

AM26349PU-N**Monoclonal Antibody to BPDE-DNA - Purified**

Quantity:	0.1 mg
Concentration:	0.1 mg/ml
Background:	A number of chemicals, including polycyclic aromatic hydrocarbons (PAHs), have been shown to bind to DNA. This DNA damage can occur both early and late in the malignant process, thereby acting as an initiator and assisting in the progression of tumors. PAHs are released into the environment following incomplete combustion of organic materials. The most common sources of PAHs are from smoking and from consuming broiled or grilled foods. Human exposure to PAHs comes from various occupational, environmental, dietary and medicinal sources. Benzo[a]pyrene is a representative PAH. Antibodies to benzo[a]pyrenediol-epoxide modified DNA (BPDE-DNA) can be used to identify polycyclic aromatic hydrocarbon (PAH)-DNA adducts. Exposure to this group of compounds is believed to be carcinogenic.
Host / Isotype:	Mouse / IgG2a
Recommended Isotype Controls:	AM03096PU-N
Clone:	5D11
Immunogen:	BPDE-I-DNA complexed with methylated BSA
Format:	State: Liquid 0.2 µm filtered Ig fraction Purification: Protein G Buffer System: PBS Preservatives: 0.02% sodium azide Stabilizers: 0.1% bovine serum albumin
Applications:	Flow cytometry (8): Washed sperm was fixed in 2% paraformaldehyde and permeabilized with 0.2% triton x-100/0.1% sodium citrate. Samples were treated with protK and RNase. To denature DNA samples were incubated with 4n HCl. After blocking with 5% normal serum samples were incubated with mAb. Immunoassays (4,7): Plates were coated with 50 ng/well BPDE-DNA in 50mM Tris-buffer pH7.5 o/n at 4°C. Plates were blocked 1% FCS. DNA samples, 4µg, were mixed with 5D11 and added to the well. Detection with GtaMs-IgG-AP for 90'at 37°C. Immunofluorescence (8). Immunoprecipitation (10). Immunohistochemistry on paraffin sections (2,3,5,6,9): 5 µm sections were RNase and prot-K treated. DNA was denatured with 4N HCl and neutralized with 50mM Tris base. Section was blocked with 1.5% normal horse serum: The typical starting working dilution is 1:10. Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.
Specificity:	The monoclonal antibody 5D11 recognizes BPDE-I-DNA (PAH-DNA).

Storage: Store at 2 - 8 °C.
Shelf life: one year from despatch.

General Readings:

1. Santella, R et al; Monoclonal antibodies to DNA modified by benzo[a]pyrene diol epoxide. *Carcinogenesis* 1984, 5: 373.
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3. Rybicki BA, Rundle A, Saveria AT, Sankey SS, Tang D. Polycyclic aromatic hydrocarbon-DNA adducts in prostate cancer. *Cancer Res*. 2004 Dec 15;64(24):8854-9. PubMed PMID: 15604244.
4. Maissonnette C, Simon P, Hennion MC, Pichon V. Selective immunoclean-up followed by liquid chromatography for the monitoring of a biomarker of exposure to polycyclic aromatic hydrocarbons in urine at the ng l-1 level. *J Chromatogr A*. 2006 Jul 7;1120(1-2):185-93. Epub 2006 Jan 18. PubMed PMID: 16414055.
5. Jurisicova A, Taniuchi A, Li H, Shang Y, Antenos M, Detmar J, et al. Maternal exposure to polycyclic aromatic hydrocarbons diminishes murine ovarian reserve via induction of Harakiri. *J Clin Invest*. 2007 Dec;117(12):3971-8. PubMed PMID: 18037991.
6. Shinmura K, Iwaizumi M, Igarashi H, Nagura K, Yamada H, Suzuki M, et al. Induction of centrosome amplification and chromosome instability in p53-deficient lung cancer cells exposed to benzo[a]pyrene diol epoxide (B[a]PDE). *J Pathol*. 2008 Nov;216(3):365-74. doi: 10.1002/path.2422. PubMed PMID: 18788085.
7. Chen, K et al; Modulation of benzo[a]pyrene-induced DNA adduct, cyclin D1 and PCNA in oral tissue by 1,4-phenylenebis(methylene)selenocyanate. *BBRC* 2009, 383:151.
8. Ji G, Gu A, Zhou Y, Shi X, Xia Y, Long Y, et al. Interactions between exposure to environmental polycyclic aromatic hydrocarbons and DNA repair gene polymorphisms on bulky DNA adducts in human sperm. *PLoS One*. 2010 Oct 5;5(10). pii: e13145. doi: 10.1371/journal.pone.0013145. PubMed PMID: 20957144.
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10. Ye F, Xu XC. Benzo[a]pyrene diol epoxide suppresses retinoic acid receptor-beta2 expression by recruiting DNA (cytosine-5-)-methyltransferase 3A. *Mol Cancer*. 2010 Apr 28;9:93. doi: 10.1186/1476-4598-9-93. PubMed PMID: 20426865.