6 tag at C-teminus. Positive control.

Lnae 2; Whole cell extract of HeLa cells. ~40 ug protein applied. Positive control

Lane 3; Whole cell extract of XP2SA (XP-V) cells. ~40 ug protein applied. Negative control

PoL eta is detected at ~80 kDa position. 8% gel was used.

Data by courtesy of Prof. F. Hanaoka and Prof. C. Masutani at Osaka University.

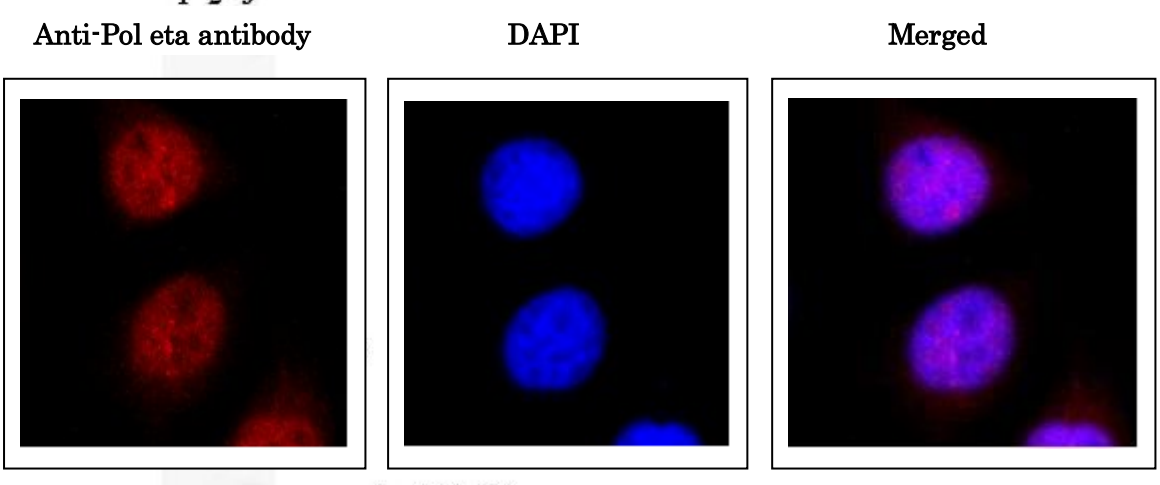

Fig.2. Immunofluorescence staining of DNA polymerase eta in HeLa cells with anti Pol eta antibody.

HeLa cells were fixed in 4% paraformaldehyde overnight and permeabilized in 0.25% TritonX 100 in PBS for 10 min. anti-Pol eta antibody was used at 1/1,000 dilution.