

**[P-22]****Simultaneous Analysis of Benzophenone and its Analogs by  
gas chromatography/mass spectrometry in rat bloods**

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Benzophenone is an UV-absorbing agent that has been used in industry and medicine for more than 30 years. Its twelve derivatives, designated benzophenone-1 through benzophenone-12, are widely used today in cosmetic products as a photostabilizer, a sunscreen in lotions, and hair sprays to protect the skin and hair from UV irradiation. In addition, benzophenone is used in the manufacture of a fragrance ingredient, insecticides, agricultural chemicals, and pharmaceuticals and is an additive for plastics and coatings. The simultaneous analysis of 7 benzophenone analogs (benzophenone, benzhydrol, p-hydroxybenzophenone, 2-hydroxy-4-methoxybenzophenone, 2,4-di hydroxybenzophenone, 2,2'-dihydroxy-4-methoxybenzophenone and 2,3,4-tri hydroxybenzophenone) was performed by gas chromatography-mass spectrometry in selected ion monitoring mode. Sample was adjusted to pH 9.5 and extracted with ethyl acetate for 20 mins. The organic solvent was reduced to dryness and the residues were derivatized for analysis. The detection limits were approximately 0.1 ng/mL each. The establish method can be applied to various sample(urine, bile, etc.).

**Keyword** : Benzophenone, UV-absorbing agent, simultaneous analysis, gas chromatography-mass spectrometry