

E.coli DNA Photolyase (Cyclobutane Pyrimidine Dimer Photolyase)

01-013 20 µg

Shipping and Storage: Ship at 4°C or -20°C and store at -20°C. Do not repeat freeze-thaw cycle

Product: Purified recombinant full-size E. coli Photolyase (Deoxyribodipyrimidine photo-lyase) as described in Sancar A, Smith FW, Sancar GB. Purification of Escherichia coli DNA photolyase [J Biol Chem.](#) 1984 May 10;259(9):6028-32. PMID: [6325459](#)

Applications:

1. SDS-PAGE
2. Western blot
3. Immunoprecipitation
4. ELISA
5. Functional Studies

Form: 0.4 mg/ml in 50 mM KCl, 25 mM Tris-HCl, pH 7.4, 0.5 mM EDTA, 5 mM β-mercaptoethanol, 50% Glycerol.

Background: Involved in repair of UV radiation-induced DNA damage. Catalyzes the light-dependent monomerization (300-600 nm) of cyclobutyl pyrimidine dimers (in cis-syn configuration), which are formed between adjacent bases on the same DNA strand upon exposure to ultraviolet radiation. Upon absorption of visible light electrons are transferred from Trp-307 through Trp-360 to Trp 383, and from there to FADH, giving rise to the fully reduced catalytic FADH⁻. Length:472 aa. Mass (Da):53,667

Data Link: UniProtKB [P00914](#) (PHR_ECOLI)

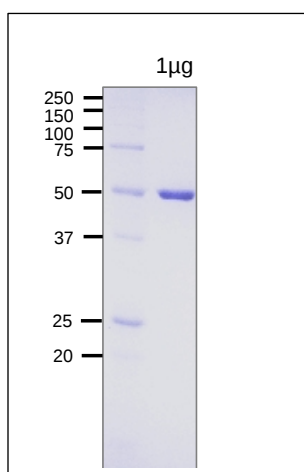


Fig 1. SDS-PAGE analysis of E. coli Photolyase

One µg of Photolyase was applied and analyzed on 12% SDS-PAEG.

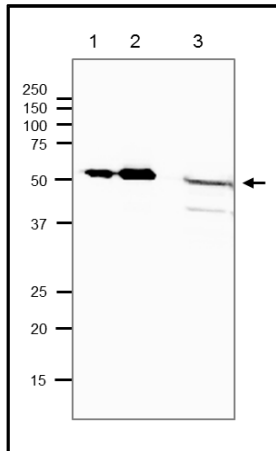


Fig.2 Western blot of *E. coli* photolyase

Samples

1. Purified Photolyase 8.4 ng
2. Purified Photolyase 42 ng
3. *E. coli* crude lysate

SDS-PAGE 12.5% gel

Blotting: 15 v, overnight, Blocking by 5% skim milk

Anti-Photolyase antibody used at 1/1,000 dilution.

2nd antibody: Goat anti-rabbit IgG (H & L) (ab97051) used at 1/10,000.

Note that there are only 10-20 molecules of photolyase per *E. coli* cell.

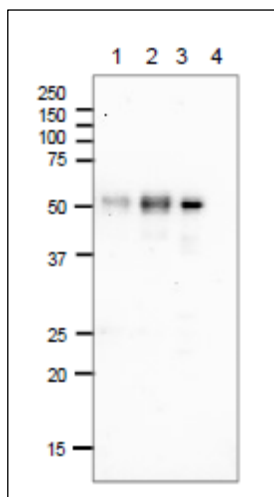


Fig 3 Immunoprecipitation of *E. coli* Photolyase

Immunoprecipitation was performed by using Dynabeads Magnetic system (Thermo Fisher).

1. *E. coli* AB1157 cell lysate (300 μ g), antibody 2 μ g
2. *E. coli* AB1157 cell lysate (300 μ g), antibody 10 μ g
3. Positive control: *E. coli* Photolyase purified, 4.2 μ g, antibody 10 μ g
4. Negative control: No sample, antibody 10 μ g

Western blot: Anti-Photolyase antibody used at 1/1,000 dilution and as the second antibody, HRP-conjugated goat anti-rabbit IgG VeriBlot for IP (ab131366) was used at 1/1,000 dilution.

Related Product: 61-013 Anti- Cyclobutane Pyrimidine Dimer Photolyase (*E. coli*) antibody