



K8 A Postmortem Distribution in a Fatal Case of *o*-Dichlorobenzene Poisoning

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After attending this presentation, attendees will have information about the distribution of *o*-dichlorobenzene and its metabolites 2,3-dichlorophenol, and 3,4-dichlorophenol in biological fluid and several tissues in a case of fatality due to *o*-dichlorobenzene.

This presentation will impact the forensic community and/or humanity by showing an unusual dichlorobenzene poisoning case and the distribution in various tissues.

O-dichlorobenzene has been used as a solvent, insecticide, and a degreasing agent. An accurate and simple method was developed to determine dichlorobenzene and its metabolites, dichlorophenols, in biological fluid and tissues by using gas chromatography/mass spectrometry (GC/MS) with solid phase microextraction (SPME). For analysis of dichlorobenzene, an assembly of SPME with a replaceable extraction fiber, coated with 100mm polydimethylsiloxane, was used with a headspace technique. SPME fiber, coated with 85mm polyacrylate, was used to analyze dichlorophenols with an immersion technique. The calibration curves showed good linearity at 0.99 in the range of 20 to 400mg/mL for both techniques.

A male age 34 with schizophrenia was found dead. Toxicological analyses to identify and quantify *o*-dichlorobenzene and dichlorophenols were performed on blood and tissues taken at autopsy. The concentrations of *o*-dichlorobenzene were 39.9mg/mL (blood), 89.3mg/g (spleen), 63.1mg/g (lung), 50.6mg/g (kidney), 90.6mg/g (brain), 298.5mg/g (heart), and 101.4mg/g (liver). Its metabolites, 2,3-dichlorophenol and 3,4-dichlorophenol concentrations were 2.09 and 1.65mg/mL (blood), 3.53 and 2.69mg/g (spleen), 3.30 and 3.33mg/g (lung), 7.41 and 8.02mg/g (kidney), 1.13 and 0.73mg/g (brain), 1.81 and 1.38mg/g (heart), 6.44 and 4.78mg/g (liver), respectively.

***o*-Dichlorobenzene, SPME, Dichlorophenol**