

LAMPIRAN

Lampiran 1. Surat Izin Penelitian

 MAJELIS PENDIDIKAN TINGGI, PENELITIAN DAN PENGEMBANGAN
UNIVERSITAS MUHAMMADIYAH PALOPO
LEMBAGA PENELITIAN DAN PENGABDIAN KEPADA MASYARAKAT (LPPM)
Dl. 2 Gedung MCC Universitas Muhammadiyah Palopo
R. Jend. Sudirman Km. 03 Bontone, Kota Palopo (81979) – Telp/Fax: (0471) 575429

Nomor : 706/HIL.AU/LPPM/T/2025
Lampiran : -
Perihal : Permohonan Izin Penelitian
Palopo, 28 November 2025

Kepada Yth
Kepala Lab Farmasi UML Palopo
Di
Tempat

Assalamu alaikum warahmatullahi wabarakatuh

Dengan hormat, disampaikan bahwa dalam rangka pelaksanaan penelitian Mahasiswa Universitas Muhammadiyah Palopo, mohon kiranya diberikan izin untuk melakukan kegiatan penelitian kepada:

Nama : Adelia Namora Hutabarat
NIM : 221320120
Jurusan : SI Farmasi
Alamat : Jln. Dr. Ratulangi, Kota Palopo
Jenis Kelamin : Perempuan
No.Hp/Wa : 0821222200274

Untuk melengkapi data penelitian yang berkaitan dengan Judul "Isosoni Sediaan efilek Ekstrak Daun Pare (*Momordica Charantia* L.) Sebagai Agen Antimalaria: Pengembangan Hasil Studi In Silico" yang akan dilakukan pada November-Desember 2025

Demikian permohonan dari kami, atas kerjasannya yang baik diucapkan terima kasih.

Wassalamu alaikum warahmatullahi wabarakatuh


Saiful, ST., Ak., M. Ak., CA., Ph.D
NIDN: 0914067585

Terbaca:
- Dikam Beresngkatkan

SURAT IZIN PENELITIAN

Yang bertanda tangan di bawah ini Sekretaris Program Studi Farmasi menyatakan,

Nama : AGUS HAANAH HUSALANG
NIM : 220320100

Dapat melaksanakan penelitian di Laboratorium Tissue dan Sel pada Fakultas Farmasi Universitas Muhammadiyah Palopo

Palopo, 28 Nov 2025


Agus Haanah Husalang, S.Farm., M.Farm
NIDN: 4040774675220003

Lampiran 2. Surat Keterangan Bebas Lab



PIMPINAN PUSAT MUHAMMADIYAH
MAJELIS PENDIDIKAN TINGGI, PENELITIAN, DAN PENGEMBANGAN
UNIVERSITAS MUHAMMADIYAH PALOPO
FAKULTAS ILMU KESEHATAN
PROGRAM STUDI FARMASI
LABORATORIUM FARMASI

Kampus: Jl. Jenderal Sudirman Km. 3 Binturu Kota Palopo
Telp/Fax: (0471) 327429 Email: institusi@umpalopo.ac.id
Website: <http://www.umpalopo.ac.id>

SURAT KETERANGAN
NOMOR: 015KET/III.3.AU/LAB-FARM/F/2024

Yang bertanda tangan dibawah ini :

Nama : apt. Waode Suiyarti., S.Si., M.Si

Jabatan : Ketua Program Studi Farmasi

Menerangkan dengan sesungguhnya bahwa :

Nama : Adelia Namora Hutabarat

Nim : 221320120

Judul : INOVASI SEDIAAN *ELIXIR* EKSTRAK DAUN PARE
(*Momordica Charantia* L.) SEBAGAI TERAPI SUPORTIF
MALARIA: PENGEMBANGAN HASIL STUDI *IN SILICO*

Jurusan/Prodi : Farmasi (S1)

Perguruan Tinggi : Universitas Muhammadiyah Palopo

Telah menyelesaikan segala kewajiban terkait dengan peminjaman/penggunaan fasilitas Laboratorium selama yang bersangkutan melaksanakan kegiatan penelitian di lingkup laboratorium Farmasi Universitas Muhammadiyah Palopo, sehingga diberikan Surat Keterangan bebas Laboratorium ini.

Demikian Surat Keterangan ini diberikan untuk dipergunakan sebagaimana mestinya.

Palopo, 08 Juni 2026

Ketua Program Studi Farmasi



apt. Waode Suiyarti., S.Si., M.Si

NIDN. 0904108703

PIMPINAN PUSAT MUHAMMADIYAH

Lampiran 3. Pengambilan dan Pengolahan Sampel

	Pengambilan Sampel Daun Pare (<i>Momordica charantia</i> L.)
	Pencucian Sampel
	Perajangan Sampel
	Pengeringan Sampel
	Penghalusan Sampel
	Penimbangan Sampel

	Proses Ekstraksi (Metode Maserasi)
	Pengentalan (<i>Rotary evaporator</i>)

Lampiran 4. Pembuatan Sediaan Elik sir

	Penyiapan dan penimbangan bahan
	Pencampuran bahan

	Formula 0 (F_0) tanpa ekstrak daun pare
	Formula 1 (F_1) konsentrasi ekstrak daun pare 10%
	Formula 2 (F_2) konsentrasi ekstrak daun pare 15%
	Formula 3 (F_3) konsentrasi ekstrak daun pare 20%

Lampiran 5. Uji Studi *In Silico*

a. *KNApSack*

 KNapSack: A Comprehensive Species-Metabolite Relationship Database Website: www.knapsack.org Email: knapsack@knapsack.org Address: 1000 University Ave., Suite 100, San Francisco, CA 94103-5080 Phone: (415) 774-1000 Fax: (415) 774-1001 Web: www.knapsack.org Copyright: © 2000-2001 by the University of California, San Francisco All rights reserved.	<i>Website KNApSack</i>
Metabolic Information Name: Hydroxybenzoic acid Formula: C₇H₆O₃ Ref: 138 (379999) CAS No: 2809-30-4 C. ID: C0004108 NCBIRef: NCBI:138 (379999) NCBIRef: NCBI:138 (379999) NCBIRef: NCBI:138 (379999) NCBIRef: NCBI:138 (379999)	Structural Formula  <i>Hydroxybenzoic Acid</i>
Metabolic Information Name: Gentisic acid Formula: C₇H₆O₅ Ref: 138 (379999) CAS No: 485-79-4 C. ID: C0004108 NCBIRef: NCBI:138 (379999) NCBIRef: NCBI:138 (379999) NCBIRef: NCBI:138 (379999) NCBIRef: NCBI:138 (379999)	Structural Formula  <i>Gentisic Acid</i>
Metabolic Information Name: Naringin Formula: C₂₈H₃₄O₁₄ Ref: 138 (379999) CAS No: 485-79-4 C. ID: C0004108 NCBIRef: NCBI:138 (379999) NCBIRef: NCBI:138 (379999) NCBIRef: NCBI:138 (379999) NCBIRef: NCBI:138 (379999)	Structural Formula  <i>Naringin</i>
Metabolic Information Name: Vanillic acid Formula: C₈H₆O₄ Ref: 138 (379999) CAS No: 485-79-4 C. ID: C0004108 NCBIRef: NCBI:138 (379999) NCBIRef: NCBI:138 (379999) NCBIRef: NCBI:138 (379999) NCBIRef: NCBI:138 (379999)	Structural Formula  <i>Vanillic Acid</i>

b. Way2Drug/PassOnline

	Website Way2Drug/PASS Online
	Hydroxybenzoic Acid
	Gentisic Acid
	Naringin

		Vanillic Acid
		Hydroxybenzoic Acid

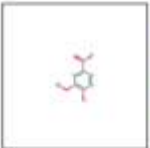
c. *SwissADME*

	Website <i>SwissADME</i>
	Hydroxybenzoic Acid

[illegible]

Toxins-BioRxiv
If you are interested in the article, please click on the link below
Toxins-BioRxiv is a preprint server for the field of toxicology and related fields
Toxins-BioRxiv is a preprint server for the field of toxicology and related fields
Toxins-BioRxiv is a preprint server for the field of toxicology and related fields

Chemical structure prediction results for input compounds



Predicted LD50: 2000mg/kg

Predicted Toxicity Class: 4

Average similarity: 79.38%

Prediction accuracy: 88.26%

[Vanillic Acid]

Target	Vanillic acid
Similarity	88.26%
Similarity (average)	88.26%
Similarity (median)	88.26%
Similarity (mode)	88.26%
Similarity (range)	88.26%
Similarity (variance)	88.26%
Similarity (standard deviation)	88.26%
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Lampiran 6. Uji Stabilitas Fisik Sediaan Elik sir

	Uji organoleptis
	Uji pH
	Uji homogenitas

	Uji berat jenis
	Uji viskositas

Lampiran 7. Perhitungan Bahan Formula Sediaan Elik sir

Perhitungan Bahan Formula Sediaan Elik sir

$$\text{Etanol 90\%} = \frac{5}{100} \times 50 \text{ ml} = 2,5 \text{ ml}$$

$$\text{Propilenglikol} = \frac{10}{100} \times 50 \text{ ml} = 5 \text{ ml}$$

$$\text{Sorbitol} = \frac{15}{100} \times 50 \text{ ml} = 7,5 \text{ ml}$$

$$\text{Na benzoat} = \frac{0,5}{100} \times 50 \text{ ml} = 0,25 \text{ gr}$$

$$\text{Gliserin} = \frac{15}{100} \times 50 \text{ ml} = 7,5 \text{ ml}$$

Perhitungan Etanol 90%

$$\frac{90 \times 20 \text{ ml}}{96} = 18,75 \text{ (etanol 90\%)}$$

$$18,75 - 20 = 1,25 \text{ (aquadest)}$$

Perhitungan Ekstrak Daun Pare (*Momordica charantia* L.)

$$\begin{aligned}
 F_1 &= \frac{10}{100} \times 50 \text{ ml} &= 5 \text{ gr} \\
 F_2 &= \frac{15}{100} \times 50 \text{ ml} &= 7,5 \text{ gr} \\
 F_3 &= \frac{20}{100} \times 50 \text{ ml} &= 10 \text{ gr}
 \end{aligned}$$

Lampiran 8. Perhitungan Maserasi Ekstrak

Perbandingan 1:7,5

$$\begin{aligned}
 \text{Ekstrak Daun Pare} &= 300 \text{ gram} \\
 \text{Etanol} &= 70\% \\
 \text{Vol Pelarut} &= \text{Berat Bahan} \times 7,5 \\
 &= 300 \text{ gr} \times 7,5 &= 2,250 \text{ ml}
 \end{aligned}$$

Lampiran 9. Perhitungan Berat Jenis

$$Dik = F_k = 22,2$$

$$F_0 = 49,5$$

$$F_1 = 48,9$$

$$F_2 = 49,2$$

$$F_3 = 49,3$$

F_k = Piknometer kosong

F_0 = Piknometer berisi formula tanpa ekstrak

F_1 = Piknometer berisi ekstrak 10%

F_2 = Piknometer berisi ekstrak 15%

F_3 = Piknometer berisi ekstrak 20%

W_1 = Berat piknometer kosong (gram)

W_2 = Berat piknometer berisi sampel

V = Volume piknometer (50 ml)

Rumus penentuan berat sampel:

$$BJ = \frac{W_2 - W_1}{v}$$

a. $F_0 = 49,5$

$$F_0 = \frac{49,5 - 22,2}{25} = 1,092$$

b. $F_1 = 48,9$

$$F_1 = \frac{48,9 - 22,2}{25} = 1,068$$

c. $F_2 = 49,2$

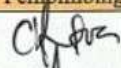
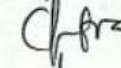
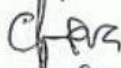
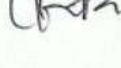
$$F_2 = \frac{49,2 - 22,2}{25} = 1,08$$

d. $F_3 = 49,3$

$$F_3 = \frac{49,3 - 22,2}{25} = 1,084$$

Lampiran 10. Lembar Konsultasi dan Monitoring Skripsi

KONSULTASI DAN MONITORING KARYA TULIS ILMIAH

Nama	Adelia Namora Hutabarat		
Nomor Induk Mahasiswa	221520120		
Program Studi			
Nama Dosen Pembimbing	1. apt. Chitra Astori, S.Farm, M.W 2. Bdn. Andi Sitti Umrah, S.ST., M.Keb		
Tanggal Berita Acara Seminar UP			
Judul Karya tulis ilmiah:	Inovasi Sediaan Elixir Ekstrak Daun Pare (Momordica charantia L.) Sebagai Terapi Supportif Malaria : Pengembangan Hasil Studi in vitro		
No	Tanggal	Arahan Pembimbing/Prodi	Tanda Tangan Pembimbing
1.	03/07/2025	Judul	
2.	04/07/2025	Judul	
3.	08/07/2025	Bab 1	
4.	30/07/2025	Bab I, 2, 3	
5.	31/07/2025	Bab 1, 2, 3	
6.	01/08/2025	Bab 1, 2, 3 (Revisi)	
7.	08/08/2025	Acc	

Ket: *)Melampirkan bukti bimbingan jika tanpa tatap muka.

Cat: Halaman berikutnya mulai dari judul kolom, dapat ditambah sesuai kebutuhan.

Palopo,08.....agustus.....2025....

Ketua Program Studi Ilmu.....Farmasi.....,



apt. Winda Suciyanti, S.Si, M.Si.....

NIP/NIDN. 0904108703

KONSULTASI DAN MONITORING KARYA TULIS ILMIAH

Nama	Adelia Namera Hutabarat		
Nomor Induk Mahasiswa	221320120		
Program Studi	Farmasi		
Nama Dosen Pembimbing	1. 2. Bdn Andi Sth Umrah, S.ST. M. Keb		
Judul Karya tulis ilmiah: (Novati) Sediaan Elixir Ekstrak Daun Pare (Momordica charantia L) Sebagai Terapi Suportif Malaria : Pengumbangan Hasil Studi In Silico			
No	Tanggal	Arahan Pembimbing/Prodi	Tanda Tangan Pembimbing
1.	05/08/2025	Judul	
2.	06/08/2025	Judul Acc	
3.	06/08/2025	Latar belakang: - Tambahkan kebaharuan penelitian - Pada Batasan dan Sistematisa buat Perpoint	
4.	07/08/2025	Bab II - Kerangka teori diberikan Penjelasan Singkat dan kerangka konsep. - Definisi Operasional dibuatkan tabel	
5.	07/08/2025	- Perelas mekanisme kerja tiap apitok - Prosedur penelitian harus jelas - Referensi	
6.	08/08/2025	- Tata cara Penelitian - kerangka konsep - Definisi operasional, dan prosedur Penelitian	

Ket: *)Melampirkan bukti bimbingan jika tanpa tatap muka.

Cat: Halaman berikutnya mulai dari judul kolom, dapat ditambah sesuai kebutuhan.

Palopo,08.....agustus 2025....

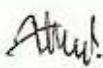
Ketua Program Studi Ilmu.....Farmasi.....,

apriliana, S.Si, M.Si.....

NIP/MDN. 0904108703



KONSULTASI DAN MONITORING KARYA TULIS ILMIAH

Nama	Adelia Nomora Hutaharat		
Nomor Induk Mahasiswa	221320120		
Program Studi	Farmasi		
Nama Dosen Pembimbing	1. 2. Bdn. Andi Seti Umich, S.ST., M. Keb		
Judul Karya tulis ilmiah: Inovasi Sediaan Elixir Ekstrak Daun pare (Momordica charantia L.) Sebagai Terapi Supportif Malaria : Pengembangan Hasil Studi in Silico			
No	Tanggal	Arahan Pembimbing/Prodi	Tanda Tangan Pembimbing
7.	14/08/2025	- Tata Cara Penulisan - Daftar Pustaka	
8.	16/08/2025	Acc Layut Ufi Sumpro.	
9.	16/05/2026	Acc penulisan.	
10	19/05/2026	Acc Layut Ufian Silviani	

Ket: *)Melampirkan bukti bimbingan jika tanpa tatap muka.

Cat: Halaman berikutnya mulai dari judul kolom, dapat ditambah sesuai kebutuhan.

Palopo, 19 Mei 2026

Ketua Program Studi Ilmu.....Farmasi.....,


NIP/NIDN. 09 04108 703



Adelia Namora Hutabarat

(1) INOVASI SEDIAAN ELIXIR EKSTRAK DAUN PARE (MOMORDICA CHARANTIA L.) SEBAGAI TERAPI SUPORTIF M...

 Farmasi
 Fak. Ilmu Kesehatan
 LLDIKTI IX Turnitin Consortium Part III

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87,762 Characters