The 3rd International Seminar on Chemistry 2014

Innovation and Advances in Chemistry for The 21st Century Challenges

Program and Abstracts

20 - 21 November 2014
Aula Pusat Studi Bahasa Jepang
Jatinangor Campus, Universitas Padjadjaran
Indonesia

organized by

Department of Chemistry
Faculty of Mathematics and Natural Sciences
Universitas Padjadjaran

in cooperation with

Indonesia Chemical Society

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Schedule of 3rd International Seminar on Chemistry 2014
Jatinangor, 20-21 November 2014

Thursday, 20 November 2014

Time	
08.00-08.30	Registration, poster posting
08.30-09.00	Opening Ceremony 1. Chairperson of the Organizing Committee 2. Head of Indonesian Chemical Society 3. Rector of Universitas Padjadjaran (Official Opening)
09.00-09.40	Plenary Session I (Chairperson: Juliandri, Ph.D) 09.00-09.30 Prof. Dr. Henry F. Schaefer III (PL001) 09.30-09.40 Discussion
09.40-10.00	Coffee Break
10.00-11.20	Plenary Session II (Chairperson: Prof. Dr. Husein H. B) 10.00-10.30 Prof. Dr. Mitsuyasu Kato (PL002) 10.30-11.00 Prof. Dr. Evamarie Hey-Hawkins (PL003) 11.00-11.20 Discussion
11.20-11.40	Exhibition Presentation (PT. UNITAMA ANALITIKA PERKASA)
11.40-12.00	Poster Session
12.00-13.00	Break & Lunch
13.00-14.20	Plenary Session III (Chairperson: Dr. Desi Natalia) 13.00-13.30 Dr. Anke C. Terwisscha Van Scheltinga (PL004) 13.30-14.00 Prof. Dr. Toto Subroto (PL005) 14.00-14.20 Discussion
14.20-15.20	Parallel Session I
15.20-15.30	Coffee Break
15.30-16.30	Parallel Session II

Friday, 21 November 2014

Time	
07.30-08.00	Poster posting
08.00-09.20	Plenary Session IV (Chairperson: Dr. Iman P. Maksum) 08.00-08.30 Prof. Dr. Ukun M.S. Soedjanaatmadja (PL006) 08.30-09.00 Prof. Dr. Masakazu Anpo (PL007) 09.00-09.20 Discussion
09.20-09.30	Coffee Break
09.30-10.50	Plenary Session V (Chairperson: Prof. Dr. Unang S.) 09.30-10.00 Prof. Dr. Khalijah Awang (PL008) 10.00-10.30 Hon. Assoc. Prof. Roger W. Read (PL009) 10.30-10.50 Discussion
10.50-11.10	Exhibition Presentation (PT. KROMTEKINDO UTAMA)
11.10-11.30	Poster Session
11.30-13.00	Break & Lunch
13.00-15.00	Parallel Session III
15.00-15.30	Coffee Break
15.30-16.30	Closing Ceremony

Distribution for Poster Presentation

Day 1 (Thursday, 20 November 2014)

PP-A001	Anita Oktari
PP-A002	Diana Hendrati
PP-A003	Euis Yuliani
PP-A004	Korry Novitriani
PP-A005	Ratna Nurmalasari
PP-A006	Shanty Wyantuti
PP-B001	Akhmad Zainal Abidin
PP-B002	Atiek Rostika
PP-B003	Dani Permana
PP-B004	Dolih Gozali
PP-B005	E. Evy Ernawati
PP-B006	Fitri Khoerunnisa
PP-B007	Iwan Hastiawan
PP-B008	Muryeti
PP-C001	Charlena
PP-C002	Chong Soon Lim
PP-C003	Adawiyah
PP-C004	Desnelli
PP-C005	Hadi Kuncoro
PP-C006	Leny Heliawati
PP-C007	Lilis Siti Aisyah
PP-C008	Meti Kusmiati
PP-C009	Akhmad Darmawan
PP-C010	Tatang Shabur
PP-C011	Sook Yee Liew
PP-C012	Tati Herlina
PP-C013	Tresna L
PP-C014	Tri Mayanti
PP-D001	Abdul muis
PP-D002	Adithya Sukma
PP-D003	Ayra Ulpiyana
PP-D004	Isti Daruwati
PP-D005	Martalena Ramli
PP-D006	Meilinah Hidayat
PP-D007	Nenden Indrayati
PP-D008	Rina Budi S
PP-D009	Ruswanto
PP-D010	Riski Dwimalida P
PP-D011	Saronom Silaban
PP-D012	Shabarni Gaffar
PP-F001	Christi L. Natanael
PP-F002	Diana Widiastuti
PP-F003	Eti Rohaeti

The G6PDH Inhibition Activity Effects of Ethanol Extract of *Detam 1* soybean, Jati Belanda leaves and Their Combinations in 3T3-L1 Culture Cells

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ISC-2014 International Seminar on Chemistry

ABSTRACTS

The prevalence of obesity is definitely increasing in all over the world. In obese subjects it was found that serum concentration of Glucose -6-phosphate dehydrogenase (G6PDH) increased significantly with increasing body weight. There are many Indonesian herbs have good effects in weight loss, for examples, *Detam 1* soybean from Balitkabi Malang and Jati Belanda from BND plantation. In this study, we examined the ethanol extract of *Detam 1* soybean seed (EEDS), Jati Belanda leaves (EEJB) and their combinations (EESJB). The aim of this study are to determine the effects of EEDS &EEJB and G6PDH toward cytotoxicity & inhibition activity in 3T3-L1 culture cells. Methodology: the effects of 3 concentrations (100ug/ml, 50 µg/ml, 10 µg/ml) of each samples to viability 3T3-L1 cells were measured triplo using cell titer 96 MTS Assay and G6PDH inhibition activity effects to 3T3-L1 cells using G6PDH kit, Abnova Cat KA 0880 with calorimetric method, counted at minutes 0 and 30. Results of average cells viability which treated with EEDS 100ug/ml: 85.39; 50 µg/ml: 93.79; 10 µg/ml: 96.59. With EEJB 61.77; 90.79; 99.52. With EESJB 76.66; 81.64; 88.60. The samples which viability > 90.0 was proved to be safe, so we only continued EEDS and EEJB 50 µg/ml, 10 µg/ml. Results of average GPDH inhibition activity: EEDS 50 µg/ml: 19.32 , 10 µg/ml: 11.91. EEJB 51.48 : 20.12. Conclusion: The EEDS and EEJB 50 µg/ml, 10 µg/ml is proved to be safe to cells and EEJB 50 µg/ml has the best effect in G6PDH inhibition activity.

Key words: *Detam 1* soybean - Jati Belanda – G6PDH - 3T3-L1 culture cells

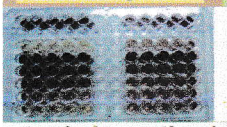
Research Objective

to determine effects of Ethanol Extract of Detam 1 Soybean (EEDS), Jati Belanda (EEJB) and Extract combination (EESJB) toward 3T3-L1 cells, in:

1. Cytotoxixity test toward Viability of cells
2. GPDH inhibition activity


Detam 1 Soybean (Glycine max L.Merr) from: BALITKABI, Malang


Jati Belanda leaves (Guazuma ulmifolia) from: BND Plantation



1. Standard Curve Plate that has treated were added MTS and incubated for 3 hours
2. Absorbance were read at 490 nm wave length using microplate reader

INTRODUCTION

The prevalence of obesity is definitely increasing in all over the world. In obese subjects, serum concentration of **Glucose -6-phosphate dehydrogenase (GPDH) increased** significantly with **increasing body weight.**

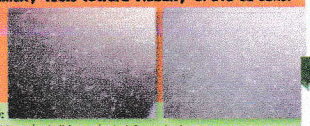
Glucose-6-phosphate dehydrogenase (G6PDH) is a key enzyme that regulates cellular redox potential.

The G6PDH levels in macrophages in the adipose tissue of obese animals were elevated (Ham, 2013).

METHODOLOGY

Viability test

1. Cytotoxicity tests toward Viability of 3T3-L1 cells:



SAMPLES:

1. **EEDS** 100ug/ml, 50 µg/ml, 10 µg/ml
2. **EEJB** 100ug/ml, 50 µg/ml, 10 µg/ml
3. **Combination (EESJB)** 100ug/ml, 50 µg/ml, 10 µg/ml

- samples were measured triplo using cell titer 96 MTS Assay

METHODOLOGY

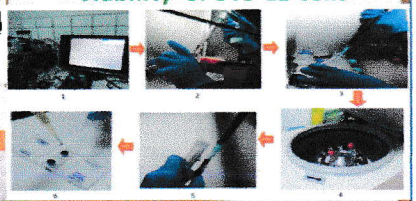
G6PDH inhibition activity

- Using G6PDH kit, Abnova Cat KA 0880 with calorimetric method, counted at minutes 0 and 30
- The samples treatment which caused viability of cells >90.0 was proved to be safe:

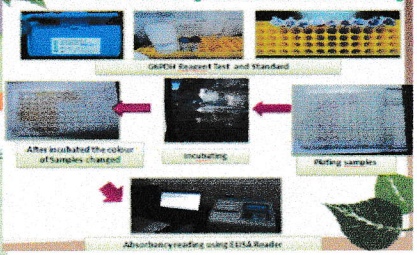
CYTOTOXIC	AVERAGE
KD 50	93.79
KD 10	96.59
JB 50	90.79
JB 10	99.52

so we only continued EEDS and EEJB 50 µg/ml, 10 µg/ml. Each samples were measured triplo/ three times

Cytotoxicity tests toward Viability of 3T3-L1 cells



G6PDH test [Abnova KA0880]



RESULTS:

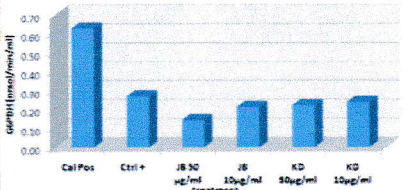
1. Cytotoxicity Effects of EEDS, EEJB and EESJB to Viability of 3T3-L1 cells

Cyto toxic	Replication				Replication				STD
Sample	1	2	3	Average	1	2	3	Average	
Ctrl	1.4248	1.2407	1.3786	1.3479	105.68	92.05	102.28	100.00	7.09
JB 100	1.1037	1.1197	1.0830	1.1021	81.88	83.07	80.35	81.77	1.37
JB 50	1.2311	1.2050	1.2351	1.2237	91.33	89.40	91.63	90.79	1.21
JB 10	1.2767	1.2527	1.2582	1.2606	94.27	92.94	93.35	93.52	0.68
KD 100	1.155	1.1343	1.1636	1.1510	85.69	84.15	86.33	85.39	1.12
KD 50	1.2697	1.2847	1.2580	1.2641	94.20	95.83	93.35	93.79	0.44
KD 10	1.2993	1.2873	1.3193	1.3020	96.39	95.50	97.88	96.59	1.20
SJB 100	1.0524	1.0232	1.0244	1.0333	78.08	75.91	76.00	76.66	1.21
SJB 50	1.1359	1.0768	1.0883	1.1004	84.27	79.89	80.76	81.64	2.32
SJB 10	1.1852	1.1848	1.2126	1.1942	87.93	87.90	89.96	88.60	1.16

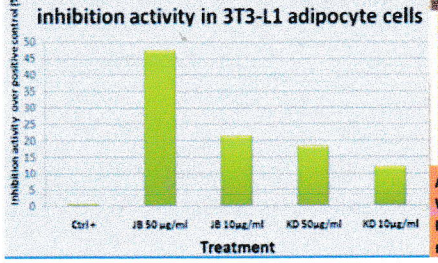
Results of G6PDH test

	G6PDH activity (nmol/min/ml)				G6PDH inhibition activity (%)			
Sampel	1	2	3	Average	1	2	3	Average
Cal Pos	0.63	0.57	0.68	0.63				
Ctrl +	0.25	0.28	0.28	0.27	7.41	3.77	-2.04	0.53
JB 50	0.15	0.14	0.13	0.14	83.89	46.54	51.48	47.30
JB 10	0.20	0.22	0.22	0.21	24.75	19.20	20.12	21.36
KD 50	0.22	0.22	0.22	0.22	16.98	18.27	19.32	18.19
KD 10	0.24	0.23	0.24	0.24	10.49	13.02	11.91	11.81

Effects of EEDS, EEJB toward G6PDH level in 3T3-L1 adipocyte cells



Effects of EEDS, EEJB toward G6PDH inhibition activity in 3T3-L1 adipocyte cells



CONCLUSION

- The **EEDS** and **EEJB** concentration of **50 µg/ml** and **10 µg/ml** is proved to be safe toward viability of 3T3-L1 cells
- **EEJB 50 µg/ml** has the best effect in GPDH inhibition activity.

AKNOWLEDGEMENT
We gratefully aknowledge the financial support of Higher Education Ministry of Republic Indonesia for research grant SP DIPA-023.04.2.189789/2014

References:

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Hidayat M, Soeng S, Prahastuti S. Pengujian Aktivitas Lipase Inhibitor Ekstrak Etanol dan Hasil Fraksionasi dari Kedelai *Detam 1* dan Daun Jati Belanda. *Jurnal Chimica et Natura Acta.* 2014. 2(1): 76-82.

Hidayat M, Soeng S, Prahastuti S. 2014. The Highest Activity of Lipase in Combination of Water Fraction of *Detam 1* Soybean and Jati Belanda Leaves. Poster in Seminar Nasional Bidang Kimia 2014, MIPA UNPAD, Bandung

ARTIKEL LENGKAP SEMINAR KIMIA INTERNASIONAL 2014

The G6PDH Inhibition Activity Effects of Ethanol Extract of *Detam 1* soybean, Jati Belanda leaves and Their Combinations in 3T3-L1 Culture Cells

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The prevalence of obesity is definitely increasing in all over the world. In obese subjects it was found that serum concentration of Glucose -6-phosphate dehydrogenase (G6PDH) increased significantly with increasing body weight. There are many Indonesian herbs have good effects in weight loss, for examples, *Detam 1* soybean from Balitkabi Malang and Jati Belanda from BHD plantation. In this study, we examined the ethanol extract of *Detam 1* soybean seed (EEDS), Jati Belanda leaves (EEJB) and their combinations (EESJB). The purposes of this study are to determine the safety of these extracts, and their effects to GPDH inhibition activity in 3T3-L1 culture cells. Method: the effects of 3 concentration (100ug/ml, 50 µg/ml, 10 µg/ml) of each samples to viability 3T3-L1 cells were measured triplo using cell titer 96 MTS Assay and GPDH inhibition activity effects to 3T3-L1 cells using G6PDH kit, Abnova Cat KA 0880 with calorimetric method, counted at minutes 0 and 30. Average results of viability cells which treated with EEDS 100ug/ml: 85.39; 50 µg/ml: 93.79; 10 µg/ml: 96.59. With EEJB 81.77; 90.79; 93.52. With EESJB 76.66; 81.64; 88.60. The samples which viability > 90.0 was proved to be safe, so we only continued EEDS and EEJB 50 µg/ml, 10 µg/ml. Average results of G6PDH inhibition activity: EEDS 50 µg/ml: 19.32 , 10 µg/ml: 11.91. EEJB 51.48 ; 20.12. Conclusion: The EEDS and EEJB 50 µg/ml, 10 µg/ml is proved to be safe to cells and EEJB 50 µg/ml has the best effect in G6PDH inhibition activity.

Key words: *Detam 1* soybean - Jati Belanda - Glucose -6-phosphate dehydrogenase - 3T3-L1 culture cells

Introduction

The prevalence of obesity is definitely increasing in all over the world. In obese subjects, serum concentration of Glucose -6-phosphate dehydrogenase (GPDH) increased significantly with increasing body weight. Glucose-6-phosphate dehydrogenase (G6PDH) is a

key enzyme that regulates cellular redox potential. The G6PDH levels in macrophages in the adipose tissue of obese animals were elevated (Ham, 2013).

Research Objective of this study is to determine effects of Ethanol Extract of Detam 1 Soybean (EEDS), Jati Belanda (EEJB) and Extract combination (EESJB) toward 3T3-L1 cells, in Cytotoxixity test toward Viability of cells and GPDH inhibition activity .

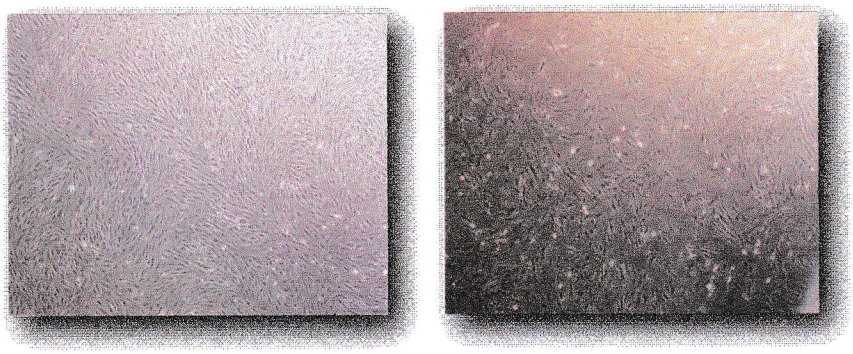
METHODOLOGY

Tool: Centrifuge Tube, Centri Star Cap 15 ml, TC Flask 25 cm Vent Cap, Blue tip (100-1000 mL), Yellow tip (10-100 mL), White tip (2-10 mL), Serological Pippet 10 mL, Serological Pippet5 mL, Refrigerated Centrifuge, Serological Pippet 10 Ml, Inverted Microscope

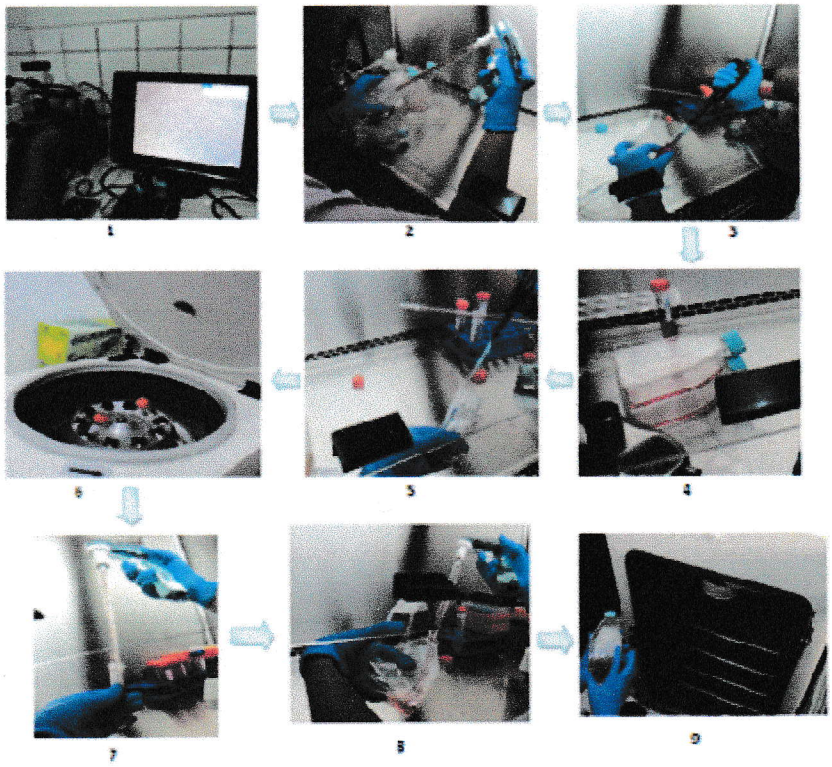
1. Viability test

Procedures:

First, we have to checked the condition of the cells (80-90% confluent), then previously medium cells removed and cells were rinsed with PBS 3x. The cells were rinsed with 0.02% and 0.25% trypsin EDTA 3 ml. After that cells were incubated at 36,5^{0}C for 2 minutes then added the growth medium to the cells. Cells and growth media was centrifuged at 500 × g for 5 minutes, the supernatant was discarded and the pellet resuspended in 4-5 growth medium. Suspension was divided on T flasks which had previously been filled with medium with a density of 8000 cells / cm2. Then the suspension in the T flasks were incubated at 37^{0}C, 5% CO_2. The medium was changed every 2 days for maintenance.



Picture 1. Viable Cells of 3T3-L1



2. Plating 3T3 L1 cells to Prepare for Treatments

Ingredients of Growth Medium:

DMEM (Biowest), 10% FBS (Biowest), 1% antibiotic-antimycotic (Biowest), PBS (Biowest), trypsin EDTA (Biowest)

Such procedures are listed below:

First, standard curve plate that has treated were added MTS and incubated for 3 hours. The absorbance were read at 490 nm wave length using microplate reader using G6PDH kit, Abnova Cat KA 0880 with calorimetric method, counted at minutes 0 and 30. The samples treatment which caused viability of cells > 90.0 was proved to be safe, so we only continued EEDS and EEJB 50 µg/ml, 10 µg/ml. The results of the combination treatment caused viability of < 90.0 cells, so we assumed that this treatment were not safe enough to be continued. Each samples were measured triplo/ three times.

Samples to be tested are:

1. Ethanol Extract of Detam 1 Soybean (EEDS) 100ug/ml, 50 µg/ml, 10 µg/ml
2. Ethanol Extract of Jati belanda (EEJB) 100ug/ml, 50 µg/ml, 10 µg/ml
3. Combination (EESJB) 100ug/ml, 50 µg/ml, 10 µg/ml

Each samples were measured triplo using cell titer 96 MTS Assay using cell titer and

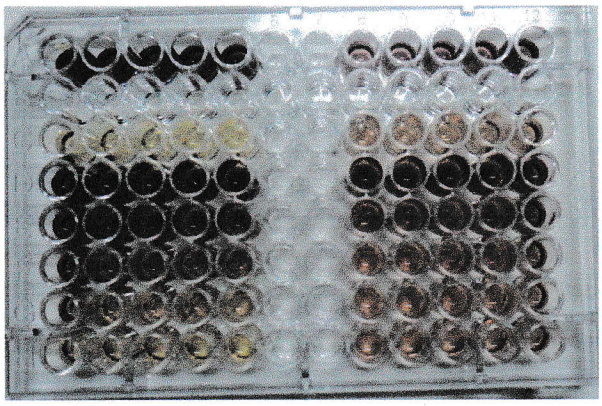
GPDH inhibition activity effects to 3T3-L1 cells using G6PDH kit, Abnova Cat KA 0880 with calorimetric method, counted at minutes 0 and 30.

RESULTS

Tabel 1. Viability of 3T3 L1 cells in 96 well plates

Abs	1	2	3	4	5	6	7	8	9	10	11	12
A	1.36	1.6846	1.4935	1.6331								
B	0.2611	0.2602	0.2528	0.2545								
C	1.5038	1.5198	1.4831	0.4001	1.4043	1.3836	1.4129	0.2493	1.3549	1.3257	1.3269	0.3025
D	1.5316	1.5055	1.5356	0.3005	1.4808	1.4758	1.4691	0.2111	1.3986	1.3395	1.3512	0.2627
E	1.5239	1.5059	1.5114	0.2532	1.5077	1.4957	1.5277	0.2084	1.4075	1.4071	1.4349	0.2223
F												
G												
H												

Cytotoxic	Replication				Replication				
	1	2	3	Average	1	2	3	Average	STD
Ctrl	1.4244	1.2407	1.3786	1.3479	105.68	92.05	102.28	100.00	7.09
JB1	1.1037	1.1197	1.0830	1.1021	81.88	83.07	80.35	81.77	1.37
JB2	1.2311	1.2050	1.2351	1.2237	91.33	89.40	91.63	90.79	1.21
JB3	1.2707	1.2527	1.2582	1.2605	94.27	92.94	93.35	93.52	0.68
KD1	1.155	1.1343	1.1636	1.1510	85.69	84.15	86.33	85.39	1.12
KD2	1.2697	1.2647	1.2580	1.2641	94.20	93.83	93.33	93.79	0.44
KD3	1.2993	1.2873	1.3193	1.3020	96.39	95.50	97.88	96.59	1.20
JK1	1.0524	1.0232	1.0244	1.0333	78.08	75.91	76.00	76.66	1.23
JK2	1.1359	1.0768	1.0885	1.1004	84.27	79.89	80.76	81.64	2.32
JK3	1.1852	1.1848	1.2126	1.1942	87.93	87.90	89.96	88.60	1.18



Picture 2. The 96 well plate of 3T3 L1 cells

Below is shown the cytotoxic test results of the test material, the statistical analysis of their mean and a further test Duncan.

Table 2. Average Statistical analysis of measurement and Duncan post hoc test absorbance EEKD cytotoxic test, EEJB and combinations of the 3T3-L1 cells

Samples	Absorbance		
	100 µg/ml	50 µg/ml	10 µg/ml
Extract JB	81.77±1.36 a	90.79±1.21 b	93.52±0.68 c
Extract KD	85.39±1.12 a	93.79±0.44 b	96.59±2.32 c
Extract JK	76.66±1.23 a	81.64±2.32 b	88.60±1.18 c

Data are shown as mean ± standard deviation.
Different letters in one column (concentration) showed significant at $p < 0.05$

Results of Treatment Activity Test against G6PDH

Table 3. Mapping Plate of G6PDH.

Sample	1	2	3	4	5	6	7	8	9	10	11	12
A	Cal 1	Cal 1	Cal Pos	Cal Pos	Cal Pos							
B	Cal 2	Cal 2	Blank	Blank	Blank							
C	Cal 3	Cal 3	Ctrl +	Ctrl +	Ctrl +							
D	Cal 4	Cal 4	JB 1	JB 1	JB 1							
E	Cal 5	Cal 5	JB 2	JB 2	JB 2							
F	Cal 6	Cal 6	KD 1	KD 1	KD 1							
G			KD 2	KD 2	KD 2							
H												

Note. Cal : Standar. 1 : 0; 2 : 0.25; 3 : 0.5; 4 : 0.75; 5 : 1; dan 6 : 1.25. JB 1 : Jati belanda Extract 50 mg/ml. JB 2 : Jati belanda Extract 10 mg/ml. KD 1 : Extract Kedelai Detam 50 mg/ml. KD 2 : Detam 1 Soybean Extract0 mg/ml. Ctrl + : control positif (perlakuan tanpa Extract).

Table 4. Data Absorbance of G6PDH A_1 (T_1)

Abs	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0632	0.0645	0.6350	0.6282	0.6322							
B	0.1322	0.1266	0.0651	0.0686	0.0688							
C	0.2072	0.1747	0.0949	0.0953	0.0957							
D	0.2463	0.2891	0.0832	0.0879	0.0857							
E	0.3735	0.3317	0.0993	0.0909	0.0965							
F	0.3789	0.3444	0.0927	0.0903	0.0924							
G			0.1035	0.107	0.1052							
H												

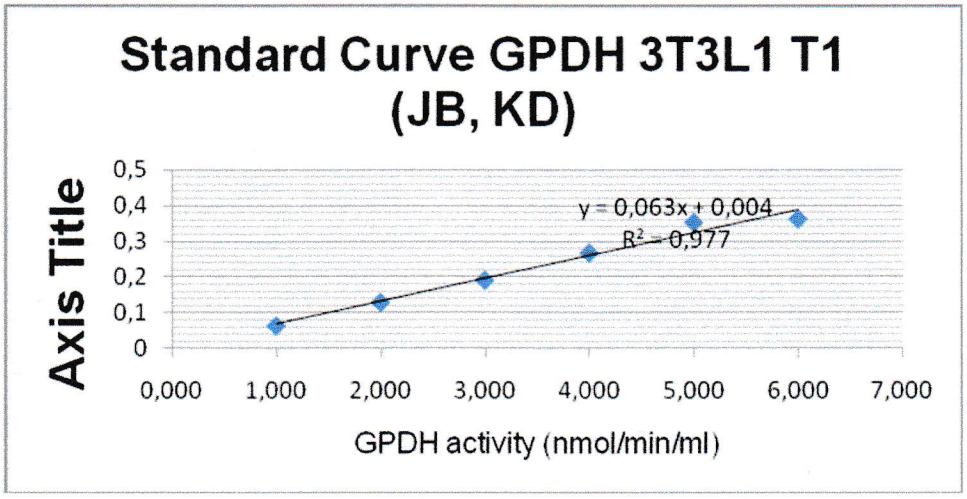
Table 5. Data Absorbance of G6PDH A_2 (T_2)

Abs	1	2	3	4	5	6	7	8	9	10	11	12
A	0.0628	0.0635	1.0135	0.9684	1.0373							
B	0.1449	0.1413	0.0635	0.0697	0.0623							
C	0.2275	0.2044	0.2426	0.2611	0.2587							
D	0.2767	0.3290	0.1718	0.1722	0.1620							
E	0.4319	0.3942	0.2189	0.2195	0.2236							

F	0.4525	0.4392	0.2249	0.2204	0.2208
G			0.2462	0.2456	0.2456

Table 6. Standard Curve of G6PDH A_1 (T_1)

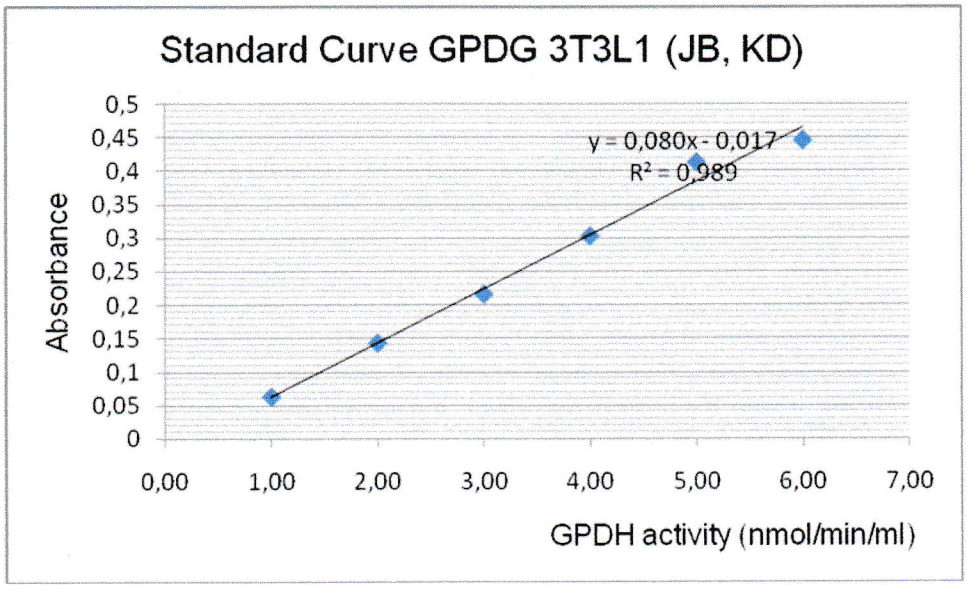
Standar (nmol/µl)	1	2	average
0.000	0.0632	0.0645	0.0639
0.250	0.1322	0.1266	0.1294
0.500	0.2072	0.1747	0.1910
0.750	0.2463	0.2891	0.2677
1.000	0.3735	0.3317	0.3526
1.250	0.3789	0.3444	0.3617



Picture 2. Standard Curve of G6PDH A_1 (T_1)

Table 7. Standard Curve of G6PDH A_2 (T_2)

Standar (nmol/µl)	1	2	Average
0	0.0628	0.0635	0.0632
0.25	0.1449	0.1413	0.1431
0.5	0.2275	0.2044	0.2160
0.75	0.2767	0.3290	0.3029
1	0.4319	0.3942	0.4131
1.25	0.4525	0.4392	0.4459



Picture 3. Standard Curve of G6PDH A_2 (T_2).

Results of measurement of G6PDH

From the result in table 4 and 5, based on each standard curve in table 7 and 8, below were shown the absorbance data, G6PDH levels and Inhibition activities of G6PDH.

Table 8. Absorbance data, G6PDH levels and Inhibition activities of G6PDH.

Sampel	Absorbance T1			Abs T2			AbsT2-T1			Ave rage	GPDH activity (n mol/min/ml)			Ave rage	GPDH inhibition activi ty (%)			Ave rage
	1	2	3	1	2	3	(T2-T1)-1	(T2-T1)-2	(T2-T1)-3		1	2	3		1	2	3	
Cal Pos	0.5675	0.5607	0.5647	0.9483	0.9032	0.9721	0.3808	0.3425	0.4074	0.3769	0.63	0.57	0.68	0.63				
Ctrl +	0.0274	0.0278	0.0282	0.1774	0.1959	0.1935	0.1500	0.1681	0.1653	0.1611	0.25	0.28	0.28	0.27	7.41	-3.77	-2.04	0.53
JB 1	0.0157	0.0204	0.0182	0.1066	0.1070	0.0968	0.0909	0.0866	0.0786	0.0854	0.15	0.14	0.13	0.14	43.89	46.54	51.48	47.30
JB 2	0.0318	0.0234	0.029	0.1537	0.1543	0.1584	0.1219	0.1309	0.1294	0.1274	0.20	0.22	0.22	0.21	24.75	19.20	20.12	21.36
KD 1	0.0252	0.0228	0.0249	0.1597	0.1552	0.1556	0.1345	0.1324	0.1307	0.1325	0.22	0.22	0.22	0.22	16.98	18.27	19.32	18.19
KD 2	0.0360	0.0395	0.0377	0.1810	0.1804	0.1804	0.1450	0.1409	0.1427	0.1429	0.24	0.23	0.24	0.24	10.49	13.02	11.91	11.81

Rumus

GPDH= [(B/((T2-T1)xV))] x sampel dilution

B : T2-T1 T1 : 0 menit T2 : 30 menit

V : volume sampel (ml) (20 µl = 0.02 ml) sampel dilution = 1x

Table 9. Analysis and Statistics Average of 3 measurements Duncan post hoc test activities against G6PDH levels and Inhibition activity (%) of EEDS, EEJB and combinations in 3T3-L1 cells.

Samples	GPDH GPDH (nmol/min/ml)	GPDH (%)
Extract JB 50 µg/ml	0.14±0.01 a	47.30±3.85 e
Extract JB 10 µg/ml	0.21±0.01 b	21.36±2.97 d
Extract KD50 µg/ml	0.22±0.00 bc	18.19±1.17 c
Extract KD 10 µg/ml	0.24±0.01 c	11.81±1.27 b
Positive control	0.27±0.02 d	0.00±0.00 a

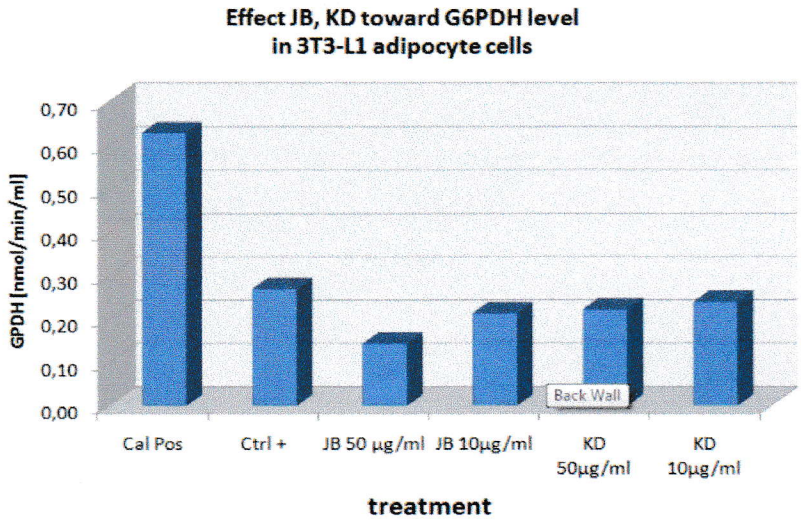


Figure 4. Graph of G6PDH levels as Treatment Effects of 3T3-L1 cells

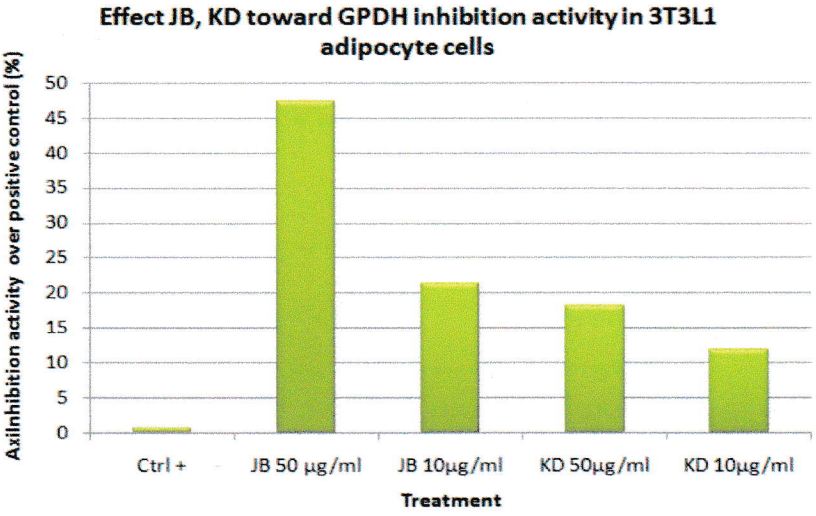


Figure 5. Graph of G6PDH inhibition activities in 3T3-L1 cells

Conclusion

The Extract Ethanol of Detam 1 Soybean and Extract Ethanol of Jati Belanda concentration of 50 µg/ml and 10 µg/ml is proved to be safe toward 3T3-L1 cells. Extract Ethanol of Jati Belanda concentration of 50 µg/ml has the best effect in GPDH inhibition activity.

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