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## DETERMINATION OF BISPHENOL A IN THERMAL PAPER RECEIPTS

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Bisphenol A (BPA, 2,2-bis(4-hydroxyphenyl) propane) is a high production volume industrial chemical. It is mainly used as monomer in the production of polycarbonate plastics, epoxy resins and the paper industry as color developer in thermal paper. BPA has been widely studied because of its adverse effect on the human health, especially endocrine modulating activity. The primary source of exposure to BPA for most people is through the diet. While air, dust, and water are other possible sources of exposure, additionally absorption of BPA via the skin from handling thermal papers receipts for the majority of daily human exposure. Thermal papers are used cash receipts, cinema tickets, airline tickets, lottery tickets and tickets for transportations (1-5). The aim of the present study was to develop a high pressure liquid chromatography (HPLC) method without derivatization for the determination of BPA in a thermal paper cash register receipt. Thermal paper was cut into small pieces and placed into the water during 60 mins. After extraction, sampling was designed for different times; 1.0, 5.0, 10, 15, 30 and 60 mins for HPLC analyses. HPLC experiments were carried out on a Agilent 1200 Series high pressure liquid chromatography system equipped with an Supelco C<sub>18</sub> Column (100x2.1 mm, particle size 2.7µm) using a mobile phase composed of water/acetonitrile (60:40, v/v) at a flow rate of 0.4 mL/min; the column temperature was 30°C. Fluorescence excitation and emission wavelengths for BPA detection were 225 and 310 nm respectively. Amount of BPA migration into the water were determined as shown in Table 1. A simple and efficient high pressure liquid chromatography (HPLC) method was developed without derivatization for the determination of BPA in a thermal paper cash register receipt. Further studies will involve food packages.

Table 1. Concentration of BPA into water.

Time (min)	Water (mg/g)
1	0.78
5	9.08
10	16.8
15	20.2
30	21.0
60	21.6

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