

Surat keterangan lolos etik



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SURAT KETERANGAN LOLOS ETIK

Nomor: 13/Ethical Clearance/FKGUI/X/2008

Setelah membaca dan mempelajari usulan penelitian atas nama:

1. Arismunandar NPM: 0205000087
2. Medwin Setia NPM: 0205000575


Judul: "Uji sitotoksitas chitosan terhadap sel kanker HSC-4, HAT-7, dan A-549".

Dengan ini Komisi Etik Penelitian Fakultas Kedokteran Gigi Universitas Indonesia menerangkan bahwa penelitian tersebut di atas dinyatakan lolos etik.

Jakarta, 7 Oktober 2008

Ketua Komisi Etik Penelitian FKGUI,

Mengetahui:
Wakil Dekan FKGUI,


Prof. Dr. drg. M. Suharsini Soetopo, SU, Sp.KGA
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Surat keterangan mengenai kitosan dari BATAN.

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>Assalam'alaikum Wr.Wb.

Dr. Endang, senag sekali mendengar beritanya, semoga penelitian yang akan kita lakukan ini betul-betul bermanfaat untuk kemajuan IPTEK dan dapat menyejahterkan masyarakat Indonesia.
Mengenai spesifikasi dari chitosan yang dihasilkan batan dapat saya jelaskan sebagai berikut:

- Derajat asetilasi : 72-82
- BM : 7000 - 8000
- Kelarutan dengan Asam Asetat 1% : 0,02 gr/ml
- Kadar air : < 10%

Bersama ini pula saya kirimkan contoh MoU (Draf) antara PATIR BATAN dengan FK UNPAD sebagai contoh MoU yang akan kita buat
Atas perhatian dan kerjasamanya saya mengucapkan terima kasih

Wassalamu'alaikum Wr. Wb.

Lampiran 3

Hasil Uji Statistik

HSC-4

Data Nilai Absorbansi (OD) Sel HSC-4

Sampel	Kontrol	Chitosan				
		0,0005%	0,0025%	0,005%	0,25%	0,5%
1	2.733	3.003	3.078	2.906	0.589	0.555
2	2.736	3.017	3.086	2.907	0.608	0.56
3	2.757	3.026	3.095	2.935	0.616	0.578
4	2.996	3.029	3.138	2.995	0.624	0.592
5	3.028	3.043	3.15	3.041	0.713	0.598
Rata-rata	2.850	3.024	3.109	2.957	0.630	0.577

Data Deskriptif Nilai Absorbansi (OD) Sel HSC-4

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Kontrol	5	2.85000	.148605	.066458	2.66548	3.03452	2.733	3.028
0.0005%	5	3.02360	.014826	.006630	3.00519	3.04201	3.003	3.043
0.0025%	5	3.10940	.032431	.014504	3.06913	3.14967	3.078	3.150
0.005%	5	2.95680	.059340	.026538	2.88312	3.03048	2.906	3.041
0.25%	5	.63000	.048182	.021548	.57017	.68983	.589	.713
0.5%	5	.57660	.018968	.008483	.55305	.60015	.555	.598
Total	30	2.19107	1.146514	.209324	1.76295	2.61918	.555	3.150

Uji Normalitas Data dengan *Kolmogorov-Smirnov*

Konsentrasi Chitosan		Kolmogorov-Smirnov(a)		
		Statistic	df	Sig.
Viabilitas Sel	Kontrol	.334	5	.070
	0.0005%	.164	5	.200
	0.0025%	.271	5	.200
	0.005%	.243	5	.200
	0.25%	.350	5	.045
	0.5%	.209	5	.200

Uji Homogenitas Data dengan *Levene*

Levene Statistic	df1	df2	Sig.
20.761	5	24	.000

Uji Beda Data dengan One Way ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	38.002	5	7.600	1542.836	.000
Within Groups	.118	24	.005		
Total	38.120	29			

Multiple Comparisons(a)

Bonferroni

(I) Konsentrasi Chitosan	(J)Konsentrasi Chitosan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Kontrol	0.0005%	-.173600(*)	.044390	.010	-.31824	-.02896
	0.0025%	-.259400(*)	.044390	.000	-.40404	-.11476
	0.005%	-.106800	.044390	.363	-.25144	.03784
	0.25%	2.220000(*)	.044390	.000	2.07536	2.36464
	0.5%	2.273400(*)	.044390	.000	2.12876	2.41804
0.0005%	Kontrol	.173600(*)	.044390	.010	.02896	.31824
	0.0025%	-.085800	.044390	.977	-.23044	.05884
	0.005%	.066800	.044390	1.000	-.07784	.21144
	0.25%	2.393600(*)	.044390	.000	2.24896	2.53824
	0.5%	2.447000(*)	.044390	.000	2.30236	2.59164
0.0025%	Kontrol	.259400(*)	.044390	.000	.11476	.40404
	0.0005%	.085800	.044390	.977	-.05884	.23044
	0.005%	.152600(*)	.044390	.032	.00796	.29724
	0.25%	2.479400(*)	.044390	.000	2.33476	2.62404
	0.5%	2.532800(*)	.044390	.000	2.38816	2.67744
0.005%	Kontrol	.106800	.044390	.363	-.03784	.25144
	0.0005%	-.066800	.044390	1.000	-.21144	.07784
	0.0025%	-.152600(*)	.044390	.032	-.29724	-.00796
	0.25%	2.326800(*)	.044390	.000	2.18216	2.47144
	0.5%	2.380200(*)	.044390	.000	2.23556	2.52484
0.25%	Kontrol	-	.044390	.000	-	-
	0.0005%	2.220000(*)	.044390	.000	2.36464	2.07536
	0.0025%	2.393600(*)	.044390	.000	2.53824	2.24896
	0.005%	2.479400(*)	.044390	.000	2.62404	2.33476
	0.5%	2.326800(*)	.044390	.000	2.47144	2.18216
0.5%	Kontrol	-	.044390	.000	-	-
	0.0005%	2.273400(*)	.044390	.000	2.41804	2.12876
	0.0025%	2.447000(*)	.044390	.000	2.59164	2.30236
	0.005%	2.532800(*)	.044390	.000	2.67744	2.38816
	0.25%	2.380200(*)	.044390	.000	2.52484	2.23556
		-.053400	.044390	1.000	-.19804	.09124

* The mean difference is significant at the .05 level.

HAT-7

Data Nilai Absorbansi (OD) Sel HAT-7

Sampel	Kontrol	Chitosan				
		0,0005%	0,0025%	0,005%	0,25%	0,5%
1	3.116	2.98	3.122	3.349	0.693	0.618
2	3.189	3.02	3.153	3.415	0.705	0.624
3	3.216	3.17	3.266	3.486	0.706	0.635
4	3.252	3.172	3.372	3.507	0.805	0.644
5	3.281	3.196	3.377	3.565	0.807	0.656
Rata-rata	3.211	3.108	3.258	3.464	0.743	0.635

Data Deskriptif Nilai Absorbansi (OD) Sel HSC-4

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Kontrol	5	3.21080	.063472	.028386	3.13199	3.28961	3.116	3.281
0.0005%	5	3.10760	.099764	.044616	2.98373	3.23147	2.980	3.196
0.0025%	5	3.25800	.119103	.053264	3.11011	3.40589	3.122	3.377
0.005%	5	3.46440	.083904	.037523	3.36022	3.56858	3.349	3.565
0.25%	5	.74320	.057560	.025742	.67173	.81467	.693	.807
0.5%	5	.63540	.015258	.006823	.61645	.65435	.618	.656
Total	30	2.40323	1.239921	.226378	1.94024	2.86623	.618	3.565

Uji Normalitas Data dengan Kolmogorov-Smirnov

Konsentrasi Chitosan	Kolmogorov-Smirnov(a)		
	Statistic	df	Sig.
Viabilitas Sel	.166	5	.200
0.0005%	.334	5	.071
0.0025%	.231	5	.200
0.005%	.202	5	.200
0.25%	.341	5	.058
0.5%	.173	5	.200

Uji Homogenitas Data dengan *Levene*

Levene Statistic	df1	df2	Sig.
4.358	5	24	.006

Uji Beda Data dengan *One Way ANOVA*

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	44.430	5	8.886	1375.788	.000
Within Groups	.155	24	.006		
Total	44.585	29			

Multiple Comparisons

Bonferroni

(I) Konsentrasi Chitosan	(J) Konsentrasi Chitosan	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Kontrol	0.0005%	.103200	.050828	.803	-.06242	.26882
	0.0025%	-.047200	.050828	1.000	-.21282	.11842
	0.005%	-.253600(*)	.050828	.001	-.41922	-.08798
	0.25%	2.467600(*)	.050828	.000	2.30198	2.63322
	0.5%	2.575400(*)	.050828	.000	2.40978	2.74102
0.0005%	Kontrol	-.103200	.050828	.803	-.26882	.06242
	0.0025%	-.150400	.050828	.103	-.31602	.01522
	0.005%	-.356800(*)	.050828	.000	-.52242	-.19118
	0.25%	2.364400(*)	.050828	.000	2.19878	2.53002
	0.5%	2.472200(*)	.050828	.000	2.30658	2.63782
0.0025%	Kontrol	.047200	.050828	1.000	-.11842	.21282
	0.0005%	.150400	.050828	.103	-.01522	.31602
	0.005%	-.206400(*)	.050828	.007	-.37202	-.04078
	0.25%	2.514800(*)	.050828	.000	2.34918	2.68042
	0.5%	2.622600(*)	.050828	.000	2.45698	2.78822
0.005%	Kontrol	.253600(*)	.050828	.001	.08798	.41922
	0.0005%	.356800(*)	.050828	.000	.19118	.52242
	0.0025%	.206400(*)	.050828	.007	.04078	.37202
	0.25%	2.721200(*)	.050828	.000	2.55558	2.88682
	0.5%	2.829000(*)	.050828	.000	2.66338	2.99462
0.25%	Kontrol	-2.467600(*)	.050828	.000	-	-
	0.0005%	-2.364400(*)	.050828	.000	2.63322	2.30198
	0.0025%	-2.514800(*)	.050828	.000	-	-
	0.005%	-2.721200(*)	.050828	.000	2.53002	2.19878
	0.5%	.107800	.050828	.667	-	-
0.5%	Kontrol	-2.575400(*)	.050828	.000	2.68042	2.34918
	0.0005%	-2.472200(*)	.050828	.000	2.78822	2.45698
	0.0025%	-2.622600(*)	.050828	.000	-	-
	0.005%	-2.829000(*)	.050828	.000	2.99462	2.66338
	0.25%	-.107800	.050828	.667	2.74102	2.40978

* The mean difference is significant at the .05 level.

Dokumentasi



Gambar 1. Laminar Air Flow



Gambar 2. Sentrifuge



Gambar 3. Inkubator



Gambar 4. Orbital Shaker



Gambar 5. 96 well



Gambar 6. Foto bersama kelompok skripsi dan pembimbing.

T-Test

Kontrol

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Viabilitas Sel	Equal variances assumed	14.351	.005	-4.993	8	.001	-.360800	.072266	-.527447	-.194153
	Equal variances not assumed			-4.993	5.412	.003	-.360800	.072266	-.542389	-.179211

Konsentrasi Chitosan 0.0005%

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Viabilitas Sel	Equal variances assumed	37.086	.000	1.862	8	.100	-.084000	.045106	-.188014	.020014
	Equal variances not assumed			1.862	4.177	.133	-.084000	.045106	-.207173	.039173

Konsentrasi Chitosan 0.0025%

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Viabilitas Sel	Equal variances assumed	8.866	.018	2.692	8	.027	-.148600	.055204	-.275900	-.021300
	Equal variances not assumed			2.692	4.590	.047	-.148600	.055204	-.294405	-.002795

Konsentrasi Chitosan 0.005%

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Viabilitas Sel	Equal variances assumed	.674	.435	11.045	8	.000	-.507600	.045959	-.613581	-.401619
	Equal variances not assumed			11.045	7.201	.000	-.507600	.045959	-.615664	-.399536

Konsentrasi Chitosan 0.25%

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Viabilitas Sel	Equal variances assumed	1.318	.284	-3.372	8	.010	-.113200	.033570	-.190612	-.035788
	Equal variances not assumed			-3.372	7.760	.010	-.113200	.033570	-.191032	-.035368



Konsentrasi Chitosan 0.5%

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Levene's Test for Equality of

t-test for Equality of Means

		Variances							95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Viabilitas Sel	Equal variances assumed	.498	.501	5.401	8	.001	-.058800	.010887	-.083905	-.033695
	Equal variances not assumed			5.401	7.649	.001	-.058800	.010887	-.084107	-.033493

