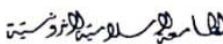


Lampiran 1.




UNIVERSITAS ISLAM INDONESIA
FAKULTAS KEDOKTERAN
 Jl. Kaliurang 14,5 Tel. (0274) 898444 ext. 2096, 2101; Fax. (0274) 898444 ext. 2007
 E-mail : fk@uii.ac.id, YOGYAKARTA 55584

Nomor : 11/Ka.Kom.Et/70/KE/IX/2019

KETERANGAN LOLOS KAJI ETIK

ETHICAL APPROVAL

Komite Etik Penelitian Kedokteran dan Kesehatan Fakultas Kedokteran Universitas Islam Indonesia dalam upaya melindungi hak asasi dan kesejahteraan subyek penelitian kedokteran dan kesehatan, telah mengkaji dengan teliti protokol berjudul :

The Ethics Committee of the Faculty of Medicine, Islamic University of Indonesia, with regards of the protection of human rights and welfare in medical and health research, has carefully reviewed the research protocol entitled :

"Uji Aktivitas Antimalaria Efek Ekstrak Etanol Daun Kenikir (*Cosmos caudatus Kunth*) pada Mencit yang Diinduksi *Plasmodium berghei*"

Peneliti Utama : Irma Nurvita Zerlinda
Principal Investigator

Nama Institusi : Program Studi Farmasi FMIPA UII
Name of the Institution

dan telah menyetujui protokol tersebut diatas.
and approved the above-mentioned protocol.

Yogyakarta, 10 Desember 2019

 dr. Kahma Yuandana, M.Sc., Sp.PK

***Ethical Approval** berlaku satu tahun dari tanggal persetujuan

****Peneliti berkewajiban**

1. Menjaga kerahasiaan identitas subyek penelitian
2. Memberitahukan status penelitian apabila :
 - a. Setelah masa berlakunya keterangan lolos kaji etik, penelitian masih belum selesai, dalam hal ini *ethical clearance* harus diperpanjang
 - b. Penelitian berhenti di tengah jalan
3. Melaporkan kejadian serius yang tidak diinginkan (*serious adverse events*)
4. Peneliti tidak boleh melakukan tindakan apapun pada subyek sebelum penelitian lolos kaji etik dan *informed consent*

Lampiran 2.



UNIVERSITAS GADJAH MADA
FAKULTAS BIOLOGI
LABORATORIUM SISTEMATIKA TUMBUHAN

Jalan Teknika Selatan Sekip Utara Yogyakarta 55281 Telpun (0274) 6492262/6492272, Fax: (0274) 580839

SURAT KETERANGAN

Nomor : 014681/S.Tb./X/2019

Yang bertanda tangan dibawah ini, Kepala Laboratorium Sistematika Tumbuhan Fakultas Biologi UGM, menerangkan dengan sesungguhnya bahwa,

Nama : Irma Nurvita Zerlinda
NIM : 15613063
Asal instansi : Fakultas MIPA – UII Yogyakarta

telah melakukan identifikasi tumbuhan dengan hasil sebagai berikut,

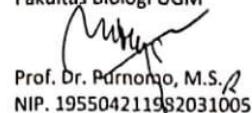
Kingdom : Plantae
Divisio : Tracheophyta
Classis : Magnoliopsida
Ordo : Asterales
Familia : Asteraceae
Genus : Cosmos
Species : *Cosmos caudatus* Kunth.
Sinonim : *Bidens berteriana* Spreng, *Bidens carnea* Heer.,
Bidens caudata (Kunth.) Sch. Bip., *Cosmea caudata* (Kunth.) Spreng
Nama Lokal : Kenikir, Curing

identifikasi tersebut dibantu oleh Abdul Razaq Chasani, Ph.D
Demikian surat keterangan ini diberikan untuk dapat dipergunakan seperlunya.

Mengetahui,
Dekan Fakultas Biologi
Universitas Gadjah Mada


Prof. Dr. Budi Setiadi Daryono, M.Agr.Sc.
NIP. 197003261995121001

Yogyakarta, 14 Oktober 2019
Kepala Laboratorium
Sistematika Tumbuhan
Fakultas Biologi UGM


Prof. Dr. Purnomo, M.S.
NIP. 195504211982031005

Lampiran 3.

$$\begin{aligned} \% \text{ Parasitemia} &= \frac{\text{Jumlah eritrosit terinfeksi P. berghei}}{1000 \text{ eritrosit}} \times 100\% \\ &= \frac{145}{1000} \times 100\% \\ &= 14.5 \% \end{aligned}$$

Diketahui :

- Parasitemia : 14,5 %
- Jumlah eritrosit (Hemositometer) : 770

Perhitungan pemberian darah pada hewan uji

- Jumlah eritrosit / μl darah $= \frac{770 \times 200}{0.02}$
 $= 7.700.000$ eritrosit/ μl darah
- Jumlah parasite / μl darah $= \text{Jumlah eritrosit}/\mu\text{l darah} \times \left(\frac{\% \text{ Parasitemia}}{100}\right)$
 $= 7.700.000 \times \left(\frac{14,5}{100}\right)$
 $= 1.116.500$ parasite/ μl darah
- Volume darah per-mencit $= \frac{10^6}{\text{Jumlah parasite} / \mu\text{l darah}}$
 $= \frac{10^6}{1.116.500}$
 $= 0.8956$ μl darah
- Total darah yang diambil $= \text{jumlah mencit uji} \times \text{volume darah per-mencit}$
 $= 10 \times 0.8956$
 $= 8,95656$ μl

Untuk 10 mencit :

$$2000 \mu\text{l} = 5 \mu\text{l} + \text{total darah yang diambil} + \text{PBS}$$

$$2000 \mu\text{l} = 5 \mu\text{l} + 8,95656 + \text{PBS}$$

$$19860 \mu\text{l} = \text{PBS}$$

Lampiran 4.

➤ % Parasitemia mencit perlakuan hari ke-0 hingga hari ke-7

| Konsentrasi | H0 | H1 | H2 | H3 | H4 | H5 | H6 | H7 | H8 |
|-------------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 mg/kgBB | 3.44 | 7.95 | 10.62 | 7.80 | 7.72 | 5.77 | 3.65 | 3.03 | 2.23 |
| 100 mg/kgBB | 3.69 | 11.76 | 13.07 | 11.68 | 9.29 | 15.87 | 12.97 | 11.19 | 7.89 |
| 200 mg/khBB | 4.20 | 11.01 | 12.69 | 16.96 | 14.63 | 16.18 | 13.79 | 10.67 | 10.26 |
| K.Negatif | 4.15 | 7.53 | 8.02 | 9.78 | 12.63 | 16.74 | 22.49 | 25.43 | 27.91 |
| K.Positif | 3.61 | 5.50 | 1.69 | 4.11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | 3.82 | 8.75 | 9.22 | 10.7 | 8.85 | 10.91 | 10.58 | 10.06 | 9.66 |



Lampiran 5.

| Confidence Limits | | | | | | | |
|-------------------|-------------|---------------------------------------|-------------|-------------|--|-------------|-------------|
| | Probability | 95% Confidence Limits for Konsentrasi | | | 95% Confidence Limits for $\log(\text{Konsentrasi})^b$ | | |
| | | Estimate | Lower Bound | Upper Bound | Estimate | Lower Bound | Upper Bound |
| | .010 | 7366.269 | 2891.156 | 39272.498 | 3.867 | 3.461 | 4.594 |
| | .020 | 5035.360 | 2148.265 | 23087.858 | 3.702 | 3.332 | 4.363 |
| | .030 | 3955.539 | 1779.119 | 16483.741 | 3.597 | 3.250 | 4.217 |
| | .040 | 3298.754 | 1543.753 | 12794.070 | 3.518 | 3.189 | 4.107 |
| | .050 | 2845.817 | 1375.393 | 10411.564 | 3.454 | 3.138 | 4.018 |
| | .060 | 2509.638 | 1246.588 | 8736.981 | 3.400 | 3.096 | 3.941 |
| | .070 | 2247.715 | 1143.575 | 7492.105 | 3.352 | 3.058 | 3.875 |
| | .080 | 2036.477 | 1058.551 | 6528.958 | 3.309 | 3.025 | 3.815 |
| | .090 | 1861.652 | 986.699 | 5761.116 | 3.270 | 2.994 | 3.761 |
| | .100 | 1714.022 | 924.854 | 5134.525 | 3.234 | 2.966 | 3.711 |
| | .150 | 1217.461 | 707.207 | 3188.589 | 3.085 | 2.850 | 3.504 |
| P | .200 | 927.648 | 571.119 | 2184.579 | 2.967 | 2.757 | 3.339 |
| R | .250 | 734.662 | 475.211 | 1580.092 | 2.866 | 2.677 | 3.199 |
| O | .300 | 595.829 | 402.676 | 1181.879 | 2.775 | 2.605 | 3.073 |
| B | .350 | 490.713 | 345.167 | 903.621 | 2.691 | 2.538 | 2.956 |
| I | .400 | 408.170 | 297.977 | 700.966 | 2.611 | 2.474 | 2.846 |
| T | .450 | 341.549 | 258.203 | 548.833 | 2.533 | 2.412 | 2.739 |
| a | .500 | 286.611 | 223.919 | 432.018 | 2.457 | 2.350 | 2.636 |
| | .550 | 240.509 | 193.761 | 340.815 | 2.381 | 2.287 | 2.533 |
| | .600 | 201.254 | 166.680 | 268.797 | 2.304 | 2.222 | 2.429 |
| | .650 | 167.401 | 141.769 | 211.636 | 2.224 | 2.152 | 2.326 |
| | .700 | 137.868 | 118.153 | 166.424 | 2.139 | 2.072 | 2.221 |
| | .750 | 111.814 | 95.063 | 131.102 | 2.048 | 1.978 | 2.118 |
| | .800 | 88.553 | 72.445 | 103.535 | 1.947 | 1.860 | 2.015 |
| | .850 | 67.473 | 51.266 | 80.948 | 1.829 | 1.710 | 1.908 |
| | .900 | 47.926 | 32.464 | 60.703 | 1.681 | 1.511 | 1.783 |
| | .910 | 44.125 | 29.019 | 56.731 | 1.645 | 1.463 | 1.754 |
| | .920 | 40.337 | 25.675 | 52.737 | 1.606 | 1.410 | 1.722 |
| | .930 | 36.546 | 22.431 | 48.694 | 1.563 | 1.351 | 1.687 |

| | | | | | | |
|------|--------|--------|--------|-------|-------|-------|
| .940 | 32.732 | 19.280 | 44.565 | 1.515 | 1.285 | 1.649 |
| .950 | 28.865 | 16.215 | 40.302 | 1.460 | 1.210 | 1.605 |
| .960 | 24.902 | 13.224 | 35.830 | 1.396 | 1.121 | 1.554 |
| .970 | 20.767 | 10.285 | 31.025 | 1.317 | 1.012 | 1.492 |
| .980 | 16.314 | 7.359 | 25.639 | 1.213 | .867 | 1.409 |
| .990 | 11.152 | 4.336 | 19.006 | 1.047 | .637 | 1.279 |

a. A heterogeneity factor is used.

b. Logarithm base = 10.



Lampiran 6.

- Uji Normalitas

Descriptives^a

| | satuan mg/kgBB | | Statistic | Std. Error | |
|--------------|----------------------------------|----------------------------------|-------------|------------|---------|
| Penghambatan | Dosis 50 | Mean | | 92.0100 | .64244 |
| | | 95% Confidence Interval for Mean | Lower Bound | 90.2263 | |
| | | | Upper Bound | 93.7937 | |
| | | 5% Trimmed Mean | | 92.0379 | |
| | | Median | | 92.2967 | |
| | | Variance | | 2.064 | |
| | | Std. Deviation | | 1.43653 | |
| | | Minimum | | 89.97 | |
| | | Maximum | | 93.55 | |
| | | Range | | 3.58 | |
| | | Interquartile Range | | 2.69 | |
| | | Skewness | | -.607 | .913 |
| | | Kurtosis | | -.827 | 2.000 |
| | | Dosis 100 | Mean | | 71.7306 |
| | 95% Confidence Interval for Mean | | Lower Bound | 64.3172 | |
| | | | Upper Bound | 79.1439 | |
| | 5% Trimmed Mean | | 71.7445 | | |
| | Median | | 71.8739 | | |
| | Variance | | 35.647 | | |
| | Std. Deviation | | 5.97047 | | |
| | Minimum | | 63.63 | | |
| | Maximum | | 79.58 | | |
| | Range | | 15.94 | | |
| | Interquartile Range | | 10.75 | | |
| | Skewness | | -.089 | .913 | |
| | Kurtosis | | .076 | 2.000 | |
| | Dosis 200 | | Mean | | 63.2390 |
| | | 95% Confidence Interval for Mean | Lower Bound | 59.6716 | |
| | | | Upper Bound | 66.8064 | |
| | | 5% Trimmed Mean | | 63.2350 | |

| | | | | | |
|----------|----------------------------------|---------------------|-------------|----------|----------|
| | | Median | 63.0957 | | |
| | | Variance | 8.255 | | |
| | | Std. Deviation | 2.87307 | | |
| | | Minimum | 60.23 | | |
| | | Maximum | 66.32 | | |
| | | Range | 6.09 | | |
| | | Interquartile Range | 5.73 | | |
| | | Skewness | .062 | .913 | |
| | | Kurtosis | -2.926 | 2.000 | |
| | | kontrol Negatif | Mean | .0000 | 11.60971 |
| | 95% Confidence Interval for Mean | | Lower Bound | -32.2337 | |
| | | | Upper Bound | 32.2337 | |
| | 5% Trimmed Mean | | .0060 | | |
| | Median | | -9.1007 | | |
| | Variance | | 673.927 | | |
| | Std. Deviation | | 25.96010 | | |
| | Minimum | | -29.70 | | |
| | Maximum | | 29.60 | | |
| | Range | | 59.30 | | |
| | Interquartile Range | 49.80 | | | |
| Skewness | .247 | .913 | | | |
| Kurtosis | -2.533 | 2.000 | | | |

a. Penghambatan is constant when satuan mg/kgBB = Kontrol Positif. It has been omitted.

Tests of Normality^c

| | satuan mg/kgBB | Kolmogorov-Smirnov ^a | | | Shapiro-Wilk | | |
|--------------|-----------------|---------------------------------|----|-------|--------------|----|-------|
| | | Statistic | df | Sig. | Statistic | df | Sig. |
| Penghambatan | Dosis 50 | .179 | 5 | .200* | .959 | 5 | .802 |
| | Dosis 100 | .124 | 5 | .200* | .999 | 5 | 1.000 |
| | Dosis 200 | .228 | 5 | .200* | .865 | 5 | .248 |
| | kontrol Negatif | .237 | 5 | .200* | .896 | 5 | .387 |

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

c. Penghambatan is constant when satuan mg/kgBB = Kontrol Positif. It has been omitted.

- **Uji One Way ANOVA**

Test of Homogeneity of Variances

Penghambatan

| Levene Statistic | df1 | df2 | Sig. |
|------------------|-----|-----|------|
| 20.801 | 4 | 20 | .000 |

ANOVA

Penghambatan

| | Sum of Squares | df | Mean Square | F | Sig. |
|----------------|----------------|----|-------------|--------|------|
| Between Groups | 31135.799 | 4 | 7783.950 | 54.063 | .000 |
| Within Groups | 2879.566 | 20 | 143.978 | | |
| Total | 34015.365 | 24 | | | |

- **Post Hoc Tests**

Multiple Comparisons

Dependent Variable: Penghambatan

Tukey HSD

| (I) satuan mg/kgBB | (J) satuan mg/kgBB | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
|-----------------------|-----------------------|-----------------------------|------------|------|-------------------------|-------------|
| | | | | | Lower Bound | Upper Bound |
| Dosis 50 | Dosis 100 | 20.27947 | 7.58889 | .094 | -2.4293 | 42.9883 |
| | Dosis 200 | 28.77105* | 7.58889 | .009 | 6.0622 | 51.4799 |
| | kontrol Negatif | 92.01003* | 7.58889 | .000 | 69.3012 | 114.7188 |
| | Kontrol Positif | -7.98997 | 7.58889 | .828 | -30.6988 | 14.7188 |
| Dosis 100 | Dosis 50 | -20.27947 | 7.58889 | .094 | -42.9883 | 2.4293 |
| | Dosis 200 | 8.49158 | 7.58889 | .795 | -14.2172 | 31.2004 |
| | kontrol Negatif | 71.73056* | 7.58889 | .000 | 49.0217 | 94.4394 |
| | Kontrol Positif | -28.26944* | 7.58889 | .010 | -50.9783 | -5.5606 |
| Dosis 200 | Dosis 50 | -28.77105* | 7.58889 | .009 | -51.4799 | -6.0622 |
| | Dosis 100 | -8.49158 | 7.58889 | .795 | -31.2004 | 14.2172 |
| | kontrol Negatif | 63.23898* | 7.58889 | .000 | 40.5302 | 85.9478 |
| | Kontrol Positif | -36.76102* | 7.58889 | .001 | -59.4698 | -14.0522 |
| kontrol Negatif | Dosis 50 | -92.01003* | 7.58889 | .000 | -114.7188 | -69.3012 |
| | Dosis 100 | -71.73056* | 7.58889 | .000 | -94.4394 | -49.0217 |
| | Dosis 200 | -63.23898* | 7.58889 | .000 | -85.9478 | -40.5302 |
| | Kontrol Positif | -100.00000* | 7.58889 | .000 | -122.7088 | -77.2912 |

| | | | | | | |
|---------|-----------------|------------|---------|------|----------|----------|
| | Dosis 50 | 7.98997 | 7.58889 | .828 | -14.7188 | 30.6988 |
| Kontrol | Dosis 100 | 28.26944* | 7.58889 | .010 | 5.5606 | 50.9783 |
| Positif | Dosis 200 | 36.76102* | 7.58889 | .001 | 14.0522 | 59.4698 |
| | kontrol Negatif | 100.00000* | 7.58889 | .000 | 77.2912 | 122.7088 |

*. The mean difference is significant at the 0.05 level.

