

**DETERMINATION OF BISPHENOL A IN PLASTIC BOTTLES BY
USING HIGH PERFORMANCE LIQUID CHROMATOGRAPHY
(HPLC)**

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TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENT	iii
TABLE OF CONTENTS	iv
LIST OF TABLES	vi
LIST OF FIGURES	vii
LIST OF ABBREVIATIONS	viii
ABSTRACT	x
ABSTRAK	xi
CHAPTER 1 INTRODUCTION	
1.1 Background of Study	1
1.2 Problem Statement	3
1.3 Significance of Study	4
1.4 Objectives	5
CHAPTER 2 LITERATURE REVIEW	
2.1 Bisphenol A	6
2.1.1 Source of Bisphenol A	7
2.1.2 Expected Mechanism of Bisphenol A Entering Human Body	8
2.2 High Performance Liquid Chromatography	9
2.2.1 Recent study for detection of BPA by using HPLC	13
CHAPTER 3 METHODOLOGY	
3.1 Materials	21
3.2 Preparation of Standard Stock Solution of Bisphenol A	21
3.3 Preparation of Sample	22
3.3.1 Preparation of Sample Containing Bisphenol A Using Solid Phase Extraction (SPE)	22
3.3.2 Preparation of Sample Containing Bisphenol A Using Liquid Liquid Extraction (LLE)	23
3.4 Analysis using HPLC	26
CHAPTER 4 RESULTS AND DISCUSSION	
4.1 Solid Phase Extraction	27
4.2 Liquid Liquid Extraction	31
4.3 Method Validation	35
4.3.1 Limit of Detection (LOD)	35
4.3.2 Limit of Quantification (LOQ)	36

4.4	Comparison between Liquid Liquid Extraction and Solid Phase	36
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CHAPTER 5 CONCLUSION AND RECOMMENDATIONS

5.1	Conclusion	37
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5.2	Recommendations	39
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	CITED REFERENCES	41
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	APPENDICES	44
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	<i>CURRICULUM VITAE</i>	54
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ABSTRACT

DETERMINATION OF BISPHENOL A IN PLASTIC BOTTLES BY USING HIGH PERFORMANCE LIQUID CHROMATOGRAPHY (HPLC)

Bisphenol A (BPA) is an endocrine disrupters which is mainly used in the plastic industry. On the other words, it means that BPA is able to mimic or interfere with the body's hormones and disrupts the endocrine system. Therefore, it can affected the consumer's health. Thus, in this research, BPA was detected by using high performance liquid chromatography (HPLC) which equipped with UV detector and C18 column as its stationary phase. The mobile phase was composed of 65 % acetonitrile and 35 % deionized water where the flow rate was set to 0.75 mL/min for solid phase extraction (SPE) and 1.0 mL/min for liquid liquid extraction (LLE). Other than that, UV wavelength and column temperature used was 230 nm and 30°C respectively. In this analysis, the detection of BPA by using different types of extraction were studied. SPE and LLE were conducted in order to extract the BPA in the plastic bottles. At the end of this analysis, the analytical method was validated according to various parameter such as calibration curve, limit of detection (LOD), limit of quantification (LOQ) and accuracy. The best linearity obtained was in the range of 0.5 ppm – 30 ppm and 10 ppm – 50 ppm with a good linear correlation coefficient was observed with $R^2 = 0.9943$ and $R^2 = 0.963$. The value of LOD and LOQ obtained from the calculation was 0.0043 ppm and 0.0146 ppm respectively. From the analysis, it was shown that LLE was the best method that could extract the BPA in the plastic bottles whereas there was no BPA found in the samples by using SPE method.