



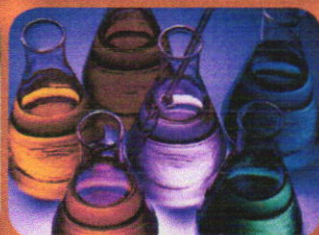
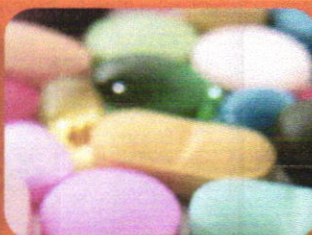
24th FAPA CONGRESS 2012

Bali, 13 - 16 September 2012

Bali Nusa Dua Convention Center, Indonesia

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ABSTRACT BOOK



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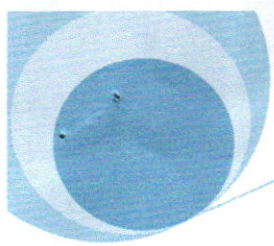
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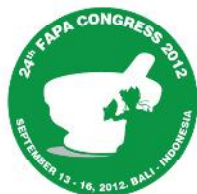
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FAPA CONGRESS 2012 in BALI - INDONESIA

24th Federation of Asian Pharmaceutical Associations Congress

July 04, 2012

Mr. Iswandi . S.Si., Apt
Fak. Farmasi Universitas Setia Budi
Solo, Indonesia

Dear, Iswandi

Congratulations!

We are pleased to announce that your **Poster** presentation entitled

**“THE EFFECT OF CARBONATED DRINK ADDED ON PARACETAMOL
DECOMPOSITION BY HIGH PERFORMANCE LIQUID
CHROMATOGRAPHY”**

has been accepted to be presented at The 24th Federation of Asian Pharmaceutical Associations Congress (FAPA) in Bali, Indonesia on September 13 - 16, 2012.

Abstracts will only be published in the Abstract Book if the presenting author has registered on line and paid before 31st July 2012. Abstracts presenters who haven't registered and paid the fee before 31st July 2012 will be disqualified; these abstracts cannot be presented and will not be published.

Please note that poster dimension should not exceed 90 cm x 180 cm (width x length). Exact details of schedule for poster presentation session will be published on FAPA Congress 2012 website at a later date.

We're looking forward to seeing you at FAPA Congress in Bali, Indonesia.

Sincerely yours,

Nurul Falah Eddy Pariang
Chairman of the Organizing Committee

Note :

1. *Your abstract Number* : PPT1-034
2. *Your Registration Code* : LNQ6FZ

ABSTRACT

THE EFFECT OF CARBONATED DRINK ADDED ON PARACETAMOL DECOMPOSITION BY HIGH PERFORMANCE LIQUID CHROMATOGRAPHY

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Parasetamol is anacetanilide derivative, a metabolite of phenacetin, used as analgesic and antipyretic, not as anti-inflammatory. Carbonated drink is widely consumed and known as 'soft drink' or soda drink and has acid property. This study was aimed to know the effect of volume amount of carbonated drink on paracetamol decomposition.

The experiment was done using reversed phase HPLC method, with column: C 18 RP (300 x 3,9 mm), mobile phase: methanol-water (1:1), flow rate: 0,8 ml/minute, detector: UV-VIS spectrophotometer (245 nm). External standard method was done for quantitative analysis, where some standards of 50, 70, 100, 120, 150 and 200 ppm concentrations were injected and analyzed the correlation of peak area and concentration. Limit detection of paracetamol is 13,3521 ppm, and limit of quantitation is 44,5069 ppm. The result of recovery test was $97,90 \pm 0,12\%$ (b/v).

The result of study indicated that carbonated drink affected paracetamol decomposition. The effect of carbonated drink qualitatively was showed by chromatograms of standard paracetamol and the sample that appeared at the fourth minute, while quantitatively paracetamol decomposition was increased, caused by volume variation of carbonated drink. The average assay of decomposed paracetamol at volume addition of carbonated drink of 50 ml was $7,56 \pm 0,5\%$ b/v; 100 ml: $14,24 \pm 0,47\%$ b/v; 250 ml: $30,11 \pm 0,17\%$ b/v.

Keywords: paracetamol, carbonated drink, HPLC , decomposition

THE EFFECT OF CARBONATED DRINK ADDED ON PARACETAMOL DECOMPOSITION BY HIGH PERFORMANCE LIQUID CHROMATOGRAPHY

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Faculty of Pharmacy, Setia Budi University, Surakarta, Indonesia
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Introduction

Paracetamol is a derivative which is a metabolite of asetanilida fanasetin the first widely used as an analgesic but in 1978 had been withdrawn from circulation due to side effects of nephrotoxicity and carcinogens. Carbonated beverages are characterized by the presence of bubbles - bubbles that give the impression of fresh and when drunk or gas release bubbles seemed to bite on the tongue. current use of paracetamol is often misused by modifying paracetamol with carbonated beverages because the majority of people think that carbonated drinks as well as due to water content of carbonated drinks consists of 90% water and the rest is a combination of various materials. abuse of these drugs can cause side effects that are the result of interaction paraaminofenol paracetamol use with carbonated beverages

Using of High Performance Liquid Chromatography (HPLC) is the method of analysis because this method has many advantages over other methods. One is the speed of analysis and high sensitivity, which is expected to obtain accurate results.

Benefit Research

The purpose of this research is to know the effect of volume amount of carbonated drink on paracetamol decomposition

Research Methodology

1. Determination of wavelength.

Paracetamol standard prepared concentration 10 ppm and the solvent with aquabidestilata. Absorption solution was observed by a spectrophotometer at a wavelength of 215- 300 nm using a blank.

2. Optimation of HPLC conditions

Paracetamol standard solution of 15.0 μ L was injected using mobile phase of methanol-water with a ratio of 1:1, 1:2 and 1:3. As well as the flow rate changed: 0.8 ml / min and 1.0 ml / min.

3. Calibration curves

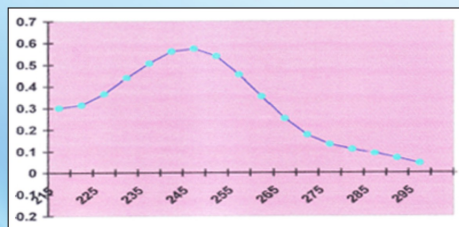
Standard paracetamol solution in six concentrations: 50 ppm, 70 ppm, 100 ppm, 120 ppm, 150ppm, and 200 ppm. Each solution filtered with 0.45 μ m and injection volume 15.0 μ L into the HPLC using of selected optimation conditions and then analyzed the relationship between peak area and concentration reference standards. Further Defining the limit of detection (LOD), limit of quantitation (LOQ) and accuracy.

4. Determination of samples

Paracetamol standard powder weighted 50,0 mg and with three variations of the volume of carbonated drinks (50,0 ml ; 100,0 ml and 250,0 ml), then created a standard solution with the same concentration of paracetamol but dissolved with aquabidesliata. Each solution filtered with 0.45 μ m and injection volume 15.0 μ L into the HPLC. Calculated levels are decomposed parasetamol

Results and Discussion

1. Determination of wavelength.



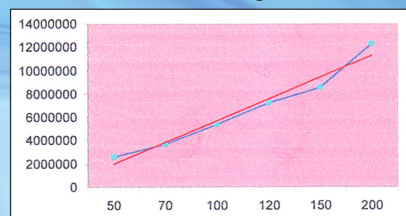
Determination Optimation of Wavelength at 245 nm

2. Optimation of HPLC conditions

Mobile Phase Composition	Flow rate (ml/min)	N	HETP	Tf
Metanol : Water 1 : 1	0.8	313.80	0.10	1.46
	1.0	247.54	0.12	1.82
Metanol : Water 1 : 2	0.8	254.00	0.12	1.50
	1.0	283.17	0.11	1.27
Metanol : Water 1 : 3	0.8	282.66	0.11	1.13
	1.0	260.02	0.12	1.58

Selected conditions : Mobile Phase Composition = Metanol : Water (1 : 1) and Flow rate 0.8 ml/min

3. Determination of wavelength.



$$Y = -768052,38 + 64473,71X$$

$$R \text{ calc} = 0,9974$$

$$R \text{ table} = 0,9170$$

$$V_{xo} = 3,9 \%$$

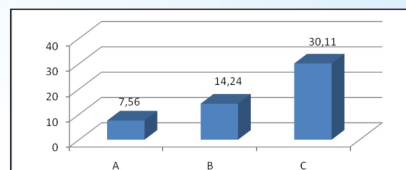
R calc. > R table; V_{xo} eligibility no more than 5 %

Concentration	Accuracy	Average	SD
50 %	93.33 %	93.58 %	0.35
	93.83 %		
	94.34 %		
100 %	95.35 %	95.39 %	0.05
	95.42 %		
	95.58 %		

Accuracy testing result for meet the requirement (acceptance criteria 80 – 110 %)

Limit Of Detection (LOD) is 13.3521 ppm and Limit Of Quantitation (LOQ) is 44.5069 ppm.

4. Determination of samples



Decomposed paracetamol at volume addition of carbonated drink of 50 ml was $7,56 \pm 0,5\%b/v$; 100 ml: $14,24 \pm 0,47\%b/v$; 250 ml: $30,11 \pm 0,17\%b/v$.

Conclusion

The result of study indicated that carbonated drink affected paracetamol decomposition. The effect of carbonated drink qualitatively was showed by chromatograms of standard paracetamol and the sample that appeared at the fourth minute, while quantitatively paracetamol decomposition was increased, caused by volume variation of carbonated drink. The average assay of decomposed paracetamol at volume addition of carbonated drink of 50 ml was $7,56 \pm 0,5\%b/v$; 100 ml: $14,24 \pm 0,47\%b/v$; 250 ml: $30,11 \pm 0,17\%b/v$.

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