

polycyclic aromatic hydrocarbons (4D5): sc-69886

BACKGROUND

Polycyclic aromatic hydrocarbons (PAHs) are a group of over 10,000 compounds that are found in a variety of products (including skin creams, blacktop material, wood preservatives and anti-dandruff shampoos) and are expelled into the air by car exhaust, as well as by the incomplete burning of organic compounds. Structurally, polycyclic aromatic hydrocarbons are fused aromatic rings that are lipophilic and possess unique UV absorbance spectra. The toxicity of polycyclic aromatic hydrocarbons depends heavily on the aromatic structure of the compound, as different isomers can vary from being extremely toxic to completely benign. Several polycyclic aromatic hydrocarbons have mutagenic, carcinogenic and teratogenic properties and, if inhaled or ingested in high quantities, may cause damage to organ systems, possibly resulting in breathing disorders and tumorigenesis.

REFERENCES

- Li, K., Chen, R., Zhao, B., Liu, M., Karu, A.E., Roberts, V.A. and Li, Q.X. 1999. Monoclonal antibody-based ELISAs for part-per-billion determination of polycyclic aromatic hydrocarbons: effects of haptens and formats on sensitivity and specificity. *Anal. Chem.* 71: 302-309.
- Adelhelm, C., Niessner, R., Pöschl, U. and Letzel, T. 2008. Analysis of large oxygenated and nitrated polycyclic aromatic hydrocarbons formed under simulated diesel engine exhaust conditions (by compound fingerprints with SPE/LC-API-MS). *Anal. Bioanal. Chem.* 391: 2599-2608.
- Kriipsalu, M., Marques, M., Hogland, W. and Nammar, D.R. 2008. Fate of polycyclic aromatic hydrocarbons during composting of oily sludge. *Environ. Technol.* 29: 43-53.
- Zhang, Y. and Tao, S. 2008. Seasonal variation of polycyclic aromatic hydrocarbons (PAHs) emissions in China. *Environ. Pollut.* 156: 657-663.
- Amador-Muñoz, O., Villalobos-Pietrini, R., Aragón-Piña, A., Tran, T.C., Morrison, P. and Marriott, P.J. 2008. Quantification of polycyclic aromatic hydrocarbons based on comprehensive two-dimensional gas chromatography-isotope dilution mass spectrometry. *J. Chromatogr. A* 1201: 161-168.
- Pérez Pavón, J.L., Del Nogal Sánchez, M., Fernández Laespada, M.E. and Moreno Cordero, B. 2008. Determination of aromatic and polycyclic aromatic hydrocarbons in gasoline using programmed temperature vaporization-gas chromatography-mass spectrometry. *J. Chromatogr. A* 1202: 196-202.
- Ding, J., Cong, J., Zhou, J. and Gao, S. 2008. Polycyclic aromatic hydrocarbon biodegradation and extracellular enzyme secretion in agitated and stationary cultures of *Phanerochaete chrysosporium*. *J. Environ. Sci.* 20: 88-93.
- Kummer, V., Masková, J., Zralý, Z., Neca, J., Simecková, P., Vondráček, J. and Machala, M. 2008. Estrogenic activity of environmental polycyclic aromatic hydrocarbons in uterus of immature Wistar rats. *Toxicol. Lett.* 180: 212-221.
- Lafortune, I., Juteau, P., Déziel, E., Lépine, F., Beaudet, R. and Villemur, R. 2009. Bacterial diversity of a consortium degrading high-molecular-weight polycyclic aromatic hydrocarbons in a two-liquid phase biosystem. *Microb. Ecol.* 57: 455-468.

SOURCE

polycyclic aromatic hydrocarbons (4D5) is a mouse monoclonal antibody raised against BSA-conjugated 6-aminobenzo(a)pyrene.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available azide-free for competitive inhibition assays, sc-69886 L, 200 µg/0.1 ml.

APPLICATIONS

polycyclic aromatic hydrocarbons (4D5) is recommended for detection of polycyclic aromatic hydrocarbons, including pyrene, 1-aminopyrene and 7,12 dimethylbenz[a]anthracene by solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.