

UDG (P-14): sc-14569

BACKGROUND

When misincorporation or cytosine deamination positions the RNA nucleotide uracil into DNA, Uracil-DNA glycosylase (UDG) excises the uracil via a repair enzymatic pathway. UDG excises uracil by cleaving the N-C1' glycosylic bond between the base and deoxyribose in both single- and double-stranded DNA. While initiating the first steps of DNA repair, UDG undergoes a conformational change from the "open" unbound state to the "closed" DNA-bound state, creating a catalytic center. The bound UDG effectively flips the uridine nucleotide into the catalytic center and cleaves the glycosylic bond to excise the uracil. The open-to-closed conformation change is centered on a B-zipper in the UDG. UDG alters the orientation electron orbitals to favor electron transpositions, thus taking advantage of conformational strain to catapult the cleavage of the glycosylic bond. Two isoforms of UDG have been characterized, UDG1 and UDG1A. The UDG1 isoform localizes to the mitochondria. UDG1A is a processed isoform containing a unique 44 residue amino terminus which localizes this isoform to the nucleus. The gene encoding for human UDG maps to chromosome 12q24.11.

REFERENCES

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4. Parikh, S.S., et al. 1997. Base excision repair enzyme family portrait: integrating the structure and chemistry of an entire DNA repair pathway. *Structure* 5: 1543-1550.
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CHROMOSOMAL LOCATION

Genetic locus: UNG (human) mapping to 12q24.11; Ung (mouse) mapping to 5 F.

SOURCE

UDG (P-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of UDG of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-14569 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

UDG (P-14) is recommended for detection of UDG1 and UDG1A of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for UDG siRNA (h): sc-37803, UDG siRNA (m): sc-37804, UDG shRNA Plasmid (h): sc-37803-SH, UDG shRNA Plasmid (m): sc-37804-SH, UDG shRNA (h) Lentiviral Particles: sc-37803-V and UDG shRNA (m) Lentiviral Particles: sc-37804-V.

Molecular Weight of UDG: 34 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, JAR cell lysate: sc-2276 or Hs68 cell lysate: sc-2230.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.



Try **UDG (B-7): sc-390255** or **UDG (k1C12): sc-73639**, our highly recommended monoclonal alternatives to UDG (P-14).