ABSTRACT

Bisphenol A (BPA) is the building block of polycarbonate plastics often used in food and beverage containers, including baby bottles, and it is also used as an additive in other plastics. BPA is also a component of epoxy resins used for dental materials, including dental sealants, lining of food, beverage containers and numerous other products including thermal papers. It is widely used as a colour developer in the thermal paper.

BPA can cause the toxicological effects if present tolerable daily intake (TDI) of 0.05 μg/kg body weight and the effects were proven to be pertinent for human health. The BPA content in the thermal paper was extracted and determined by High Performance Liquid Chromatography (HPLC) equipped with a diode array detector.

Most of the thermal papers that were obtained from various thermal printers contained BPA range from 0.0842 g/g to 0.119 g/g. The BPA content in thermal papers were detected by High Performance Liquid Chromatography (HPLC) equipped with a diode array detector. The highest BPA content recorded from the credit card machine with 0.119 g/g BPA corresponded to 11.9 % of relative recovery.

Meanwhile, the lowest BPA content obtained from the retail store machine with the value of 0.0842 g/g BPA and 8.4 % relative recovery. Besides, the Automated Teller Machine 2 reported highest BPA content compared to other automated teller machines with 0.117 g/g BPA corresponded to 11.7% of relative recovery. In the other hand, BPA content was not detected in the thermal paper collected from the debit card machine.

The extraction method used in this study including double extraction, solvent and sonication used increased the extraction efficiency more than 99.0 %. The non-thermal paper used as control and that paper had also being spiked with BPA standard for recovery calculation purpose. The % Recovery recorded for spiking with 100 g/g and 500 g/g BPA standard solution were 107.0 % and 111.0% respectively.

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LIST OF ABBREVIATIONS

HPLC	High Performance Liquid Chromatography
BPA	Bisphenol A
Min(s)	Minute(s)
kg	kilogram(s)
g	gram(s)
mg	milligram(s)
µg	microgram(s)
ng	nanogram(s)
mm	millimeter(s)
L	litre(s)
ml	milliliter(s)
µl	macrolitre(s)
ppm	part(s) per million
ppb	part(s) per billion
%	percentage
°C	degree Celcius
nd	not detected