

LAMPIRAN

Lampiran 1. Surat Keterangan Ethical Clearance

9/28/21, 11:04 AM

KEPK-RSDM



HEALTH RESEARCH ETHICS COMMITTEE
KOMISI ETIK PENELITIAN KESEHATAN

Dr. Moewardi General Hospital
RSUD Dr. Moewardi

ETHICAL CLEARANCE
KELAIKAN ETIK

Nomor : 890 / IX / HREC / 2021

The Health Research Ethics Committee Dr. Moewardi
Komisi Etik Penelitian Kesehatan RSUD Dr. Moewardi

after reviewing the proposal design, hereby to certify
setelah menilai rancangan penelitian yang diusulkan, dengan ini menyatakan

That the research proposal with topic :
Bahwa usulan penelitian dengan judul

UJI EFEKTIVITAS ANTIPIRETIK EKSTRAK ETANOL DAN FRAKSI POLAR DAUN SIRSAK (*Annona muricata* L.) PADA TIKUS PUTIH (*Rattus norvegicus*) JANTAN YANG DIINDUKSI VAKSIN DPT-HB

Principal investigator
Peneliti Utama

Location of research
Lokasi Tempat Penelitian

Is ethically approved
Dinyatakan layak etik

- Melaningsih
24185600A

- Laboratorium farmakologi dan laboratorium bahan alam
- Universitas Setia Budi Surakarta

Issued on : 28 September 2021

Chairman
Ketua


Dr. Wahyu Dwi Alimoko, Sp.F.
19770224 201001 1 004

http://ikm.kemkes.go.id/nomor/etk/197702242010011004

Lampiran 2. Surat Keterangan Hewan Uji

"ABIMANYU FARM"

✓ Mencit putih jantan ✓ Tikus Wistar ✓ Sesa Webster ✓ Cacing
 ✓ Mencit Balb/C ✓ Kalinci New Zealand
 Ngampon RT 04 / RW 04, Majosongo Kec. Jebres Surakarta, Phone 085 629 994 33 / Lab USB Ska

Yang bertanda tangan di bawah ini:

Nama : Sigit Pramono

Selaku pengelola Abimanyu Farm, menerangkan bahwa hewan uji yang digunakan untuk penelitian, oleh:

Nama : Melaningsih

NIM : 24185600A

Institusi : Universitas Setia Budi Surakarta

Merupakan hewan uji dengan spesifikasi sebagai berikut:

Jenis hewan : Tikus Wistar

Umur : 2-3 bulan

Jumlah : 20 ekor

Jenis kelamin : Jantan

Keterangan : Sehat

Asal-usul : Unit Pengembangan Hewan Percobaan UGM Yogyakarta

Yang pengembangan dan pengelolaannya disesuaikan standar baku penelitian. Demikian surat keterangan ini dibuat untuk digunakan sebagaimana mestinya.

Surakarta, 23 Desember 2021

Hormat kami



Sigit Pramono
 "ABIMANYU FARM"

Lampiran 3. Surat Keterangan Hasil Determinasi



KEMENTERIAN KESEHATAN REPUBLIK INDONESIA
BADAN PENELITIAN DAN PENGEMBANGAN KESEHATAN
 BALAI BESAR PENELITIAN DAN PENGEMBANGAN
 TANAMAN OBAT DAN OBAT TRADISIONAL
 Jalan Lawu No.11 Tawangmangu, Karanganyar, Jawa Tengah 57792
 Telepon (0271) 697 010 Faksimile (0271) 697 451
 Laman b2p2toot@litbang.kemkes.go.id Surat Elektronik b2p2toot@litbang.kemkes.go.id

Nomor : KM.04.02/2/2790/2021 07 Desember 2021
 Lampiran : -
 Hal : Keterangan Determinasi

Yth. Dekan Fakultas Farmasi Universitas Setia Budi
 Jalan Letjend. Sutoyo Solo 57127

Merujuk surat Saudara nomor: 486/H6-04/14.09.2021 tanggal 14 September 2021 hal permohonan determinasi, dengan ini kami sampaikan bahwa hasil determinasi sampel tanaman sebagai berikut:

Nama Pemohon	: Melaningsih
Nama Sampel	: Sirsak
Sampel	: Segar
Spesies	: <i>Annona muricata</i> L.
Sinonim	: <i>Annona macrocarpa</i> Wiercké
Familia	: Annonaceae
Penanggung Jawab	: Nur Rahmawati Wijaya, S.Si.

Hasil determinasi tersebut hanya mencakup sampel tanaman yang telah dikirimkan ke B2P2TOOT.

Atas perhatian Saudara, kami sampaikan terima kasih.

Kepala Balai Besar Penelitian
 dan Pengembangan Tanaman Obat
 dan Obat Tradisional
 Tawangmangu,



Akhmad Saikhu, S.K.M., M.Sc.PH.

Tembusan :

Lampiran 4. Pengolahan Simplisia Daun Sirsak



Pemanenan dan sortasi basah



Pencucian



Perajangan



Pengeringan



Sortasi kering



Penggilingan



Pengayakan



Serbuk halus



Proses Maserasi

Pemekatan dengan *rotary evaporator*

Ekstrak daun sirsak



Proses Fraksinasi



Fraksi air daun sirsak

Lampiran 5. Perhitungan Rendemen Daun Sirsak

Rendemen simplisia daun sirsak terhadap daun sirsak basah

$$\begin{aligned}\% \text{ rendemen} &= \frac{\text{bobot simplisia}}{\text{bobot simplisia segar}} \times 100 \% \\ &= \frac{5,1 \text{ kg}}{9 \text{ kg}} \times 100 \% \\ &= 56,67 \%\end{aligned}$$

1. Rendemen serbuk daun sirsak terhadap simplisia daun sirsak

$$\begin{aligned}\% \text{ rendemen} &= \frac{\text{bobot serbuk}}{\text{bobot simplisia}} \times 100 \% \\ &= \frac{3,3 \text{ kg}}{5,1 \text{ kg}} \times 100 \% \\ &= 64,7 \%\end{aligned}$$

2. Rendemen ekstrak daun sirsak terhadap serbuk kering

$$\begin{aligned}\% \text{ rendemen} &= \frac{\text{bobot ekstrak}}{\text{bobot serbuk simplisia}} \times 100 \% \\ &= \frac{159 \text{ g}}{1000 \text{ g}} \times 100 \% \\ &= 15,9 \%\end{aligned}$$

3. Rendemen fraksi air daun sirsak

$$\begin{aligned}\% \text{ rendemen} &= \frac{\text{bobot fraksi}}{\text{bobot ekstrak}} \times 100 \% \\ &= \frac{18 \text{ g}}{30 \text{ g}} \times 100 \% \\ &= 60 \%\end{aligned}$$

Lampiran 6. Uji Susut Pengeringan



Lampiran 7. Kadar Air Simplisia Metode *Sterling Bidwell*

Perhitungan Kadar Air Serbuk Daun Sirsak

Kadar air simplisia metode *Sterling-Bidwell*

$$\% \text{ kadar air} = \frac{\text{volume air terbaca}}{\text{bobot sampel}} \times 100 \%$$

$$\begin{aligned} \text{Replikasi I} &= \frac{1,8 \text{ ml}}{20,1287 \text{ g}} \times 100 \% \\ &= 8,94 \% \end{aligned}$$

$$\begin{aligned} \text{Replikasi II} &= \frac{1,7 \text{ ml}}{20,1261 \text{ g}} \times 100 \% \\ &= 8,44 \% \end{aligned}$$

$$\begin{aligned} \text{Replikasi III} &= \frac{1,9 \text{ ml}}{20,1308 \text{ g}} \times 100 \% \\ &= 9,43 \% \end{aligned}$$

$$\text{Rata-rata kadar air} = \frac{8,94 \% + 8,44 \% + 9,43 \%}{3} = 8,93 \%$$

Lampiran 8. Kadar Ekstrak Etanol Daun Sirsak Metode Gravimetri



Perhitungan Kadar Ekstrak Etanol Daun Sirsak Metode Gravimetri

Kadar air ekstrak metode gravimetri

% kadar air =

$$\frac{\text{bobot bahan awal sebelum dikeringkan} - \text{bobot bahan setelah dikeringkan}}{\text{bobot bahan awal sebelum dikeringkan}} \times 100 \%$$

$$\begin{aligned} \text{Replikasi I} &= \frac{6,9873 \text{ g} - 6,3730 \text{ g}}{6,9873 \text{ g}} \times 100 \% \\ &= 8,79 \% \end{aligned}$$

$$\begin{aligned} \text{Replikasi II} &= \frac{7,1304 \text{ g} - 6,4918 \text{ g}}{7,1304 \text{ g}} \times 100 \% \\ &= 8,95 \% \end{aligned}$$

$$\begin{aligned} \text{Replikasi III} &= \frac{7,0566 \text{ g} - 6,4481 \text{ g}}{7,0566 \text{ g}} \times 100 \% \\ &= 8,62 \% \end{aligned}$$

$$\text{Rata-rata \% kadar air} = \frac{8,79 \% + 8,95 \% + 8,62 \%}{3} = 8,79 \%$$

Lampiran 9. Hasil Uji Bebas Etanol

Lampiran 10. Hasil Skrining Kimia Ekstrak

Alkaloid (Mayer)



Alkaloid (Wagner)



Alkaloid (Dragendorff)



Flavonoid



Saponin



Steroid



Tanin

Lampiran 11. Perhitungan Uji KLT

Nilai Rf pembanding flavonoid (kuersetin)

$$Rf = \frac{3,3 \text{ cm}}{6 \text{ cm}} = 0,55$$

Nilai Rf sampel ekstrak daun sirsak

$$- Rf = \frac{1,2 \text{ cm}}{6 \text{ cm}} = 0,2$$

$$- Rf = \frac{1,8 \text{ cm}}{6 \text{ cm}} = 0,3$$

$$- Rf = \frac{3,3 \text{ cm}}{6 \text{ cm}} = 0,55$$

$$- Rf = \frac{5,3 \text{ cm}}{6 \text{ cm}} = 0,88$$

Nilai Rf sampel fraksi air daun sirsak

$$Rf = \frac{2,9 \text{ cm}}{6 \text{ cm}} = 0,48$$

Lampiran 12. Hasil Pengukuran Penurunan Suhu Tubuh

Kelompok	Replikasi	T0	Tdemam	T 30'	T 60'	T90'	T120'
Kontrol negatif (CMC 1%)	1	36,6	37,6	37,9	38,1	38,3	38,5
	2	36,3	37,4	37,5	38,3	38,6	38,9
	3	36,2	37,2	37,3	38,1	38,4	38,8
	4	36,6	37,6	37,7	38,1	38,3	38,6
	5	36,4	37,0	37,7	38,5	38,8	38,9
Rata-rata		36,42	37,36	37,62	38,22	38,48	38,74
SD		0,17888544	0,2607681	0,2280351	0,178885	0,216795	0,181659
Kontrol positif (parasetamol 1%)	1	36,6	37,8	37,0	36,7	36,4	36,1
	2	36,7	38,1	37,5	36,9	36,7	36,5
	3	36,4	37,7	37,5	36,7	36,5	36,2
	4	36,8	37,7	37,4	36,1	35,7	35,5
	5	36,1	38,0	37,0	36,3	35,9	35,7
Rata-rata		36,52	37,86	37,28	36,54	36,24	36
SD		0,27748874	0,181659	0,2588436	0,328634	0,4219	0,4
Kelompok 1 Dosis ekstrak 400 mg/kg BB	1	36,1	37,8	37,1	36,7	36,4	36,3
	2	36,4	37,7	37,2	36,7	36,3	37,0
	3	36,2	37,3	37,0	37,1	36,7	36,6
	4	36,7	37,3	36,9	36,5	36,4	36,4
	5	36,7	37,8	37,1	36,9	36,6	36,5
Rata-rata		36,42	37,58	37,06	36,78	36,48	36,56
SD		0,27748874	0,2588436	0,1140175	0,228035	0,164317	0,2701851
Kelompok 2 Dosis fraksi 240 mg/kg BB	1	36,3	37,2	37,7	36,3	36,1	35,9
	2	36,1	37,6	37,1	35,8	35,7	35,7
	3	36,6	37,8	36,7	36,1	35,9	36,0
	4	36,3	37,4	36,1	36,5	36,2	36,1
	5	36,8	37,5	37,6	36,4	36,2	36,0
Rata-rata		36,42	37,5	37,04	36,22	36,02	35,94
SD		0,27748874	0,2236068	0,6618157	0,277489	0,216795	0,1516575

Lampiran 13. Uji Farmakologi Antipiretik**Perhitungan Dosis****1. Kontrol Negatif 1 %**

Menimbang 1 gram CMC Na kemudian dilarutkan ke dalam aquadest ad 100 ml. Volume pemberian 0,5 ml/tikus.

2. Kontrol Positif Parasetamol

Menimbang 1 gram CMC Na kemudian dilarutkan ke dalam aquadest ad 100 ml. Lalu menimbang 1 gram parasetamol, kemudian dilarutkan dengan larutan CMC Na ad 100 ml. Volume pemberian masing-masing hewan uji sebagai berikut: Dosis Parasetamol = 500 mg / kg BB manusia

$$\begin{aligned}\text{Konversi ke bobot tikus} &= 500 \text{ mg/kg bb manusia} \times 0,018 \\ &= 9 \text{ mg/200 g BB tikus}\end{aligned}$$

$$\begin{aligned}\text{- Replikasi I 170 g BB Tikus} &= \frac{170 \text{ g}}{200 \text{ g}} \times 9 \text{ mg} \\ &= 7,65 \text{ mg / 170 g BB tikus}\end{aligned}$$

$$\begin{aligned}\text{Volume pemberian} &= \frac{7,65 \text{ mg}}{10 \text{ mg}} \times 1 \text{ l} \\ &= 0,765 \text{ ml/170 g BB tikus}\end{aligned}$$

$$\begin{aligned}\text{- Replikasi II 190 g BB Tikus} &= \frac{190 \text{ g}}{200 \text{ g}} \times 9 \text{ mg} \\ &= 8,55 \text{ mg / 190 g BB tikus}\end{aligned}$$

$$\begin{aligned}\text{Volume pemberian} &= \frac{8,55 \text{ mg}}{10 \text{ mg}} \times 1 \text{ ml} \\ &= 0,855 \text{ ml/190 g BB tikus}\end{aligned}$$

$$\begin{aligned}\text{- Replikasi III 180 g BB Tikus} &= \frac{180 \text{ g}}{200 \text{ g}} \times 9 \text{ mg} \\ &= 8,1 \text{ mg / 180 g BB tikus}\end{aligned}$$

$$\begin{aligned}\text{Volume pemberian} &= \frac{8,1 \text{ mg}}{10 \text{ mg}} \times 1 \text{ ml} \\ &= 0,81 \text{ ml/180 g BB tikus}\end{aligned}$$

$$\begin{aligned}\text{- Replikasi IV 170 g BB Tikus} &= \frac{170 \text{ g}}{200 \text{ g}} \times 9 \text{ mg} \\ &= 7,65 \text{ mg / 170 g BB tikus}\end{aligned}$$

$$\begin{aligned}\text{Volume pemberian} &= \frac{7,65 \text{ mg}}{10 \text{ mg}} \times 1 \text{ ml} \\ &= 0,765 \text{ ml/170 g BB tikus}\end{aligned}$$

$$\begin{aligned}\text{- Replikasi V 180 g BB Tikus} &= \frac{180 \text{ g}}{200 \text{ g}} \times 9 \text{ mg} \\ &= 8,1 \text{ mg / 180 g BB tikus}\end{aligned}$$

$$\begin{aligned}\text{Volume pemberian} &= \frac{8,1 \text{ mg}}{10 \text{ mg}} \times 1 \text{ ml} \\ &= 0,81 \text{ ml/180 g BB tikus}\end{aligned}$$

3. Kelompok Ekstrak

$$\text{Dosis ekstrak} = 400 \text{ mg/kg BB tikus}$$

$$\begin{aligned}\text{- Replikasi I 170 g BB tikus} &= \frac{170 \text{ g}}{1000 \text{ g}} \times 400 \text{ mg} \\ &= 68 \text{ mg/170 g BB tikus}\end{aligned}$$

$$\begin{aligned}\text{Volume Pemberian} &= \frac{68 \text{ mg}}{10 \text{ mg}} \times 1 \text{ ml} \\ &= 6,8 \text{ ml/170 g BB tikus}\end{aligned}$$

$$\begin{aligned}\text{- Replikasi II 180 g BB tikus} &= \frac{180 \text{ g}}{1000 \text{ g}} \times 400 \text{ mg} \\ &= 72 \text{ mg/180 g BB tikus}\end{aligned}$$

$$\begin{aligned}\text{Volume Pemberian} &= \frac{7,2 \text{ mg}}{10 \text{ mg}} \times 1 \text{ ml} \\ &= 7,2 \text{ ml/180 g BB tikus}\end{aligned}$$

$$\begin{aligned}\text{- Replikasi III 180 g BB tikus} &= \frac{180 \text{ g}}{1000 \text{ g}} \times 400 \text{ mg} \\ &= 72 \text{ mg/180 g BB tikus}\end{aligned}$$

$$\begin{aligned}\text{Volume Pemberian} &= \frac{7,2 \text{ mg}}{10 \text{ mg}} \times 1 \text{ ml} \\ &= 7,2 \text{ ml/180 g BB tikus}\end{aligned}$$

$$\begin{aligned}\text{- Replikasi IV 170 g BB tikus} &= \frac{170 \text{ g}}{1000 \text{ g}} \times 400 \text{ mg} \\ &= 68 \text{ mg/170 g BB tikus}\end{aligned}$$

$$\begin{aligned}\text{Volume Pemberian} &= \frac{68 \text{ mg}}{10 \text{ mg}} \times 1 \text{ ml} \\ &= 6,8 \text{ ml/170 g BB tikus}\end{aligned}$$

$$\begin{aligned}\text{- Replikasi V 180 g BB tikus} &= \frac{180 \text{ g}}{1000 \text{ g}} \times 400 \text{ mg} \\ &= 72 \text{ mg/180 g BB tikus}\end{aligned}$$

$$\begin{aligned}\text{Volume Pemberian} &= \frac{7,2 \text{ mg}}{10 \text{ mg}} \times 1 \text{ ml} \\ &= 7,2 \text{ ml/180 g BB tikus}\end{aligned}$$

4. Kelompok Fraksi

$$\text{Rendemen Fraksi} = \frac{\text{Fraksi yang diperoleh}}{\text{ekstrak yang diperoleh}} \times 100 \%$$

$$= \frac{18 \text{ g}}{30 \text{ g}} \times 100 \%$$

$$= 60 \%$$

$$\text{Dosis Fraksi} = \text{Rendemen fraksi} \times \text{dosis ekstrak}$$

$$= \frac{60}{100} \times 400 \text{ mg/kg BB tikus}$$

$$= 240 \text{ mg / kg BB tikus}$$

$$\begin{aligned} \text{- Replikasi I 170 g BB tikus} &= \frac{170 \text{ g}}{1000 \text{ g}} \times 240 \text{ mg} \\ &= 40,8 \text{ mg/170 g BB tikus} \end{aligned}$$

$$\begin{aligned} \text{Volume Pemberian} &= \frac{40,8 \text{ mg}}{10 \text{ mg}} \times 1 \text{ ml} \\ &= 4,08 \text{ ml/170 g BB tikus} \end{aligned}$$

$$\begin{aligned} \text{- Replikasi II 180 g BB tikus} &= \frac{180 \text{ g}}{1000 \text{ g}} \times 240 \text{ mg} \\ &= 43,2 \text{ mg/180 g BB tikus} \end{aligned}$$

$$\begin{aligned} \text{Volume Pemberian} &= \frac{43,2 \text{ mg}}{10 \text{ mg}} \times 1 \text{ ml} \\ &= 4,32 \text{ ml/180 g BB tikus} \end{aligned}$$

$$\begin{aligned} \text{- Replikasi III 170 g BB tikus} &= \frac{170 \text{ g}}{1000 \text{ g}} \times 240 \text{ mg} \\ &= 40,8 \text{ mg/170 g BB tikus} \end{aligned}$$

$$\begin{aligned} \text{Volume Pemberian} &= \frac{40,8 \text{ mg}}{10 \text{ mg}} \times 1 \text{ ml} \\ &= 4,08 \text{ ml/170 g BB tikus} \end{aligned}$$

$$\begin{aligned} \text{- Replikasi IV 170 g BB tikus} &= \frac{170 \text{ g}}{1000 \text{ g}} \times 240 \text{ mg} \\ &= 40,8 \text{ mg/170 g BB tikus} \end{aligned}$$

$$\begin{aligned} \text{Volume Pemberian} &= \frac{40,8 \text{ mg}}{10 \text{ mg}} \times 1 \text{ ml} \\ &= 4,08 \text{ ml/170 g BB tikus} \end{aligned}$$

$$\text{- Replikasi V 180 g BB tikus} = \frac{180 \text{ g}}{1000 \text{ g}} \times 240 \text{ mg}$$

$$\begin{aligned} &= 43,2 \text{ mg}/180 \text{ g BB tikus} \\ \text{Volume Pemberian} &= \frac{43,2 \text{ mg}}{10 \text{ mg}} \times 1 \text{ ml} \\ &= 4,32 \text{ ml}/180 \text{ g BB tikus} \end{aligned}$$

Lampiran 14. Perhitungan AUC

Kelompok kontrol negatif (CMC Na 1%)

Replikasi 1

$$AUC_{tn-1}^{tn} = \frac{V_{tn} + V_{tn-1}}{2} (V_{tn} - V_{tn-1})$$

$$AUC_0^{30} = \frac{37.6 + 37.9}{2} (30 - 0) = 1132,5$$

$$AUC_{30}^{60} = \frac{37.9 + 38.1}{2} (60 - 30) = 1140$$

$$AUC_{60}^{90} = \frac{38.1 + 38.3}{2} (90 - 60) = 1146$$

$$AUC_{90}^{120} = \frac{38.3 + 38.5}{2} (120 - 90) = 1152$$

$$\text{Total AUC} = 4570,5$$

Replikasi 2

$$AUC_0^{30} = \frac{37.4 + 37.5}{2} (30 - 0) = 1123,5$$

$$AUC_{30}^{60} = \frac{37.5 + 38.3}{2} (60 - 30) = 1137$$

$$AUC_{60}^{90} = \frac{38.3 + 38.6}{2} (90 - 60) = 1153,5$$

$$AUC_{90}^{120} = \frac{38.6 + 38.9}{2} (120 - 90) = 1162,5$$

$$\text{Total AUC} = 4576,5$$

Replikasi 3

$$AUC_0^{30} = \frac{37.2 + 37.3}{2} (30 - 0) = 1117,5$$

$$AUC_{30}^{60} = \frac{37.3 + 38.1}{2} (60 - 30) = 1131$$

$$AUC_{60}^{90} = \frac{38.1 + 38.4}{2} (90 - 60) = 1147,5$$

$$AUC_{90}^{120} = \frac{38.4 + 38.8}{2} (120 - 90) = 1158$$

$$\text{Total AUC} = 4554$$

Replikasi 4

$$AUC_0^{30} = \frac{37.6 + 37.7}{2} (30 - 0) = 1129,5$$

$$AUC_{30}^{60} = \frac{37.7 + 38.1}{2} (60 - 30) = 1137$$

$$AUC_{60}^{90} = \frac{38.1 + 38.3}{2} (90 - 60) = 1146$$

$$AUC_{90}^{120} = \frac{38.3 + 38.6}{2} (120 - 90) = 1153,5$$

$$\text{Total AUC} = 4566$$

Replikasi 5

$$AUC_0^{30} = \frac{37.0 + 37.7}{2} (30 - 0) = 1120,5$$

$$AUC_{30}^{60} = \frac{37.7 + 38.5}{2} (60 - 30) = 1143$$

$$AUC_{60}^{90} = \frac{38.5 + 38.8}{2} (90 - 60) = 1159,5$$

$$AUC_{90}^{120} = \frac{38.8 + 38.9}{2} (120 - 90) = 1165,5$$

$$\text{Total AUC} = 4588,5$$

Kontrol Positif (Parasetamol 1%)

Replikasi 1

$$AUC_0^{30} = \frac{37.8 + 37.0}{2} (30 - 0) = 1122,5$$

$$AUC_{30}^{60} = \frac{37.0 + 36.7}{2} (60 - 30) = 1105,5$$

$$AUC_{60}^{90} = \frac{36.7 + 36.4}{2} (90 - 60) = 1096,5$$

$$AUC_{90}^{120} = \frac{36.4 + 36.1}{2} (120 - 90) = 1087.5$$

$$\text{Total AUC} = 4412$$

Replikasi 2

$$AUC_0^{30} = \frac{38.1 + 37.5}{2} (30 - 0) = 1134$$

$$AUC_{30}^{60} = \frac{37.5 + 36.9}{2} (60 - 30) = 1116$$

$$AUC_{60}^{90} = \frac{36.9 + 36.7}{2} (90 - 60) = 1104$$

$$AUC_{90}^{120} = \frac{36.7 + 36.5}{2} (120 - 90) = 1098$$

$$\text{Total AUC} = 4452$$

Replikasi 3

$$AUC_0^{30} = \frac{37.7 + 37.5}{2} (30 - 0) = 1128$$

$$AUC_{30}^{60} = \frac{37.5 + 36.7}{2} (60 - 30) = 1113$$

$$AUC_{60}^{90} = \frac{36.7 + 36.5}{2} (90 - 60) = 1098$$

$$AUC_{90}^{120} = \frac{36.5 + 36.2}{2} (120 - 90) = 1090.5$$

$$\text{Total AUC} = 4429.5$$

Replikasi 4

$$AUC_0^{30} = \frac{37.7 + 37.4}{2} (30 - 0) = 1126.5$$

$$AUC_{30}^{60} = \frac{37.4 + 36.1}{2} (60 - 30) = 1102.5$$

$$AUC_{60}^{90} = \frac{36.1 + 35.7}{2} (90 - 60) = 1077$$

$$AUC_{90}^{120} = \frac{35.7 + 35.5}{2} (120 - 90) = 1068$$

$$\text{Total AUC} = 4374$$

Replikasi 5

$$AUC_{0}^{30} = \frac{38.0 + 37.0}{2} (30 - 0) = 1125$$

$$AUC_{30}^{60} = \frac{37.0 + 36.3}{2} (60 - 30) = 1099,5$$

$$AUC_{60}^{90} = \frac{36.3 + 35.9}{2} (90 - 60) = 1083$$

$$AUC_{90}^{120} = \frac{35.9 + 35.7}{2} (120 - 90) = 1074$$

$$\text{Total AUC} = 4381,5$$

Kelompok Ekstrak Dosis 400 mg/kg BB tikus

Replikasi 1

$$AUC_{0}^{30} = \frac{37.8 + 37.1}{2} (30 - 0) = 1123,5$$

$$AUC_{30}^{60} = \frac{37.1 + 36.7}{2} (60 - 30) = 1107$$

$$AUC_{60}^{90} = \frac{36.7 + 36.4}{2} (90 - 60) = 1096,5$$

$$AUC_{90}^{120} = \frac{36.4 + 36.3}{2} (120 - 90) = 1090,5$$

$$\text{Total AUC} = 4417,5$$

Replikasi 2

$$AUC_{0}^{30} = \frac{37.7 + 37.2}{2} (30 - 0) = 1123,5$$

$$AUC_{30}^{60} = \frac{37.2 + 36.7}{2} (60 - 30) = 1108,5$$

$$AUC_{60}^{90} = \frac{36.7 + 36.3}{2} (90 - 60) = 1095$$

$$AUC_{90}^{120} = \frac{36.3 + 37.0}{2} (120 - 90) = 1099,5$$

$$\text{Total AUC} = 4426,5$$

Replikasi 3

$$AUC_0^{30} = \frac{37.3 + 37.0}{2} (30 - 0) = 1114,5$$

$$AUC_{30}^{60} = \frac{37.0 + 37.1}{2} (60 - 30) = 1111,5$$

$$AUC_{60}^{90} = \frac{37.1 + 36.7}{2} (90 - 60) = 1107$$

$$AUC_{90}^{120} = \frac{36.7 + 36.6}{2} (120 - 90) = 1099,5$$

$$\text{Total AUC} = 4432,5$$

Replikasi 4

$$AUC_0^{30} = \frac{37.3 + 36.9}{2} (30 - 0) = 1113$$

$$AUC_{30}^{60} = \frac{36.9 + 36.5}{2} (60 - 30) = 1101$$

$$AUC_{60}^{90} = \frac{36.5 + 36.4}{2} (90 - 60) = 1093,5$$

$$AUC_{90}^{120} = \frac{36.4 + 36.4}{2} (120 - 90) = 1092$$

$$\text{Total AUC} = 4399,5$$

Replikasi 5

$$AUC_0^{30} = \frac{37.8 + 37.1}{2} (30 - 0) = 1123,5$$

$$AUC_{30}^{60} = \frac{37.1 + 36.9}{2} (60 - 30) = 1110$$

$$AUC_{60}^{90} = \frac{36.9 + 36.6}{2} (90 - 60) = 1102,5$$

$$AUC_{90}^{120} = \frac{36.6 + 36.5}{2} (120 - 90) = 1096,5$$

$$\text{Total AUC} = 4432,5$$

Kelompok Fraksi Dosis 240 mg/kg BB tikus

Replikasi 1

$$AUC_0^{30} = \frac{37.2 + 37.7}{2} (30 - 0) = 1123,5$$

$$AUC_{30}^{60} = \frac{37.7 + 36.3}{2} (60 - 30) = 1110$$

$$AUC_{60}^{90} = \frac{36.3 + 36.1}{2} (90 - 60) = 1086$$

$$AUC_{90}^{120} = \frac{36.1 + 35.9}{2} (120 - 90) = 1080$$

$$\text{Total AUC} = 4399,5$$

Replikasi 2

$$AUC_0^{30} = \frac{37.6 + 37.1}{2} (30 - 0) = 1120,5$$

$$AUC_{30}^{60} = \frac{37.1 + 35.8}{2} (60 - 30) = 1093,5$$

$$AUC_{60}^{90} = \frac{35.8 + 35.7}{2} (90 - 60) = 1072,5$$

$$AUC_{90}^{120} = \frac{35.7 + 35.7}{2} (120 - 90) = 1071$$

$$\text{Total AUC} = 4357,5$$

Replikasi 3

$$AUC_0^{30} = \frac{37.8 + 36.7}{2} (30 - 0) = 1117,5$$

$$AUC_{30}^{60} = \frac{36.7 + 36.1}{2} (60 - 30) = 1092$$

$$AUC_{60}^{90} = \frac{36.1 + 35.9}{2} (90 - 60) = 1080$$

$$AUC_{90}^{120} = \frac{35.9 + 36.0}{2} (120 - 90) = 1078,5$$

$$\text{Total AUC} = 4368$$

Replikasi 4

$$AUC_0^{30} = \frac{37.4 + 36.1}{2} (30 - 0) = 1102,5$$

$$AUC_{30}^{60} = \frac{36.1 + 36.5}{2} (60 - 30) = 1089$$

$$AUC_{60}^{90} = \frac{36.5 + 36.2}{2} (90 - 60) = 1090,5$$

$$AUC_{90}^{120} = \frac{36.2 + 36.1}{2} (120 - 90) = 1084,5$$

$$\text{Total AUC} = 4366,5$$

Replikasi 5

$$AUC_0^{30} = \frac{37.5 + 37.6}{2} (30 - 0) = 1126,5$$

$$AUC_{30}^{60} = \frac{37.6 + 36.4}{2} (60 - 30) = 1110$$

$$AUC_{60}^{90} = \frac{36.4 + 36.2}{2} (90 - 60) = 1089$$

$$AUC_{90}^{120} = \frac{36.2 + 36.0}{2} (120 - 90) = 1083$$

$$\text{Total AUC} = 4408,5$$

Perhitungan Rata-rata AUC Daya Antipiretik

Kelompok	Replikasi	AUC_{0-30}^{30}	AUC_{30-60}^{60}	AUC_{60-90}^{90}	AUC_{90-120}^{120}	Total AUC
Kontrol negatif (CMC 1%)	1	1132,5	1140	1146	1152	4570,5
	2	1123,5	1137	1153,5	1162,5	4576,5
	3	1117,5	1131	1147,5	1158	4554
	4	1129,5	1137	1146	1153,5	4566
	5	1120,5	1143	1159,5	1165,5	4588,5
Rata-rata						4571,1
SD						12,754
Kontrol positif (parasetamol 1%)	1	1122,5	1105,5	1096,5	1087,5	4412
	2	1134	1116	1104	1098	4452
	3	1128	1113	1098	1090,5	4429,5
	4	1126,5	1102,5	1077	1068	4374
	5	1125	1099,5	1083	1074	4381,5
Rata-rata						4409,8
SD						32,620
Kelompok 1 Dosis ekstrak 400 mg/kg BB	1	1123,5	1107	1096,5	1090,5	4417,5
	2	1123,5	1108,5	1095	1099,5	4426,5
	3	1114,5	1111,5	1107	1099,5	4432,5
	4	1113	1101	1093,5	1092	4399,5
	5	1123,5	1110	1102,5	1096,5	4432,5
Rata-rata						4421,7
SD						13,845
Kelompok 2 Dosis fraksi 240 mg/kg BB	1	1123,5	1110	1086	1080	4399,5
	2	1120,5	1093,5	1072,5	1071	4357,5
	3	1117,5	1092	1080	1078,5	4368
	4	1102,5	1089	1090,5	1084,5	4366,5
	5	1126,5	1110	1089	1083	4408,5
Rata-rata						4380
SD						22,5

Lampiran 15. Hasil Analisis Statistik AUC

Uji Shapiro-wilk

Kriteria uji:

Sig < 0,05 berarti H_0 ditolak

Sig > 0,05 berarti H_0 diterima

Tests of Normality							
	KELOMPOK	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
AUC	Kontrol Negatif	,145	5	,200*	,997	5	,997
	Kontrol Positif	,207	5	,200*	,945	5	,703
	Kelompok Ekstrak	,236	5	,200*	,852	5	,200
	Kelompok Fraksi	,303	5	,150	,865	5	,248

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

a. Lilliefors Significance Correction

Uji Levene

Sig. < 0,05 berarti H_0 ditolak

Sig. > 0,05 berarti H_0 diterima

Test of Homogeneity of Variances			
AUC			
Levene Statistic	df1	df2	Sig.
3,010	3	16	,061

Uji ANOVA

Kesimpulan : Sig. < 0,05 maka H_0 ditolak. Terdapat perbedaan AUC antar kelompok perlakuan

ANOVA					
AUC					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	109532,250	3	36510,750	75,878	,000
Within Groups	7698,800	16	481,175		
Total	117231,050	19			

Uji Tukey

Multiple Comparisons

Dependent Variable: AUC

Tukey HSD

(I) KELOMPOK	(J) KELOMPOK	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Kontrol Negatif	Kontrol Positif	161,30000*	13,87336	,000	121,6081	200,9919
	Kelompok Ekstrak	149,40000*	13,87336	,000	109,7081	189,0919
	Kelompok Fraksi	191,10000*	13,87336	,000	151,4081	230,7919
Kontrol Positif	Kontrol Negatif	-161,30000*	13,87336	,000	-200,9919	-121,6081
	Kelompok Ekstrak	-11,90000	13,87336	,826	-51,5919	27,7919
	Kelompok Fraksi	29,80000	13,87336	,180	-9,8919	69,4919
Kelompok Ekstrak	Kontrol Negatif	-149,40000*	13,87336	,000	-189,0919	-109,7081
	Kontrol Positif	11,90000	13,87336	,826	-27,7919	51,5919
	Kelompok Fraksi	41,70000*	13,87336	,038	2,0081	81,3919
Kelompok Fraksi	Kontrol Negatif	-191,10000*	13,87336	,000	-230,7919	-151,4081
	Kontrol Positif	-29,80000	13,87336	,180	-69,4919	9,8919
	Kelompok Ekstrak	-41,70000*	13,87336	,038	-81,3919	-2,0081

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

AUC

Tukey HSD^a

KELOMPOK	N	Subset for alpha = 0.05		
		1	2	3
Kelompok Fraksi	5	4380,0000		
Kontrol Positif	5	4409,8000	4409,8000	
Kelompok Ekstrak	5		4421,7000	
Kontrol Negatif	5			4571,1000
Sig.		,180	,826	1,000

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 5,000.

Lampiran 16. Perhitungan % Daya Antipiretik Kelompok Kontrol
Kelompok Kontrol Positif (Parasetamol 1%)

$$\% \text{DAP} = \frac{\text{AUC}_k - \text{AUC}_p}{\text{AUC}_k} \times 100\%$$

$$\% \text{DAP tikus 1} = \frac{4570,5 - 4412}{4570,5} \times 100\% = 3,46 \%$$

$$\% \text{DAP tikus 2} = \frac{4576,5 - 4452}{4576,5} \times 100\% = 2,72 \%$$

$$\% \text{DAP tikus 3} = \frac{4554 - 4429,5}{4554} \times 100\% = 2,73 \%$$

$$\% \text{DAP tikus 4} = \frac{4566 - 4374}{4566} \times 100\% = 4,20 \%$$

$$\% \text{DAP tikus 5} = \frac{4588,5 - 4381,5}{4588,5} \times 100\% = 4,51 \%$$

Ekstrak Etanol Daun Sirsak Dosis 400 mg/kg BB tikus

$$\% \text{DAP} = \frac{\text{AUC}_k - \text{AUC}_p}{\text{AUC}_k} \times 100\%$$

$$\% \text{DAP tikus 1} = \frac{4570,5 - 4417,5}{4570,5} \times 100\% = 3,34 \%$$

$$\% \text{DAP tikus 2} = \frac{4576,5 - 4426,5}{4576,5} \times 100\% = 3,27 \%$$

$$\% \text{DAP tikus 3} = \frac{4554 - 4432,5}{4554} \times 100\% = 2,66 \%$$

$$\% \text{DAP tikus 4} = \frac{4566 - 4399,5}{4566} \times 100\% = 3,64 \%$$

$$\% \text{DAP tikus 5} = \frac{4588,5 - 4357,5}{4588,5} \times 100\% = 3,39 \%$$

Fraksi Air Daun Sirsak Dosis 240 mg/kg BB tikus

$$\% \text{DAP} = \frac{\text{AUC}_k - \text{AUC}_p}{\text{AUC}_k} \times 100\%$$

$$\% \text{DAP tikus 1} = \frac{4570,5 - 4399,5}{4570,5} \times 100\% = 3,74 \%$$

$$\% \text{DAP tikus 2} = \frac{4576,5 - 4357,5}{4576,5} \times 100\% = 4,78 \%$$

$$\% \text{DAP tikus 3} = \frac{4554 - 4368}{4554} \times 100\% = 4,08 \%$$

$$\% \text{DAP tikus 4} = \frac{4566 - 4366,5}{4566} \times 100\% = 4,36 \%$$

$$\% \text{DAP tikus 5} = \frac{4588,5 - 4408,5}{4588,5} \times 100\% = 3,92 \%$$

Lampiran 17. Hasil Analisis Statistik % Daya Antipiretik

Uji Shapiro Wilk

Tests of Normality							
	KELOMPOK	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
DAP	Kontrol Positif (Parasetamol 45 mg/kg BB)	,233	5	,200*	,880	5	,310
	Kelompok Ekstrak Daun Sirsak Dosis 400 mg/kg BB	,311	5	,128	,877	5	,295
	Kelompok Fraksi Polar Daun Sirsak Dosis 240 mg/kg BB	,193	5	,200*	,958	5	,796

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

a. Lilliefors Significance Correction

Uji Levene

Test of Homogeneity of Variances

DAP

Levene Statistic	df1	df2	Sig.
3,400	2	12	,068

Uji ANOVA

ANOVA

DAP

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2,223	2	1,112	3,419	,067
Within Groups	3,901	12	,325		
Total	6,125	14			

Uji Tukey

Multiple Comparisons

Dependent Variable: DAP
Tukey HSD

(I) KELOMPOK	(J) KELOMPOK	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Kontrol Positif (Parasetamol 45 mg/kg BB)	Kelompok Ekstrak Daun Sirsak Dosis 400 mg/kg BB	,26400	,36062	,750	-,6981	1,2261
	Kelompok Fraksi Polar Daun Sirsak Dosis 240 mg/kg BB	-,65200	,36062	,209	-1,6141	,3101
Kelompok Ekstrak Daun Sirsak Dosis 400 mg/kg BB	Kontrol Positif (Parasetamol 45 mg/kg BB)	-,26400	,36062	,750	-1,2261	,6981
	Kelompok Fraksi Polar Daun Sirsak Dosis 240 mg/kg BB	-,91600	,36062	,063	-1,8781	,0461
Kelompok Fraksi Polar Daun Sirsak Dosis 240 mg/kg BB	Kontrol Positif (Parasetamol 45 mg/kg BB)	,65200	,36062	,209	-,3101	1,6141
	Kelompok Ekstrak Daun Sirsak Dosis 400 mg/kg BB	,91600	,36062	,063	-,0461	1,8781

DAP

Tukey HSD^a

KELOMPOK	N	Subset for alpha = 0.05
		1
Kelompok Ekstrak Daun Sirsak Dosis 400 mg/kg BB	5	3,2600
Kontrol Positif (Parasetamol 45 mg/kg BB)	5	3,5240
Kelompok Fraksi Polar Daun Sirsak Dosis 240 mg/kg BB	5	4,1760
Sig.		,063

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 5,000.