SANTA CRUZ BIOTECHNOLOGY, INC.

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, MCF-7 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_1 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

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.

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.