

UDG (FL-313): sc-28719

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, UDG1 and UDG1A, have been characterized. 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.

CHROMOSOMAL LOCATION

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

SOURCE

UDG (FL-313) is a rabbit polyclonal antibody raised against amino acids 67-313 mapping at the C-terminus 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.

STORAGE

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

APPLICATIONS

UDG (FL-313) is recommended for detection of UDG isoforms 1 and 2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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).

UDG (FL-313) is also recommended for detection of UDG isoforms 1 and 2 in additional species, including porcine.

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.

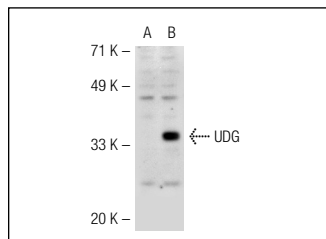
Molecular Weight of UDG: 34 kDa.

Positive Controls: UDG (h): 293 Lysate: sc-113213, HeLa whole cell lysate: sc-2200 or Hs68 cell lysate: sc-2230.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



UDG (FL-313): sc-28719. Western blot analysis of UDG expression in non-transfected: sc-110760 (A) and human UDG transfected: sc-113213 (B) 293 whole cell lysate.

SELECT PRODUCT CITATIONS

- Gredilla, R., et al. 2012. Mitochondrial base excision repair in mouse synaptosomes during normal aging and in a model of Alzheimer's disease. *Neurobiol. Aging* 33: 694-707.

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 (FL-313).