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LAMPIRAN

Lampiran 1 : Etik Penelitian

KEMENTERIAN PENDIDIKAN, KEBUDAYAAN, RISET DAN TEKNOLOGI
UNIVERSITAS HASANUDDIN FAKULTAS KEDOKTERAN
KOMITE ETIK PENELITIAN UNIVERSITAS HASANUDDIN
RSPTN UNIVERSITAS HASANUDDIN
RSUP Dr. WAHIDIN SUDIROHUSODO MAKASSAR
Sekretariat : Lantai 2 Gedung Laboratorium Terpadu
JL.PERINTIS KEMERDEKAAN KAMPUS TAMALANREA KM.10 MAKASSAR 90245.
Contact Person: dr. Agussalim Bukhari.,MMed.PhD, SpGK TELP. 081241850858, 0411 5780103, Fax : 0411-581431

REKOMENDASI PERSETUJUAN ETIK
Nomor : 662/UN4.6.4.5.31/ PP36/ 2023

Tanggal: 11 September 2023

Dengan ini Menyatakan bahwa Protokol dan Dokumen yang Berhubungan Dengan Protokol berikut ini telah mendapatkan Persetujuan Etik :

No Protokol	UH23070510	No Sponsor	
Peneliti Utama	**dr. Nina Nisrina Nasir**	Sponsor	
Judul Peneliti	Efektifitas glutation terhadap kadar glukosa darah dan kadar NF-kB pada tikus (Rattus norvegicus) diabetes melitus tipe 2		
No Versi Protokol	**2**	Tanggal Versi	**1 September 2023**
No Versi PSP		Tanggal Versi	
Tempat Penelitian	RS Universitas Hasanuddin dan Fakultas Farmasi Universitas Hasanuddin Makassar		
Jenis Review	☐ Exempted ☒ Expedited ☐ Fullboard Tanggal	Masa Berlaku **11 September 2023** sampai **11 September 2024**	Frekuensi review lanjutan
Ketua KEP Universitas Hasanuddin	Nama **Prof. dr. Muh Nasrum Massi,PhD,SpMK(K)**	Tanda tangan	
Sekretaris KEP Universitas Hasanuddin	Nama **dr. Firdaus Hamid, PhD, SpMK(K)**	Tanda tangan	

Kewajiban Peneliti Utama:

- Menyerahkan Amandemen Protokol untuk persetujuan sebelum di implementasikan
- Menyerahkan Laporan SAE ke Komisi Etik dalam 24 Jam dan dilengkapi dalam 7 hari dan Lapor SUSAR dalam 72
- ti Utama menerima laporan
- oran Kemajuan (progress report) setiap 6 bulan untuk penelitian resiko tinggi dan setiap elitian resiko rendah
- ran akhir setelah Penelitian berakhir
- mpangan dari prokol yang disetujui (protocol deviation / violation)
- eraturan yang ditentukan

Lampiran 2 : Surat Izin Penelitian

HUM-RC science for a better future	ADMINISTRASI	FORMULIR 1
	Nomor : 401/09/FR1/2023	Tanggal : 18 September 2023
SURAT PENGANTAR PENELITIAN		

Kepada Yth.
Pembimbing/pendamping,
Bapak Muhammad Yusuf Usman,

Dengan ini menerangkan bahwa peneliti/mahasiswa berikut ini :

Nama	: Nina Nisrina Nasir
NIM	: P062211032
Institusi	: S2 Ilmu Biomedik Sekolah PascaSarjana UNHAS

Akan melakukan pengambilan data/ analisa bahan hayati :

Pada tanggal	: 25 Agustus 2023 s/d Selesai
Jumlah subjek	: ± 50 sampel
Jenis data	: Data Primer

Untuk penelitian dengan judul :
"Efektivitas Glutation Terhadap Kadar Glukosa Darah dan Kadar NF-kB pada Tikus Jantan (Rattus norvegicus) Diabetes Melitus Tipe 2"

Harap dilakukan pembimbingan dan pendampingan seperlunya. Terima Kasih.

Staf Administrasi,

HUM-RC science for a better future

Andi Fidyah Septiani

Catatan : Proses pengerjaan dilakukan oleh peneliti, Pendamping hanya mendampingi.
Jika pengambilan data telah selesai, **di wajibkan bagi pendamping/pembimbing;**
1. Membubuhi **paraf dan tanggal selesai** pengembilan data di formulir ini,
2. Mengisi **jumlah alat dan bahan habis pakai** yang digunakan peneliti pada form tarif penggunaan alat dan

balikan formulir yang sudah lengkap ke staf administrasi.

Lampiran 3 : Master Tabel Glukosa Darah

KELOMPOK	GDS SEBELUM PERLAKUAN	GDS SETELAH PERLAKUAN													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
K (NORMAL)															
1	54	105	99	122	82	97	22	89	74	82	112	83	79	74	92
2	112	113	109	114	107	103	99	112	114	119	93	106	86	89	103
3	145	150	131	120	92	110	69	148	110	84	67	71	93	95	97
4	134	128	100	95	82	91	45	83	72	92	110	67	71	86	52
5	137	131	104	113	108	109	50	126	102	100	113	108	109	104	51
K (NEGATIF)															
1	89	575	447	407	104	144	233	398	437	530	432	505	467	365	446
2	44	301	163	126	186	127	94	154	111	111	130	159	106	88	120
3	95	406	344	415	182	179	65	298	153	423	301	286	222	175	93
4	123	562	160	138	195	113	86	145	98	114	158	113	104	102	121
5	48	172	132	156	134	108	87	110	111	114	124	125	102	112	100
K (POSITIF)															
1	116	355	313	361	197	355	376	241	131	66	103	78	93	85	102
2	170	195	173	160	157	126	101	175	142	147	168	124	157	106	91
3	118	493	442	460	508	473	325	486	468	458	561	559	462	442	387
4	81	HIGH	464	546	170	539	327	584	465	556	406	436	550	479	276
5	123	HIGH	HIGH	565	HIGH	HIGH	501	190	188	126	126	110	169	164	335
KP-1															
1	146	498	HIGH	569	596	HIGH	274	490	HIGH	HIGH	598	HIGH	HIGH	590	HIGH
2	100	475	HIGH	HIGH	HIGH	581	234	335	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH
3	147	258	191	274	203	148	80	94	208	240	276	164	142	142	85
4	96	400	558	446	341	303	101	145	563	533	591	503	503	543	529
5	55	430	482	417	294	233	89	220	423	347	537	456	456	410	354
KP-2															
1	51	428	468	385	401	238	121	181	155	257	163	193	147	164	148
2	128	HIGH	557	440	572	440	184	172	386	599	527	456	312	308	356
3	130	398	392	420	152	214	115	253	347	297	326	419	344	342	353
4	113	255	198	166	200	126	85	196	152	282	113	141	117	104	135
5	122	539	584	554	326	469	324	472	422	HIGH	HIGH	557	500	494	492

Lampiran 4 : Master Tabel NF-kβ

PEMERIKSAAN NF-kβ SERUM

KELOMPOK	PEMERIKSAAN NFKB	
	SEBELUM	SESUDAH
K-N 1	2,12	3,07
K-N 2	1,74	1,92
K-N 3	2,05	2,46
K-N 4	1,89	2,13
K-N 5	2,21	2,30
K- 1	2,21	1,53
K- 2	2,54	2,37
K- 3	1,66	2,10
K- 4	2,36	2,55
K- 5	2,59	0,31
K+ 1	2,57	2,70
K+ 2	1,94	2,20
K+ 3	2,94	2,20
K+ 4	2,81	2,85
K+ 5	2,52	2,88
KP1 1	2,88	2,31
KP1 2	1,99	2,45
KP1 3	2,25	2,45
KP1 4	0,30	2,19
KP1 5	0,29	2,06
KP2 1	2,57	2,07
KP2 2	2,43	2,99
KP2 3	2,46	2,43
KP2 4	2,33	1,89
KP2 5	2,43	0,31

Lampiran 5. Analisis SPSS

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
STZ_Pre_N	0.238	3		0.975	3	0.700
STZ_Post_N	0.292	3		0.923	3	0.463
STZ_Pre_K_STZ	0.204	3		0.994	3	0.847
STZ_Post_STZ	0.372	3		0.782	3	0.072
STZ_Pre_MET	0.328	3		0.871	3	0.298
STZ_Post_MET	0.355	3		0.819	3	0.161
STZ_Pre_GSH	0.176	3		1.000	3	0.976
STZ_Post_GSH	0.199	3		0.995	3	0.865
STZ_Pre_MetGsh	0.377	3		0.769	3	0.052
STZ_Post_MetGsh	0.238	3		0.976	3	0.702

a. Lilliefors Significance Correction

T-Test

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	STZ_Pre_N	103.67	3	46.069	26.598
	STZ_Post_N	118.67	3	4.163	2.404
Pair 2	STZ_Pre_K_STZ	85.33	3	39.627	22.879
	STZ_Post_STZ	223.67	3	158.885	91.732
Pair 3	STZ_Pre_MET	106.67	3	22.502	12.991
	STZ_Post_MET	490.67	3	112.696	65.065
Pair 4	STZ_Pre_GSH	100.67	3	46.004	26.560
	STZ_Post_GSH	430.33	3	163.408	94.344
Pair 5	STZ_Pre_MetGsh	103.00	3	45.044	26.006
	STZ_Post_MetGsh	415.00	3	27.839	16.073

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	STZ_Pre_N - STZ_Post_N	-15.000	47.843	27.622	-133.850	103.850	-0.543	2	0.642
Pair 2	STZ_Pre_K_STZ - STZ_Post_STZ	-138.333	159.161	91.892	-533.712	257.045	-1.505	2	0.047
Pair 3	STZ_Pre_MET - STZ_Post_MET	-384.000	120.926	69.816	-684.396	-83.604	-5.500	2	0.032
Pair 4	STZ_Pre_GSH - STZ_Post_GSH	-329.667	188.590	108.883	-798.151	138.818	-3.028	2	0.049
Pair 5	STZ_Pre_MetGsh - STZ_Post_MetGsh	-312.000	22.000	12.702	-366.651	-257.349	-24.564	2	0.002

Oneway

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean Lower Bound	Upper Bound	Minimum	Maximum
STZ_Pre	N	3	103.67	46.069	26.598	-10.77	218.11	54	145
	STZ	3	85.33	39.627	22.879	-13.11	183.77	44	123
	MET	3	106.67	22.502	12.991	50.77	162.56	81	123
	GSH	3	100.67	46.004	26.560	-13.61	214.95	55	147
	MetGsh	3	103.00	45.044	26.006	-8.90	214.90	51	130
		15	99.87	35.391	9.138	80.27	119.47	44	147
STZ_Pc		3	118.67	4.163	2.404	108.32	129.01	114	122
		3	223.67	158.885	91.732	-171.02	618.36	126	407

	MET	3	490.67	112.696	65.065	210.71	770.62	361	565
	GSH	3	430.33	163.408	94.344	24.40	836.26	274	600
	MetGsh	3	415.00	27.839	16.073	345.84	484.16	385	440
	Total	15	335.67	174.769	45.125	238.88	432.45	114	600

Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
STZ_Pre	0.388	4	10	0.812
STZ_Post	3.690	4	10	0.053

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
STZ_Pre	Between Groups	847.067	4	211.767	0.127	0.969
	Within Groups	16688.667	10	1668.867		
	Total	17535.733	14			
STZ_Post	Between Groups	296740.667	4	74185.167	5.668	0.012
	Within Groups	130878.667	10	13087.867		
	Total	427619.333	14			

Post Hoc Tests

Multiple Comparisons

Tukey H

Depend	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound

STZ_Pre	N	STZ	18.333	33.355	0.980	-91.44	128.11
		MET	-3.000	33.355	1.000	-112.78	106.78
		GSH	3.000	33.355	1.000	-106.78	112.78
		MetGsh	0.667	33.355	1.000	-109.11	110.44
	STZ	N	-18.333	33.355	0.980	-128.11	91.44
		MET	-21.333	33.355	0.965	-131.11	88.44
		GSH	-15.333	33.355	0.989	-125.11	94.44
		MetGsh	-17.667	33.355	0.982	-127.44	92.11
	MET	N	3.000	33.355	1.000	-106.78	112.78
		STZ	21.333	33.355	0.965	-88.44	131.11
		GSH	6.000	33.355	1.000	-103.78	115.78
		MetGsh	3.667	33.355	1.000	-106.11	113.44
	GSH	N	-3.000	33.355	1.000	-112.78	106.78
		STZ	15.333	33.355	0.989	-94.44	125.11
		MET	-6.000	33.355	1.000	-115.78	103.78
		MetGsh	-2.333	33.355	1.000	-112.11	107.44

	MetGsh	N	-0.667	33.355	1.000	-110.44	109.11
		STZ	17.667	33.355	0.982	-92.11	127.44
		MET	-3.667	33.355	1.000	-113.44	106.11
		GSH	2.333	33.355	1.000	-107.44	112.11
STZ_Post	N	STZ	,-105.000*	93.409	0.040	-412.42	202.42
		MET	-372.000*	93.409	0.017	-679.42	-64.58
		GSH	-311.667*	93.409	0.037	-619.08	-4.25
		MetGsh	,-296.333*	93.409	0.042	-603.75	11.08
	STZ	N	105.000*	93.409	0.047	-202.42	412.42
		MET	-267.000*	93.409	0.043	-574.42	40.42
		GSH	, -206.6667*	93.409	0.045	-514.08	100.75
		MetGsh	.-191.333*	93.409	0.046	-498.75	116.08
	MET	N	372.000*	93.409	0.017	64.58	679.42
		STZ	267.000*	93.409	0.043	-40.42	574.42
		GSH	60.334	93.409	0.964	-247.08	367.75
		MetGsh	75.667	93.409	0.959	-231.75	383.08

	GSH	N	311.667*	93.409	0.037	4.25	619.08
		STZ	206.667*	93.409	0.045	-100.75	514.08
		MET	,-60.334*	93.409	0.964	-367.75	247.08
		MetGsh	15.333	93.409	1.000	-292.08	322.75
	MetGsh	N	296.333*	93.409	0.042	-11.08	603.75
		STZ	191.333*	93.409	0.046	-116.08	498.75
		MET	-75.667	93.409	0.959	-383.08	231.75
		GSH	-15.333	93.409	1.000	-322.75	292.08

Homogeneous Subsets

STZ_Pre

Tukey HSD[a]

Kelompok	N	Subset for alpha = 0.05
		1
STZ	3	85.33
GSH	3	100.67
MetGsh	3	103.00
N	3	103.67
MET	3	106.67
Sig.		0.965

STZ_Post

Tukey HSD[a]

Kelompok	N	Subset for alpha = 0.05		
		1	2	3
N	3	118.67		
STZ	3		223.67	
MetGsh	3			415.00
GSH	3			430.33
MET	3			490.67
Sig.		1.000	1.000	0.964

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 3.000.

Means for groups in homogeneous subsets are displayed.
a. Uses Harmonic Mean Sample Size = 3.000.

GDS Antar Kelompok

Oneway

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maxim
						Lower Bound	Upper Bound		
GDS_Pre	N	3	118.67	4.163	2.404	108.32	129.01	114	1
	STZ	3	223.67	158.885	91.732	-171.02	618.36	126	4
	MET	3	490.67	112.696	65.065	210.71	770.62	361	5
	GSH	3	430.33	163.408	94.344	24.40	836.26	274	6
	MetGsh	3	415.00	27.839	16.073	345.84	484.16	385	4
	Total	15	335.67	174.769	45.125	238.88	432.45	114	6
GDS_Post	N	3	97.33	5.508	3.180	83.65	111.01	92	1
	STZ	3	229.00	152.148	87.843	-148.96	606.96	116	4
	MET	3	237.67	121.138	69.939	-63.26	538.59	102	3
	GSH	3	346.33	162.636	93.898	-57.68	750.34	180	5
	MetGsh	3	285.67	44.163	25.497	175.96	395.37	235	3
	Total	15	239.20	129.316	33.389	167.59	310.81	92	5
Perubahan_GDS	N	3	21.33	9.609	5.548	-2.54	45.20	11	
	STZ	3	-5.33	22.368	12.914	-60.90	50.23	-31	
	MET	3	253.00	20.664	11.930	201.67	304.33	230	2
	GSH	3	84.00	18.193	10.504	38.81	129.19	63	
	MetGsh	3	129.33	23.352	13.482	71.32	187.34	104	1
	Total	15	96.47	96.003	24.788	43.30	149.63	-31	2

Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
	3.690	4	10	0.043
	2.663	4	10	0.095
S	0.848	4	10	0.526

Post Hoc Tests

Multiple Comparisons

Tukey HSD

Dependent Variable			Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
STZ_Post	N	STZ	,-105.000*	93.409	0.040	-412.42	202.42
		MET	-372.000*	93.409	0.017	-679.42	-64.58
		GSH	-311.667*	93.409	0.037	-619.08	-4.25
		MetGsh	,-296.333*	93.409	0.042	-603.75	11.08
	STZ	N	105.000*	93.409	0.047	-202.42	412.42
		MET	-267.000*	93.409	0.043	-574.42	40.42
		GSH	, -206.6667*	93.409	0.045	-514.08	100.75
		MetGsh	.-191.333*	93.409	0.046	-498.75	116.08
	MET	N	372.000*	93.409	0.017	64.58	679.42
		STZ	267.000*	93.409	0.043	-40.42	574.42
		GSH	60.334	93.409	0.964	-247.08	367.75
		MetGsh	75.667	93.409	0.959	-231.75	383.08

	GSH	N	311.667*	93.409	0.037	4.25	619.08
		STZ	206.667*	93.409	0.045	-100.75	514.08
		MET	,-60.334*	93.409	0.964	-367.75	247.08
		MetGsh	15.333	93.409	1.000	-292.08	322.75
	MetGsh	N	296.333*	93.409	0.042	-11.08	603.75
		STZ	191.333*	93.409	0.046	-116.08	498.75
		MET	-75.667	93.409	0.959	-383.08	231.75
		GSH	-15.333	93.409	1.000	-322.75	292.08
GDS_Post	N	STZ	-131.667	93.989	0.641	-440.99	177.66
		MET	-140.333	93.989	0.588	-449.66	168.99
		GSH	-249.000	93.989	0.134	-558.33	60.33
		MetGsh	-188.333	93.989	0.330	-497.66	120.99
	STZ	N	131.667	93.989	0.641	-177.66	440.99
		MET	-8.667	93.989	1.000	-317.99	300.66
		GSH	-117.333	93.989	0.726	-426.66	191.99
		MetGsh	-56.667	93.989	0.971	-365.99	252.66

	MET	N	140.333	93.989	0.588	-168.99	449.66
		STZ	8.667	93.989	1.000	-300.66	317.99
		GSH	-108.667	93.989	0.775	-417.99	200.66
		MetGsh	-48.000	93.989	0.984	-357.33	261.33
	GSH	N	249.000	93.989	0.134	-60.33	558.33
		STZ	117.333	93.989	0.726	-191.99	426.66
		MET	108.667	93.989	0.775	-200.66	417.99
		MetGsh	60.667	93.989	0.964	-248.66	369.99
	MetGsh	N	188.333	93.989	0.330	-120.99	497.66
		STZ	56.667	93.989	0.971	-252.66	365.99
		MET	48.000	93.989	0.984	-261.33	357.33
		GSH	-60.667	93.989	0.964	-369.99	248.66
Perubahan_GDS	N	STZ	26.667	15.900	0.487	-25.66	78.99
		MET	-231.667*	15.900	0.000	-283.99	-179.34
		GSH	-62.667*	15.900	0.018	-114.99	-10.34
		MetGsh	-108.000*	15.900	0.000	-160.33	-55.67

	STZ	N	-26.667	15.900	0.487	-78.99	25.66
		MET	-258.333*	15.900	0.000	-310.66	-206.01
		GSH	-89.333*	15.900	0.002	-141.66	-37.01
		MetGsh	-134.667*	15.900	0.000	-186.99	-82.34
	MET	N	231.667*	15.900	0.000	179.34	283.99
		STZ	258.333*	15.900	0.000	206.01	310.66
		GSH	169.000*	15.900	0.000	116.67	221.33
		MetGsh	123.667*	15.900	0.000	71.34	175.99
	GSH	N	62.667*	15.900	0.018	10.34	114.99
		STZ	89.333*	15.900	0.002	37.01	141.66
		MET	-169.000*	15.900	0.000	-221.33	-116.67
		MetGsh	-45.333	15.900	0.098	-97.66	6.99
	MetGsh	N	108.000*	15.900	0.000	55.67	160.33
		STZ	134.667*	15.900	0.000	82.34	186.99
		MET	-123.667*	15.900	0.000	-175.99	-71.34
		GSH	45.333	15.900	0.098	-6.99	97.66

GDS_Pre

Tukey HSD[a]

Kelompok	N	Subset for alpha = 0.05		
		1	2	3
N	3	118.67		
STZ	3		223.67	
MetGsh	3			415.00
GSH	3			430.33
MET	3			490.67
Sig.		1.000	1.000	0.964

Perubahan_GDS

Tukey HSD[a]

Kelompok	N	Subset for alpha = 0.05		
		1	2	3
STZ	3	-5.33		
N	3	21.33		
GSH	3		84.00	
MetGsh	3		129.33	
MET	3			253.0
Sig.		0.487	0.098	1.00

GDS Pre dan Post

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
GDS_Pre_KN	0.292	3		0.923	3	0.463
GDS_Post_KN	0.191	3		0.997	3	0.900
GDS_Pre_K_Negatif	0.372	3		0.782	3	0.072
GDS_Post_K_Negatif	0.320	3		0.883	3	0.334
GDS_Pre_K_Positif	0.355	3		0.819	3	0.161
GDS_Post_K_Positif	0.291	3		0.925	3	0.470
GDS_Pre_KP1	0.199	3		0.995	3	0.865
GDS_Post_KP1	0.185	3		0.998	3	0.922
GDS_Pre_KP2	0.238	3		0.976	3	0.702
GDS_Post_KP2	0.344	3		0.841	3	0.217

T-T

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pai	DS_Pre_KN	118.67	3	4.163	2.404

	GDS_Post_KN	97.33	3	5.508	3.180
Pair 2	GDS_Pre_K_Negatif	223.67	3	158.885	91.732
	GDS_Post_K_Negatif	229.00	3	152.148	87.843
Pair 3	GDS_Pre_K_Positif	490.67	3	112.696	65.065
	GDS_Post_K_Positif	237.67	3	121.138	69.939
Pair 4	GDS_Pre_KP1	430.33	3	163.408	94.344
	GDS_Post_KP1	346.33	3	162.636	93.898
Pair 5	GDS_Pre_KP2	415.00	3	27.839	16.073
	GDS_Post_KP2	285.67	3	44.163	25.497

Paired Samples Test

		Paired Differences					t	df	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	GDS_Pre_KN - GDS_Post_KN	21.333	9.609	5.548	-2.537	45.203	3.845	2	
Pair 2	GDS_Pre_K_Negatif - GDS_Post_K_Negatif	-5.333	22.368	12.914	-60.899	50.232	-0.413	2	
Pair 3	GDS_Pre_K_Positif - GDS_Post_K_Positif	253.000	20.664	11.930	201.668	304.332	21.206	2	
Pair 4	GDS_Pre_KP1 - GDS_Post_KP1	84.000	18.193	10.504	38.805	129.195	7.997	2	
Pair 5	GDS_Pre_KP2 - GDS_Post_KP2	129.333	23.352	13.482	71.323	187.344	9.593	2	

NF-kβ Antar Kelompok

Oneway

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean Lower Bound	Upper Bound	Minimum	Max
NFKB_		3	1.9467	0.24007	0.13860	1.3503	2.5430	1.74	
		3	2.1867	0.46490	0.26841	1.0318	3.3415	1.66	
		3	2.6767	0.22942	0.13246	2.1068	3.2466	2.52	
		3	2.3733	0.45764	0.26422	1.2365	3.5102	1.99	

	KP-2	3	2.4433	0.12055	0.06960	2.1439	2.7428	2.33
	Total	15	2.3253	0.37868	0.09777	2.1156	2.5350	1.66
NFKB_Post	KN	3	2.1167	0.19035	0.10990	1.6438	2.5895	1.92
	K-	3	2.3400	0.44508	0.25697	1.2343	3.4457	1.83
	K+	3	2.5933	0.11372	0.06566	2.3108	2.8758	2.50
	KP-1	3	2.4033	0.44276	0.25563	1.3035	3.5032	2.05
	KP-2	3	1.0233	0.92045	0.53142	-1.2632	3.3099	0.34
	Total	15	2.0953	0.71904	0.18565	1.6971	2.4935	0.34
Perubahan_NFKB	KN	3	-0.1700	0.07550	0.04359	-0.3575	0.0175	-0.24
	K-	3	-0.1533	0.03786	0.02186	-0.2474	-0.0593	-0.18
	K+	3	0.0833	0.11846	0.06839	-0.2109	0.3776	0.01
	KP-1	3	-0.0300	0.02646	0.01528	-0.0957	0.0357	-0.06
	KP-2	3	1.4200	0.82395	0.47571	-0.6268	3.4668	0.50
	Total	15	0.2300	0.69888	0.18045	-0.1570	0.6170	-0.24

Test of Homogeneity of Variances

	Levene Statistic	df1	df2	Sig.
NFKB_Pre	2.191	4	10	0.143
NFKB_Post	4.729	4	10	0.021
Perubahan_NFKB	8.217	4	10	0.003

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
NFKB_Pre	Between Groups	0.907	4	0.227	2.060	0.161
	Within Groups	1.101	10	0.110		
	Total	2.008	14			

Multiple Comparisons

Tukey HSD

Dependent Variable			Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
NFKB_Pre	KN	K-	-0.24000	0.27089	0.896	-1.1315	0.6515
		K+	-0.73000	0.27089	0.125	-1.6215	0.1615
		KP-1	-0.42667	0.27089	0.543	-1.3182	0.4649
		KP-2	-0.49667	0.27089	0.407	-1.3882	0.3949
	K-	KN	0.24000	0.27089	0.896	-0.6515	1.1315
		K+	-0.49000	0.27089	0.419	-1.3815	0.4015
		KP-1	-0.18667	0.27089	0.954	-1.0782	0.7049
		KP-2	-0.25667	0.27089	0.872	-1.1482	0.6349
	K+	KN	0.73000	0.27089	0.125	-0.1615	1.6215
		K-	0.49000	0.27089	0.419	-0.4015	1.3815
		KP-1	0.30333	0.27089	0.793	-0.5882	1.1949
		KP-2	0.23333	0.27089	0.905	-0.6582	1.1249
	KP-1	KN	0.42667	0.27089	0.543	-0.4649	1.3182
		K-	0.18667	0.27089	0.954	-0.7049	1.0782
		K+	-0.30333	0.27089	0.793	-1.1949	0.5882
		KP-2	-0.07000	0.27089	0.999	-0.9615	0.8215
	KP-2	KN	0.49667	0.27089	0.407	-0.3949	1.3882
		K-	0.25667	0.27089	0.872	-0.6349	1.1482
		K+	-0.23333	0.27089	0.905	-1.1249	0.6582
		KP-1	0.07000	0.27089	0.999	-0.8215	0.9615

NFKB_Post	KN	K-	-0.22333	0.41481	0.981	-1.5885	1.1419
		K+	-0.47667	0.41481	0.778	-1.8419	0.8885
		KP-1	-0.28667	0.41481	0.954	-1.6519	1.0785
		KP-2	1.09333	0.41481	0.136	-0.2719	2.4585
	K-	KN	0.22333	0.41481	0.981	-1.1419	1.5885
		K+	-0.25333	0.41481	0.970	-1.6185	1.1119
		KP-1	-0.06333	0.41481	1.000	-1.4285	1.3019
		KP-2	1.31667	0.41481	0.060	-0.0485	2.6819
	K+	KN	0.47667	0.41481	0.778	-0.8885	1.8419
		K-	0.25333	0.41481	0.970	-1.1119	1.6185
		KP-1	0.19000	0.41481	0.990	-1.1752	1.5552
		KP-2	1.57000*	0.41481	0.023	0.2048	2.9352
	KP-1	KN	0.28667	0.41481	0.954	-1.0785	1.6519
		K-	0.06333	0.41481	1.000	-1.3019	1.4285
		K+	-0.19000	0.41481	0.990	-1.5552	1.1752
		KP-2	1.38000*	0.41481	0.047	0.0148	2.7452
	KP-2	KN	-1.09333	0.41481	0.136	-2.4585	0.2719
		K-	-1.31667	0.41481	0.060	-2.6819	0.0485
		K+	-1.57000*	0.41481	0.023	-2.9352	-0.2048
		KP-1	-1.38000*	0.41481	0.047	-2.7452	-0.0148
	KN	K-	-0.01667	0.30567	1.000	-1.0227	0.9893
		K+	-0.25333	0.30567	0.916	-1.2593	0.7527
		KP-1	-0.14000	0.30567	0.990	-1.1460	0.8660

		KP-2	-1.59000*	0.30567	0.003	-2.5960	-0.5840
	K-	KN	0.01667	0.30567	1.000	-0.9893	1.0227
		K+	-0.23667	0.30567	0.932	-1.2427	0.7693
		KP-1	-0.12333	0.30567	0.994	-1.1293	0.8827
		KP-2	-1.57333*	0.30567	0.003	-2.5793	-0.5673
	K+	KN	0.25333	0.30567	0.916	-0.7527	1.2593
		K-	0.23667	0.30567	0.932	-0.7693	1.2427
		KP-1	0.11333	0.30567	0.995	-0.8927	1.1193
		KP-2	-1.33667*	0.30567	0.010	-2.3427	-0.3307
	KP-1	KN	0.14000	0.30567	0.990	-0.8660	1.1460
		K-	0.12333	0.30567	0.994	-0.8827	1.1293
		K+	-0.11333	0.30567	0.995	-1.1193	0.8927
		KP-2	-1.45000*	0.30567	0.005	-2.4560	-0.4440
	KP-2	KN	1.59000*	0.30567	0.003	0.5840	2.5960
		K-	1.57333*	0.30567	0.003	0.5673	2.5793
		K+	1.33667*	0.30567	0.010	0.3307	2.3427
		KP-1	1.45000*	0.30567	0.005	0.4440	2.4560

Homogeneous Subsets

NFKB_Pre

Tukey HSD[a]

	N	Subset for alpha = 0.05
		1
	3	1.9467
	3	2.1867
	3	2.3733

KP-2	3	2.4433
K+	3	2.6767
Sig.		0.125

Perubahan_NFKB

Tukey HSD[a]

Kelompok	N	Subset for alpha = 0.05
KN	3	1.4200
K-	3	1.4200
KP-1	3	1.4200
KP-2	3	1.4200
K+	3	1.4200
Sig.		0.916

Ranks

	Kelompok	N	Mean Rank
NFKB_Post	KN	3	6.67
	K-	3	9.00
	K+	3	12.00
	KP-1	3	9.33
	KP-2	3	3.00
	Total	15	

Test Statistics[a,b]

	NFKB_Post
Chi-Square	6.833
df	4
Asymp. Sig.	0.145

a. Kruskal Wallis Test

b. Grouping Variable: Kelompok

NfKb Pre dan Post

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
NFKB_Pre_KN	0.260	3		0.958	3	0.607
NFKB_Post_KN	0.195	3		0.996	3	0.884
NFKB_Pre_K_Negatif	0.312	3		0.896	3	0.372
NFKB_Post_K_Negatif	0.340	3		0.849	3	0.237
NFKB_Pre_K_Positif	0.346	3		0.838	3	0.209
NFKB_Post_K_Positif	0.282	3		0.936	3	0.510
NFKB_Pre_KP1	0.273	3		0.946	3	0.550
NFKB_Post_KP1	0.294	3		0.921	3	0.457
NFKB_Pre_KP2	0.211	3		0.991	3	0.817
NFKB_Post_KP2	0.320	3		0.883	3	0.334

T-Test

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	NFKB_Pre_KN	1.9467	3	0.24007	0.13860
	NFKB_Post_KN	2.1167	3	0.19035	0.10990
Pair 2	NFKB_Pre_K_Negatif	2.1867	3	0.46490	0.26841
	NFKB_Post_K_Negatif	2.3400	3	0.44508	0.25697
Pair 3	NFKB_Pre_K_Positif	2.6767	3	0.22942	0.13246
	NFKB_Post_K_Positif	2.5933	3	0.11372	0.06566
Pair 4	NFKB_Pre_KP1	2.3733	3	0.45764	0.26422
	NFKB_Post_KP1	2.4033	3	0.44276	0.25563
	NFKB_Pre_KP2	2.4433	3	0.12055	0.06960
	NFKB_Post_KP2	1.0233	3	0.92045	0.53142

Paired Samples Test

		Paired Differences					t	df	Sig (2 tailed
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	NFKB_Pre_KN - NFKB_Post_KN	-0.17000	0.07550	0.04359	-0.35755	0.01755	-3.900	2	0.0
Pair 2	NFKB_Pre_K_Negatif - NFKB_Post_K_Negatif	-0.15333	0.03786	0.02186	-0.24738	-0.05929	-7.015	2	0.0
Pair 3	NFKB_Pre_K_Positif - NFKB_Post_K_Positif	0.08333	0.11846	0.06839	-0.21094	0.37761	1.218	2	0.3
Pair 4	NFKB_Pre_KP1 - NFKB_Post_KP1	-0.03000	0.02646	0.01528	-0.09572	0.03572	-1.964	2	0.1
Pair 5	NFKB_Pre_KP2 - NFKB_Post_KP2	1.42000	0.82395	0.47571	-0.62681	3.46681	2.985	2	0.0

Lampiran 6 : Dokumentasi Penelitian

Glutathione


Streptozotocin


Obat metfomin


Tikus Jantan Wistar (*Rattus norvergicus*)


Strip glukosa darah


Alat pemeriksaan glukosa darah


Mengadaptasikan tikus


Pengelompokan tikus


Pakan tikus


Pemgambilan sampel darah di ekor


Pemeriksaan glukosa sebelum perlakuan


sampel darah sebelum perlakuan


Injeksi STZ


Pengambilan darah setelah perlakuan


Pengambilan darah setelah perlakuan

Sentrifugasi darah

Pemipetan serum

Pemeriksaan metode ELISA

Pemeriksaan metode ELISA

Pemeriksaan metode ELISA

Pemeriksaan metode ELISA

Pemeriksaan metode ELISA

Pemeriksaan metode ELISA

Lampiran 7: Surat Keterangan Bebas Pustaka

KEMENTERIAN PENDIDIKAN, KEBUDAYAAN,
RISET DAN TEKNOLOGI
UNIVERSITAS HASANUDDIN
PERPUSTAKAAN

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SURAT KETERANGAN BEBAS PUSTAKA
Nomor: 3268/UN4.1.1.4/TA.01.02/2024

Perpustakaan Universitas Hasanuddin dengan ini menerangkan bahwa :

Nama	: Nina Nisrina Nasir
Nomor Pokok	: P061122032
Program Studi	: Ilmu Biomedik (S2)
Jenjang	: S2
Fakultas	: Fak. Sekolah Pascasarjana
Alamat	: Jalan Pengayoman, Taman Permata Sari II No.3 Makassar

Mahasiswa tersebut diatas benar tidak mempunyai pinjaman bahan pustaka pada Perpustakaan Universitas Hasanuddin, dan surat keterangan ini berlaku sampai dengan :

20 Agustus 2024

Demikian keterangan ini kami berikan kepada yang bersangkutan untuk digunakan sebagaimana mestinya.

Makassar, 22 Mei 2024

Kepala,
Ketua Divisi Pelayanan dan
Penjaminan Mutu

Dr. Iskandar, S.Sos., M.M.
NIP. 197705192001121001

Tembusan yth:
1. Kepala Perpustakaan Unhas
2. Arsip

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2. Tempat, tgl. lahir : Ujung Pandang, 11 Juni 1984
3. Alamat : Jalan Pengayoman, Taman Permata Sari II, No 3 Makassar
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B. RIWAYAT PENDIDIKAN

1. Tamat SLTA tahun 2002 di SMAN 1 Makassar
2. Sarjana (S1) Kedokteran tahun 2006 di Universitas Muslim Indonesia
3. Profesi Kedokteran (S1) tahun 2009 di Universitas Muslim Indonesia
4. Sarjana (S2) Ilmu Biomedik tahun 2024 (masih berlangsung) di Universitas Hasanuddin

C. KARYA ILMIAH YANG TELAH DIPUBLIKASIKAN

Nasir, Nina Nisrina, et al. Effectiveness of glutathione on blood glucose and serum nuclear factor kappa beta (NF-kB) levels in rats (Rattus norvegicus) type 2 diabetes mellitus model. *Community Practitioner,* 2024. 21(05): 1573-1580. DOI: 10.5281/zenodo.11392709.


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