



# Benzo[a]pyrene (BAP-13): sc-51508

## BACKGROUND

Polynuclear aromatic hydrocarbons or polycyclic aromatic hydrocarbons (PAHs) are contain multiple benzene rings. They are generally found as components of fuels, oils and greases. Benzo[a]pyrene is a five-ring polycyclic aromatic hydrocarbon that is mutagenic and highly carcinogenic. It is a crystalline yellow solid. It is a product of incomplete combustion at temperatures between 300 and 600°C. Is found in coal tar, in automobile exhaust fumes (especially from diesel engines), tobacco smoke and in charbroiled food.

## REFERENCES

1. Scharnweber, T., et al. 2001. Monoclonal antibody to polycyclic aromatic hydrocarbons based on a new Benzo[a]pyrene immunogen. *Fresenius J. Anal. Chem.* 371: 578-585.
2. Suchanek, M., et al. 2001. Monoclonal antibodies specific to polynuclear aromatic hydrocarbons. *Folia Biol.* 47: 106-107.
3. Sittisombut, C., et al. 2006. Synthesis and cytotoxic activity of benzo[a]pyrano[3,2-h] and [2,3-i]xanthone analogues of psorospermine, acronycine, and benzo[a]acronycine. *Chem. Pharm. Bull.* 54: 1113-1118.
4. Gong, Z., et al. 2006. Benzo[a]pyrene inhibits expression of inducible heat shock protein 70 in vascular endothelial cells. *Toxicol. Lett.* 166: 229-236.
5. Hasei, T., et al. 2006. Determination of 3,6-dinitrobenzo[e]pyrene in surface soil and airborne particles by high-performance liquid chromatography with fluorescence detection. *J. Chromatogr. A* 1135: 65-70.
6. Hockley, S.L., et al. 2006. Time- and concentration-dependent changes in gene expression induced by Benzo[a]pyrene in two human cell lines, MCF7 and Hep G2. *BMC Genomics* 7: 260.
7. Park, S.Y., et al. 2006. Benzo[a]pyrene-induced DNA damage and p53 modulation in human hepatoma Hep G2 cells for the identification of potential biomarkers for PAH monitoring and risk assessment. *Toxicol. Lett.* 167: 27-33.
8. Sagredo, C., et al. 2006. Quantitative analysis of Benzo[a]pyrene biotransformation and adduct formation in Ahr knockout mice. *Toxicol. Lett.* 167: 173-182.
9. Yuen, B.B. and Au, D.W. 2006. Temporal changes of ethoxyresorufin-o-deethylase (EROD) activities and lysosome accumulation in intestine of fish on chronic exposure to dietary Benzo[a]pyrene: linking erod induction to cytological effects. *Environ. Toxicol. Chem.* 25: 2593-2600.

## SOURCE

Benzo[a]pyrene (BAP-13) is a mouse monoclonal antibody raised against Benzo[a]pyrenyl-1-butyric acid conjugated to BSA.

## PRODUCT

Each vial contains 100 µg IgG<sub>1</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## RESEARCH USE

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

## APPLICATIONS

Benzo[a]pyrene (BAP-13) is recommended for detection of DNA and protein adducts of Benzo[a]pyrene by immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

## SELECT PRODUCT CITATIONS

1. Yang, K., et al. 2010. Expression of PAH-DNA adducts in lung tissues of Xuanwei female lung cancer patients. *Zhongguo Fei Ai Za Zhi* 13: 517-521.
2. Malekzad, H., et al. 2018. Noble metal nanostructures in optical biosensors: basics, and their introduction to anti-doping detection. *Trends Analyt. Chem.* 100: 116-135.
3. Liang, S., et al. 2019. AuAg alloy film-based colorful SPR imaging sensor for highly sensitive immunodetection of Benzo[a]pyrene in water. *Appl. Opt.* 58: 6942-6948.
4. Arai, A., et al. 2020. N,N-dimethylaminopyrene as a fluorescent affinity mass tag for ligand-binding mode analysis. *Sci. Rep.* 10: 7311.
5. Wu, S.E., et al. 2022. Benzo[a]pyrene exposure in muscle triggers sarcopenia through aryl hydrocarbon receptor-mediated reactive oxygen species production. *Ecotoxicol. Environ. Saf.* 239: 113599.
6. Inns, S., et al. 2024. Identification of SWI/SNF subcomplex GBAF presence, intra-complex interactions, and transcriptional dynamics during early porcine development. *Animals* 14: 773.

## STORAGE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.