



## Food Chemistry

Volume 91, Issue 2, June 2005, Pages 303-311

# Polycyclic aromatic hydrocarbons in smoked fish – a critical review

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Received 15 March 2004, Revised 6 June 2004, Accepted 6 June 2004, Available online 3 August 2004.

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<https://doi.org/10.1016/j.foodchem.2004.06.012>

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## Abstract

Among hundreds of components, wood smoke also contains at least 100 polycyclic aromatic hydrocarbons (PAH) and their alkylated derivatives. Many of them are carcinogenic. Benzo[ $\alpha$ ]pyrene (BaP) is regarded as a marker of the carcinogenic PAH in smoke and smoked fish, although in olive residual oil the maximum level of 2  $\mu\text{g}/\text{kg}$  for each of the eight most carcinogenic PAHs, including BaP, has been set. Contemporary analytical procedures based on extraction of the hydrocarbons from the matrix, clean-up procedure, separation by gas chromatography (GC) or high performance liquid chromatography (HPLC), follow

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about 0.1  $\mu\text{g}/\text{kg}$ , or even less. Some older data on the contents of BaP in smoked fish should be treated with caution, if the analytical procedures used did not guarantee unequivocal separation and identification of the individual PAH.



## Keywords

Polycyclic aromatic hydrocarbons; PAH; Benzo[ $\alpha$ ]pyrene; Smoking; Wood smoke; Smoke composition; Smoked fish; Smoke analysis

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