

PRODUCT DATA SHEET

Product: Anti-Thymine Dimer mAb, clone KTM53

Cat. No.: MC-062 (100 µg)

Synonyms:

Cyclobutane pyrimidine dimer (CPD)

Specificity:

Reacts specifically with thymine dimers produced by UV irradiation in double- or single-stranded DNA. Does not react with (6-4) photo products.

Ig Isotype:

Mouse IgG₁

Immunogen:

UV-irradiated salmon sperm DNA

Hybridoma:

Mouse myeloma (P3/X63-Ag8) x immunized mouse (Balb/c) splenocytes.

Format:

200 µL of 0.5 mg/mL purified monoclonal antibody in PBS with protein stabilizer and 0.1% sodium azide. Purified by Protein A chromatography.

Storage:

Store at 4°C for short term, store at -20°C for long term. Avoid repeat freeze/thaw cycles.

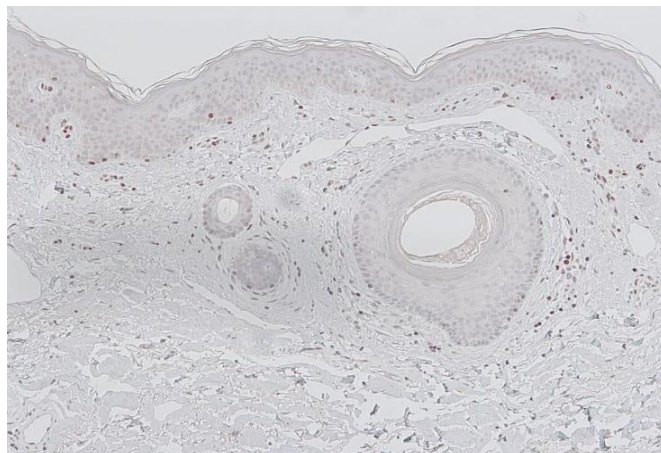
Applications and Suggested Dilutions:

- *In situ* hybridization: Use at a 1:40 to 1:80 dilution. The dilution factor depends on the application. Frozen sections of fixed tissue or formalin-fixed, paraffin-embedded sections are recommended. (Published by end-users.)
- DNA blotting: For the detection of thymine dimers in UV-damaged DNA and thymine-dimerized DNA probes. (Published by end-users.)
- Immunohistochemistry: Published and confirmed by KAMIYA BIOMEDICAL COMPANY.
- Immunocytochemistry: Published by end-users, protocol available.
- ELISA: Published by end-users, protocol available.
- Immunoprecipitation: Published by end-users.
- Immunofluorescent staining: Published by end-users.

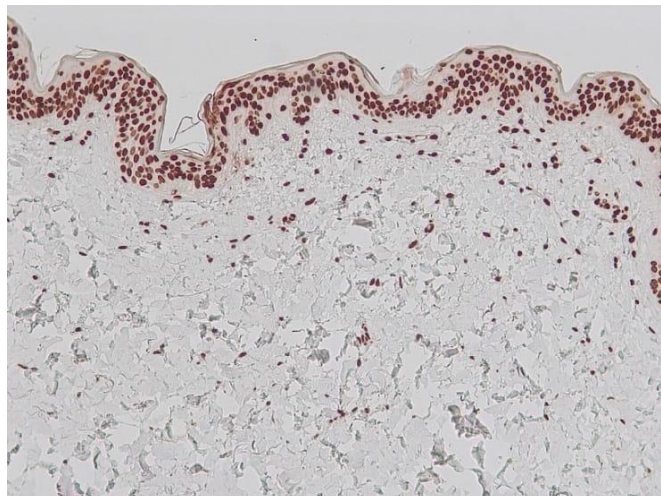
The optimal dilution for a specific application should be determined by the researcher.

Example Data:

Immunohistochemical staining on untreated human skin.



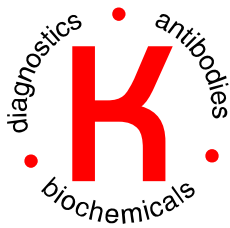
Immunohistochemical staining on UVB-irradiated human skin.



For *in vitro* research use only. Not for use in diagnostics or in humans.

Warranty:

No warranties, expressed or implied, are made regarding the use of this product. KAMIYA BIOMEDICAL COMPANY is not liable for any damage, personal injury, or economic loss caused by this product.



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Selected References:

In situ Hybridization

Razzaque, M. *et al.* In situ localization of Type III and Type IV Collagen-expressing cells in human diabetic nephropathy. *Journal of Pathology*, 174: 131-138 (1994)

DNA Blotting

Eller MS. *et al.* Enhancement of DNA repair in human skin cells by thymidine dinucleotides: Evidence for a p53-mediated mammalian SOS response. *Proc. Natl. Acad. Sci USA* 94: 12627-12632 (1997)

Goukassian D. *et al.* FASEB J. DNA oligonucleotide treatment corrects the age associated decline in DNA repair capacity. 16: 754-756 (2002)

Belanger, F. *et al.* Mutations in replicative stress response pathways are associated with S phase-specific defects in nucleotide excision repair. *Journal Biological Chemistry*. 291(2): 522-537 (January 8, 2016)

Xiang, Y. *et al.* m⁶A RNA methylation regulates the UV-induced DNA damage response. *Nature*. 543(7646): 573-576 (March 23, 2017)

Immunohistochemistry / Immunocytochemistry

Katiyar S. *et al.* Kinetics of UV light-induced cyclobutane pyrimidine dimers in human skin in vivo: An immunohistochemical analysis of both epidermis and dermis. *Photochemistry and Photobiology* 72: 788-793 (2000)

Peccia J. *et al.* Rapid immunoassays for detection of UV-induced cyclobutane pyrimidine dimers in whole bacterial cells. *Applied and Environmental Microbiology* 68: 2542-2549 (2002)

Rubbi CP. and Milner J. P53 is a chromatin accessibility factor for nucleotide excision repair of DNA damage. *EMBO J* 22: 975-86 (2003)

ELISA

Berardesca, E. *et al.* Reduced ultraviolet-induced DNA damage and apoptosis in human skin with topical application of a photolyase-containing DNA repair enzyme cream: Clue to skin cancer prevention. *Molecular Medicine Reports*. 5: 570-574 (2012)

Immunoprecipitation

Hu, J. *et al.* Genome-wide analysis of human global and transcription-coupled excision repair of UV damage at single-nucleotide resolution. *Genes & Development*. 29: 948-960 (May 2015)

Immunofluorescent Staining

Rubbi, C. and Jo Milner. p53 is a chromatin accessibility factor for nucleotide excision repair of DNA damage. *The EMBO Journal*. 22(4): 975-986 (2003)

Cruz, GMS. Femtosecond near-infrared laser microirradiation reveals a crucial role for PARP signaling on factor assemblies at DNA damage sites. *Nucleic Acids Research*. 44(3) (2016)