SANTA CRUZ BIOTECHNOLOGY, INC.

APNG (3D1): sc-101237

BACKGROUND

Maintenance of DNA sequences is necessary for vertebrates and other life. DNA is under constant stress by a plethora of DNA-damaging agents present in both the environment and within cells. The potentially deleterious effects of DNA lesions in cells are elegantly resolved by sophisticated DNA repair systems, including base excision repair (BER), nucleotide excision repair (NER) and DNA repair methyltransferase (MTase). Methylated bases, such as 3-methyladenine (3MeA) and 7-methylguanine (7MeG) can be formed by agents in the environment and by endogenous cellular processes. Consequently, in the absence of exposure to environmental agents, DNA methylation damage can be incurred on the genomic DNA of normal mammalian cells. DNA N-glycosylases are base excision-repair proteins that locate and cleave damaged bases from DNA as the first step in restoring the sequence. 3MeA DNA glycosylases initiate base excision repair by removing 3MeA. These glycosylases also remove a broad spectrum of spontaneous and environmentally induced base lesions. The human N-methylpurine-DNA glycosylase gene maps to chromosome 16p13.3 and encodes a 298 amino acid protein, known as APNG.

REFERENCES

1. O'Connor, T.R. 1993. Purification and characterization of human 3-methyladenine-DNA glycosylase. Nucleic Acids Res. 21: 5561-5569.
2. Friedberg, E.C., et al. 1995. DNA Repair and Mutagenesis. Washington, DC: ASM Press.

CHROMOSOMAL LOCATION

Genetic locus: MPG (human) mapping to 16p13.3.

SOURCE

APNG (3D1) is a mouse monoclonal antibody raised against recombinant APNG of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

APNG (3D1) is recommended for detection of APNG of 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), immunohistochemistry (including paraffin-embedded sections) (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 APNG siRNA (h): sc-37390, APNG shRNA Plasmid (h): sc-37390-SH and APNG shRNA (h) Lentiviral Particles: sc-37390-V.

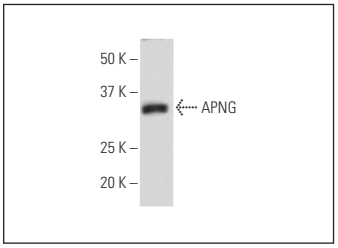
Molecular Weight of APNG: 33 kDa.

Positive Controls: HeLa nuclear extract: sc-2120.

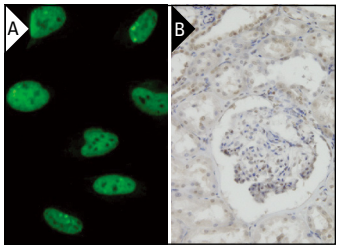
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



APNG (3D1): sc-101237. Western blot analysis of APNG expression in HeLa nuclear extract.



APNG (3D1): sc-101237. Immunofluorescence staining of paraformaldehyde-fixed HeLa cells showing nuclear localization (**A**). Immunoperoxidase staining of formalin-fixed, paraffin-embedded human kidney tissue showing nuclear localization (**B**).

SELECT PRODUCT CITATIONS

1. Agnihotri, S., et al. 2011. A GATA4-regulated tumor suppressor network represses formation of malignant human astrocytomas. J. Exp. Med. 208: 689-702.
2. Agnihotri, S., et al. 2012. Alkylpurine-DNA-N-glycosylase confers resistance to temozolomide in xenograft models of glioblastoma multiforme and is associated with poor survival in patients. J. Clin. Invest. 122: 253-266.
3. van Loon, B. and Samson, L.D. 2013. Alkyladenine DNA glycosylase (AAG) localizes to mitochondria and interacts with mitochondrial single-stranded binding protein (mtSSB). DNA Repair 12: 177-187.
4. Shao, H., et al. 2015. Chip-based analysis of exosomal mRNA mediating drug resistance in glioblastoma. Nat. Commun. 6: 6999.

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 for detailed protocols and support products.