

Lampiran 1. Determinasi Tanaman



KEMENTERIAN RISET, TEKNOLOGI DAN PENDIDIKAN TINGGI
UNIVERSITAS DIPONEGORO
FAKULTAS SAINS DAN MATEMATIKA
LABORATORIUM EKOLOGI DAN BIOSISTEMATIK DEPARTEMEN BIOLOGI
Jl. Prof. H. Soedarto SH Tembalang Semarang, 024 7474754. 024 76480923

SURAT KETERANGAN

Yang bertanda tangan dibawah ini, menyatakan bahwa mahasiswa sbb :

Nama : DISTA AYU ASTARI
NIM : 155010119
Fakultas / Prodi : S1 FARMASI
Perguruan Tinggi : UNIVERSITAS WAHID HASYIM SEMARANG
Judul Skripsi : "Korelasi Kadar Fenolik Total dan Flavonoid Total Fraksi n-Heksan Etil Asetat dan Air Ekstrak Etanol Daun Petai (*Parkia speciosa* Hassk.) terhadap Aktivitas Antioksidan"
Pembimbing : :

Telah melakukan determinasi / identifikasi sampel tumbuhan (satu jenis) di Laboratorium Ekologi dan Biosistematik Departemen Biologi Fakultas Sains dan Matematika Universitas Diponegoro. Hasil determinasi / identifikasi terlampir.

Demikian Surat Keterangan ini dibuat untuk dapat digunakan seperlunya.

Semarang, Januari 2019

Laboratorium Ekologi Dan Biosistematik
Kepala,

A handwritten signature in blue ink, appearing to read "Dr. Mochamad Hadi".

Dr. Mochamad Hadi, M.Si.

NIP. 196001081987031002

Lampiran 1. Lanjutan


**KEMENTERIAN RISET, TEKNOLOGI DAN PENDIDIKAN TINGGI
UNIVERSITAS DIPONEGORO
FAKULTAS SAINS DAN MATEMATIKA
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HASIL DETERMINASI / IDENTIFIKASI

KLASIFIKASI

| | |
|--------------|---|
| Kingdom | : Plantae (Tumbuh-tumbuhan) |
| Sub Kingdom | : Tracheobionta (Tumbuhan berpembuluh) |
| Super Divisi | : Spermatophyta (Tumbuhan yang menghasilkan biji) |
| Divisi | : Magnoliophyta (Tumbuhan berbunga) |
| Class | : Magnoliopsida (Dicotyledoneae) |
| Ordo | : Fabales |
| Famili | : Mimosaceae |
| Genus | : <i>Parkia</i> |
| Species | : <i>Parkia speciosa</i> Hassk. (Petai) |

HASIL DETERMINASI / IDENTIFIKASI :

1b, 2b, 3b, 4b, 6b, 7b, 9b. 10b, 11b, 12b., 13b, 14a, 15b.....
Golongan 9 : Tanaman dengan daun majemuk dan tersebar.
197a, 198b, 200b, 201a..... Famili 58. Mimosaceae. 1a, 2b, 3b, 4a
Genus 3. *Parkia* Spesies. *Parkia speciosa* Hassk. (Petai).

DESKRIPSI :

Pohon dengan kulit yang kerap kali coklat merah, tinggi 5-15 m. Daun menyirip rangkap, tangkai dengan 1 kelenjar yang tenggelam. Sirip 15-20 pasang, anak daun per sirip 15-46 pasang, tegak, dengan pangkal bertelinga dan membulat, ujung mempunyai tulang daun runcing dan tidak berarti, 4-10 kali 2-3 mm. Bunga dalam bongkol yang menggantung, bertangkai panjang, berbentuk penggada, berbilangan lima, yang terbawah tidak jelas kelaminnya dengan 10 staminodia, yang tengah jantan dengan 10 benangsari, yang tertinggi berkelamin dua dengan 10 benangsari dan bakal buah. Kelopak bertaju pendek,

Lampiran 1. Lanjutan


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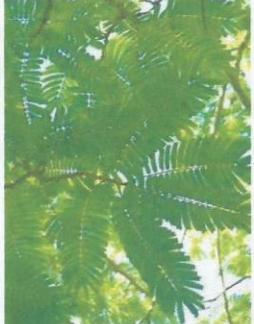
tidak sama. Daun mahkota pada pangkalnya melekat dengan kelopak dan tabung benang sari. Tangkai sari putih dan putih kuning, bersatu sampai tinggi. Polongan menggantung di atas tanda bekas mahkota, bertangkai, panjang 35-40 cm, bentuk pita dengan pangkal menyempit, lebar 3-5 cm, kerap kali terpuntir kuat, pada tempat biji melembung, dalam keadaan belum masak hijau kemudian hitam. Biji banyak, oval.

PUSTAKA :

Backer and van den Brink (1968) Flora of Java, Vol. I – III, Wolters – Noordhoff NV – Groningen – The Netherlands.

Cronquist, A. 1981. An Integrated System of Classification of Flowering Plants. Columbia University Press, New York.

Van Steenis, 2003. Flora Untuk Sekolah di Indonesia. Terjemahan Moeso Surjowinoto. Cetakan ke 9. PT Pradnya Paramita, Jakarta







Lampiran 2. Surat Keterangan telah Melaksanakan Penelitian di Bagian Biologi Farmasi Fakultas Farmasi Universitas Wahid Hasyim



**UNIVERSITAS WAHID HASYIM
FAKULTAS FARMASI
BAGIAN BIOLOGI FARMASI**

Jl. Menoreh Tengah X / 22 Sampangan – Semarang 50236 Telp. (024) 8505680 – 8505681 fax. (024) 8505680

SURAT KETERANGAN

No.139/Lab. Biologi Farmasi/C.05/UWH/VIII/2018

Assalamu'alaikum Wr. Wb.

Yang bertandatangan di bawah ini, Kepala Bagian Biologi Farmasi Universitas Wahid Hasyim Semarang menerangkan bahwa:

| | | |
|----------|---|-----------|
| Nama | : | Dista Ayu |
| NIM | : | 155010119 |
| Fakultas | : | Farmasi |

Telah melakukan pembuatan ekstrak daun petai dalam rangka penelitian dengan judul: “Korelasi Kadar Fenolik dan Flavonoid Total Fraksi N-Heksan, Etil Asetat dan Air Ekstrak Daun Petai (*Parkia speciosa* Hassk.) Terhadap Aktivitas Antioksidan”

Demikian surat keterangan ini dibuat untuk dipergunakan semestinya.

Wassalamu'alaikum Wr. Wb.



Dewi Andini K.M., M.Farm., Apt.

**Lampiran 3. Surat Keterangan telah Melaksanakan Penelitian di Bagian
Kimia Farmasi Fakultas Farmasi Universitas Wahid Hasyim**


**UNIVERSITAS WAHID HASYIM
FAKULTAS FARMASI
BAGIAN KIMIA FARMASI**
 Jl. Menoreh Tengah X / 22 Sampangan – Semarang 50236 Telp. (024) 8505680 – 8505681 fax. (024) 8505680

SURAT KETERANGAN
No. ~~D/~~Lab. Kimia Farmasi/ C.05/UWH/I/ 2019

Assalamu'alaikum Wr. Wb.

Yang bertanda tangan dibawah ini, Kepala Bagian Kimia Farmasi Fakultas Farmasi Universitas Wahid Hasyim Semarang menerangkan bahwa :

| | | |
|--------------------|---|---|
| Nama | : | Dista Ayu Astari |
| NIM | : | 155010119 |
| Fak/ Univ/ Sekolah | : | Farmasi / Universitas Wahid Hasyim Semarang |

Telah melakukan Penelitian Aktivitas Antioksidan, Penetapan Kadar Fenolik Total dan Flavonoid Total menggunakan Spektrofotometer di Laboratorium Kimia Analisa, Fakultas Farmasi Universitas Wahid Hasyim Semarang, dengan judul penelitian :
 “ Aktivitas Antioksidan, Penetapan Kadar Fenolik Total dan Flavonoid Total Fraksi n-Heksan, Etil Asetat dan Air Ekstrak Etanol Daun Petai (*Parkia speciosa* Hassk) ”

Demikian surat keterangan ini dibuat untuk dipergunakan semestinya.

Wassalamu'alaikum Wr. Wb.

Semarang, Februari 2019

Kep. Bag Kimia Farmasi



 Maria Ulfah, M.Sc, Apt

Lampiran 4. Perhitungan Susut Pengeringan dan Rendemen Ekstrak

a. Perhitungan Susut Pengeringan

$$\text{Susut Pengeringan} = \frac{\text{Bobot Awal} - \text{Bobot Akhir}}{\text{Bobot Awal}} \times 100 \%$$

$$\text{Susut Pengeringan} = \frac{6000 \text{ gram} - 2225 \text{ gram}}{6000 \text{ gram}} \times 100 \%$$

$$\text{Susut Pengeringan} = \frac{3775 \text{ gram}}{6000 \text{ gram}} \times 100 \%$$

$$\text{Susut Pengeringan} = 62 \%$$

b. Perhitungan Rendemen Ekstrak Etanol

$$\text{Rendemen Ekstrak} = \frac{\text{Bobot Ekstrak Kental}}{\text{Bobot Simplicia Kering}} \times 100 \%$$

$$\text{Rendemen Ekstrak Etanol 96 \%} = \frac{55 \text{ gram}}{200 \text{ gram}} \times 100 \% = 27,5 \%$$

c. Perhitungan Rendemen Fraksi

$$\text{Rendemen Fraksi} = \frac{\text{Bobot Ekstrak Kental}}{\text{Bobot Simplicia Kering}} \times 100 \%$$

$$\text{Rendemen Fraksi } n\text{-heksan} = \frac{5 \text{ gram}}{30 \text{ gram}} \times 100 \% = 16,6 \%$$

$$\text{Rendemen Fraksi etil asetat} = \frac{5 \text{ gram}}{30 \text{ gram}} \times 100 \% = 16,6 \%$$

$$\text{Rendemen Fraksi air} = \frac{3 \text{ gram}}{30 \text{ gram}} \times 100 \% = 10 \%$$

**Lampiran 5. Perhitungan Pembuatan Larutan Induk Ekstrak Etanol 96 %,
Fraksi *n*-Heksan, Etil Asetat, dan Air Daun Petai**

a. Penimbangan fraksi *n*-heksan, etil asetat, dan air ekstrak etanol daun petai

Fraksi *n*-heksan

| Keterangan | Penimbangan (mg) |
|----------------------------|------------------|
| Berat kaca arloji kosong | 35688,0 |
| Berat kaca arloji + zat | 35713,6 |
| Berat kaca arloji + sisa | 35688,2 |
| Berat zat <i>n</i> -heksan | 25,4 |

Fraksi Etil Asetat

| Keterangan | Penimbangan (mg) |
|------------------------------|------------------|
| Berat kaca arloji kosong | 35809,4 |
| Berat kaca arloji + zat | 35834,8 |
| Berat kaca arloji + sisa | 35809,6 |
| Berat zat fraksi etil asetat | 25,2 |

Fraksi Air

| Keterangan | Penimbangan (mg) |
|--------------------------|------------------|
| Berat kaca arloji kosong | 35715,2 |
| Berat kaca arloji + zat | 35740,8 |
| Berat kaca arloji + sisa | 35715,4 |
| Berat zat fraksi air | 25,4 |

Lampiran 5. Lanjutan**b. Pembuatan larutan induk fraksi n-heksan, etil asetat, dan air ekstrak etanol daun petai****1. Fraksi *n*-heksan**

Fraksi 508 ppm = 25,4 gram/50 mL

$$= 25400 \text{ mg}/50 \text{ mL}$$

Fraksi *n*-heksan daun petai 25400 mg dilarutkan dalam etanol p.a.ad

50 mL, dalam labu takar.

2. Fraksi etil asetat

Fraksi 504 ppm = 25,2 gram/50mL

$$= 25.200 \text{ mg}/50 \text{ mL}$$

Fraksi etil asetat daun petai 25200 mg dilarutkan dalam etanol p.a.ad

50 mL, dalam labu takar.

3. Fraksi air

Fraksi 508 ppm = 25,4 gram/50 mL

$$= 25.400 \text{ gram}/50 \text{ mL}$$

Fraksi air daun petai 25.400 mg dilarutkan dalam etanol p.a.ad 50 mL,

dalam labu takar.

**Lampiran 6. Pembuatan Larutan DPPH dan Seri Konsentrasi Vitamin C,
Ekstrak Etanol Fraksi *n*-Heksan, Etil Asetat, dan Air Daun
Petai**

a. Pembuatan larutan induk DPPH 0,1 mM sebanyak 250 mL

(Mr DPPH = 394,32 g/mol)

$$\text{Konsentrasi} = \frac{\text{Berat DPPH (gram)}}{\text{Mr}} \times \frac{1000}{\text{Volume pembuatan (ml)}}$$

$$\text{Konsentrasi} = \frac{9,858 \text{ gram}}{394,32 \text{ g/mol}} \times \frac{1000}{250 \text{ mL}}$$

$$\text{Konsentrasi} = 0,025 \times 4$$

$$\text{Konsentrasi} = 0,1 \text{ mM}$$

Sebanyak 9,858 mg ~ 10 mg DPPH dilarutkan dalam etanol p.a. ad 250 mL.

b. Pembuatan larutan induk vitamin C 196 ppm sebanyak 50 mL

$$\text{Vitamin C 196 ppm} = 0,098 \text{ gram/50 mL}$$

$$= 9,8 \text{ mg/ 50 mL}$$

Serbuk vitamin C sebanyak 9,8 mg ~ 10 mg dilarutkan dalam aquadest ad 50 mL dalam labu takar.

c. Penimbangan vitamin C

| Keterangan | Penimbangan Vitamin C (mg) |
|--------------------------|----------------------------|
| Berat kaca arloji kosong | 15023,2 |
| Berat kaca arloji + zat | 15033,2 |
| Berat kaca arloji + sisa | 15023,4 |
| Berat zat (vitamin C) | 9,8 |

Lampiran 6. Lanjutan**d. Pembuatan seri konsentrasi dari larutan induk vitamin C 196 ppm sebanyak 5 mL**

1. $1 \mu\text{g/mL} : V1 \times C1 = V2 \times C2$
 $V1 \times 196 \mu\text{g/mL} = 5 \text{ mL} \times 1 \mu\text{g/mL}$
 $V1 = 0,025 \text{ mL} \sim 25 \mu\text{L}$
2. $2 \mu\text{g/mL} : V1 \times C1 = V2 \times C2$
 $V1 \times 196 \mu\text{g/mL} = 5 \text{ mL} \times 2 \mu\text{g/mL}$
 $V1 = 0,051 \text{ mL} \sim 51 \mu\text{L}$
3. $3 \mu\text{g/mL} : V1 \times C1 = V2 \times C2$
 $V1 \times 196 \mu\text{g/mL} = 5 \text{ mL} \times 3 \mu\text{g/mL}$
 $V1 = 0,076 \text{ mL} \sim 76 \mu\text{L}$
4. $4 \mu\text{g/mL} : V1 \times C1 = V2 \times C2$
 $V1 \times 196 \mu\text{g/mL} = 5 \text{ mL} \times 4 \mu\text{g/mL}$
 $V1 = 0,102 \text{ mL} \sim 102 \mu\text{L}$
5. $5 \mu\text{g/mL} : V1 \times C1 = V2 \times C2$
 $V1 \times 196 \mu\text{g/mL} = 5 \text{ mL} \times 5 \mu\text{g/mL}$
 $V1 = 0,127 \text{ mL} \sim 127 \mu\text{L}$
6. $6 \mu\text{g/mL} : V1 \times C1 = V2 \times C2$
 $V1 \times 196 \mu\text{g/mL} = 5 \text{ mL} \times 6 \mu\text{g/mL}$
 $V1 = 0,153 \text{ mL} \sim 153 \mu\text{L}$
7. $7 \mu\text{g/mL} : V1 \times C1 = V2 \times C2$
 $V1 \times 196 \mu\text{g/mL} = 5 \text{ mL} \times 7 \mu\text{g/mL}$
 $V1 = 0,178 \text{ mL} \sim 178 \mu\text{L}$
8. $8 \mu\text{g/mL} : V1 \times C1 = V2 \times C2$
 $V1 \times 196 \mu\text{g/mL} = 5 \text{ mL} \times 8 \mu\text{g/mL}$
 $V1 = 0,204 \text{ mL} \sim 204 \mu\text{L}$

Lampiran 6. Lanjutan

e. Pembuatan seri konsentrasi fraksi *n*-heksan, etil asetat, dan air ekstrak etanol daun petai

1. Fraksi *n*-heksan

$$\begin{aligned}
 20 \mu\text{g/mL} : \quad V_1 \times C_1 &= V_2 \times C_2 \\
 V_1 \times 508 \text{ ppm} &= 5 \text{ mL} \times 20 \text{ ppm} \\
 V_1 &= 0,197 \text{ mL} \sim 197 \mu\text{L} \\
 40 \mu\text{g/mL} : \quad V_1 \times C_1 &= V_2 \times C_2 \\
 V_1 \times 508 \text{ ppm} &= 5 \text{ mL} \times 40 \text{ ppm} \\
 V_1 &= 0,394 \text{ mL} \sim 394 \mu\text{L} \\
 60 \mu\text{g/mL} : \quad V_1 \times C_1 &= V_2 \times C_2 \\
 V_1 \times 508 \text{ ppm} &= 5 \text{ mL} \times 60 \text{ ppm} \\
 V_1 &= 0,590 \text{ mL} \sim 590 \mu\text{L} \\
 80 \mu\text{g/mL} : \quad V_1 \times C_1 &= V_2 \times C_2 \\
 V_1 \times 508 \text{ ppm} &= 5 \text{ mL} \times 80 \text{ ppm} \\
 V_1 &= 0,787 \text{ mL} \sim 787 \mu\text{L} \\
 100 \mu\text{g/mL} : \quad V_1 \times C_1 &= V_2 \times C_2 \\
 V_1 \times 508 \text{ ppm} &= 5 \text{ mL} \times 100 \text{ ppm} \\
 V_1 &= 0,984 \text{ mL} \sim 984 \mu\text{L} \\
 120 \mu\text{g/mL} : \quad V_1 \times C_1 &= V_2 \times C_2 \\
 V_1 \times 508 \text{ ppm} &= 5 \text{ mL} \times 120 \text{ ppm} \\
 V_1 &= 1,181 \text{ mL} \sim 1181 \mu\text{L}
 \end{aligned}$$

Lampiran 6. Lanjutan

2. Fraksi Etil Asetat

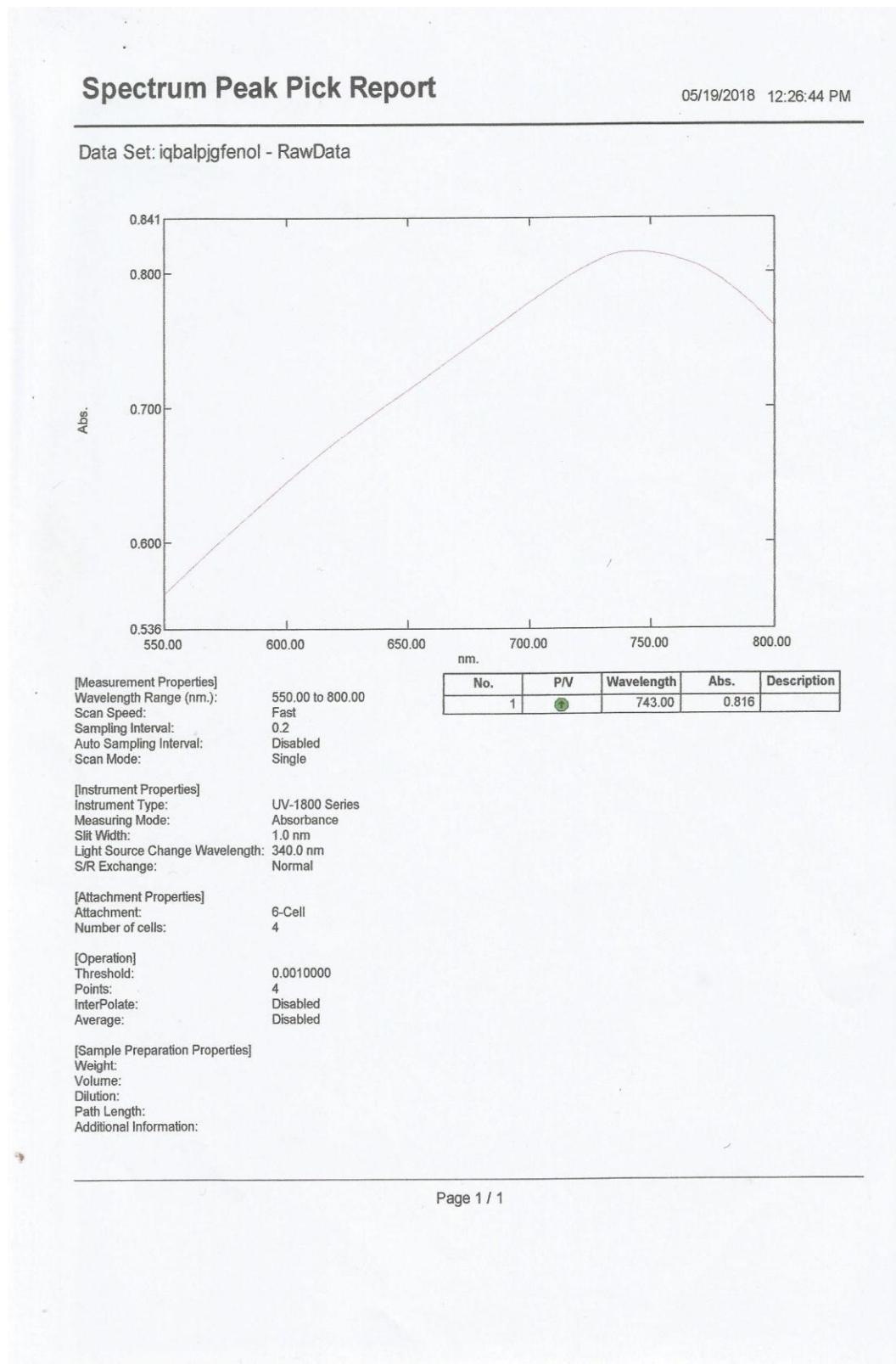
$$\begin{aligned}
 20 \text{ } \mu\text{g/mL} : \quad V_1 \times C_1 &= V_2 \times C_2 \\
 V_1 \times 504 \text{ ppm} &= 5 \text{ mL} \times 20 \text{ ppm} \\
 V_1 &= 0,198 \text{ mL} \sim 198 \text{ } \mu\text{L} \\
 40 \text{ } \mu\text{g/mL} : \quad V_1 \times C_1 &= V_2 \times C_2 \\
 V_1 \times 504 \text{ ppm} &= 5 \text{ mL} \times 40 \text{ ppm} \\
 V_1 &= 0,397 \text{ mL} \sim 397 \text{ } \mu\text{L} \\
 60 \text{ } \mu\text{g/mL} : \quad V_1 \times C_1 &= V_2 \times C_2 \\
 V_1 \times 504 \text{ ppm} &= 5 \text{ mL} \times 60 \text{ ppm} \\
 V_1 &= 0,595 \text{ mL} \sim 595 \text{ } \mu\text{L} \\
 80 \text{ } \mu\text{g/mL} : \quad V_1 \times C_1 &= V_2 \times C_2 \\
 V_1 \times 504 \text{ ppm} &= 5 \text{ mL} \times 80 \text{ ppm} \\
 V_1 &= 0,794 \text{ mL} \sim 794 \text{ } \mu\text{L} \\
 100 \text{ } \mu\text{g/mL} : \quad V_1 \times C_1 &= V_2 \times C_2 \\
 V_1 \times 504 \text{ ppm} &= 5 \text{ mL} \times 100 \text{ ppm} \\
 V_1 &= 0,992 \text{ mL} \sim 992 \text{ } \mu\text{L} \\
 120 \text{ } \mu\text{g/mL} : \quad V_1 \times C_1 &= V_2 \times C_2 \\
 V_1 \times 504 \text{ ppm} &= 5 \text{ mL} \times 120 \text{ ppm} \\
 V_1 &= 1,190 \text{ mL} \sim 1,190 \text{ } \mu\text{L}
 \end{aligned}$$

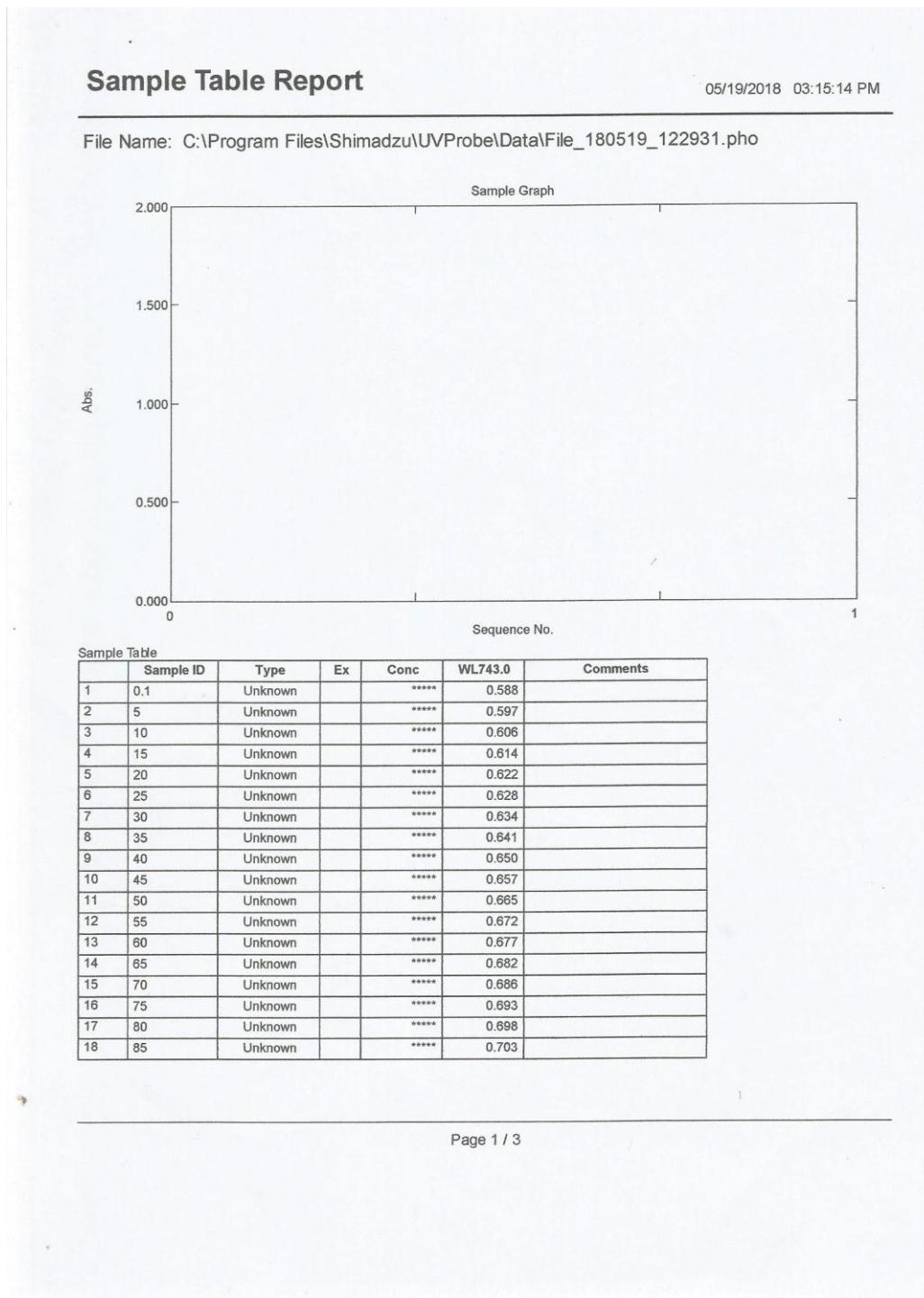
Lampiran 6. Lanjutan

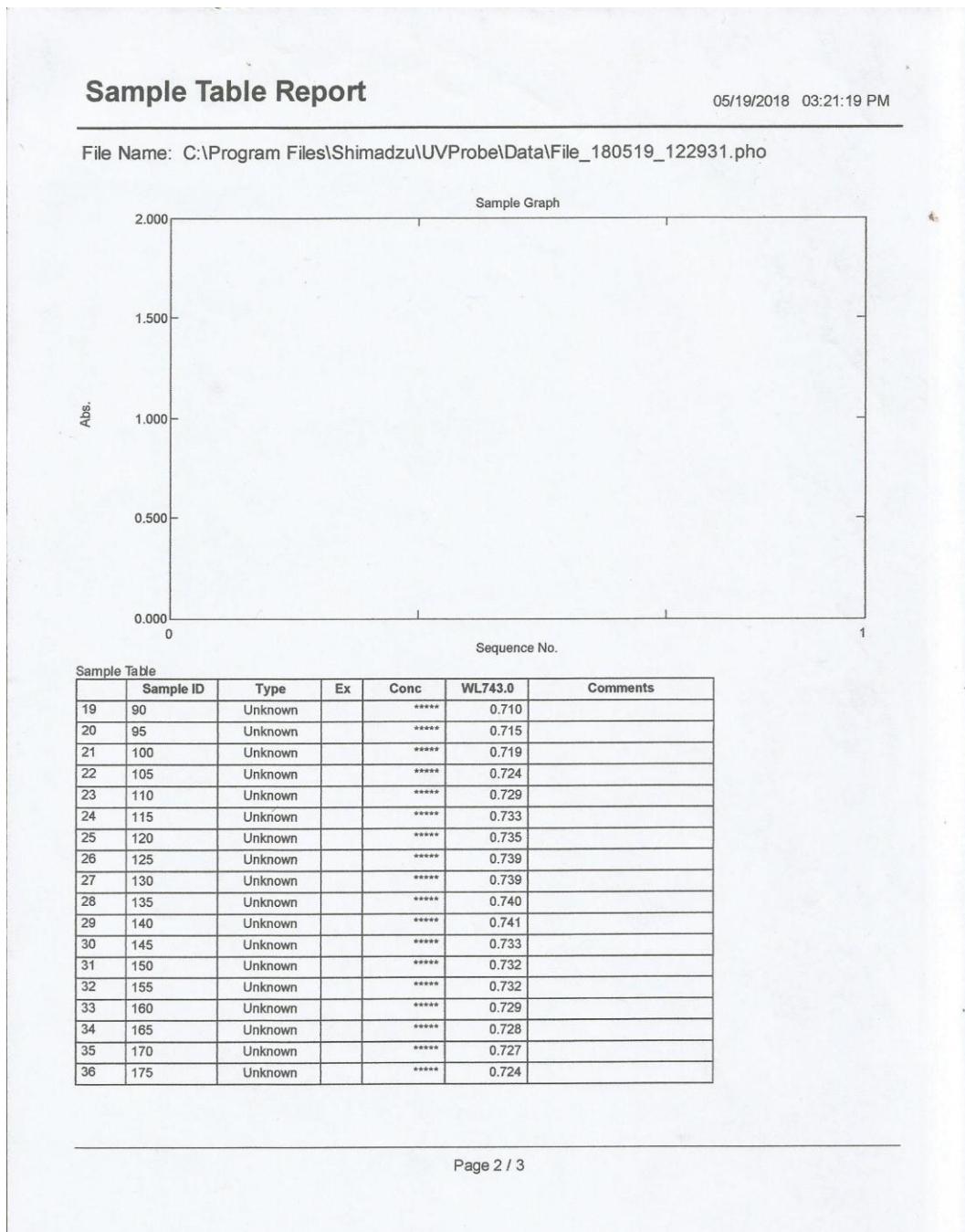
3. Fraksi air

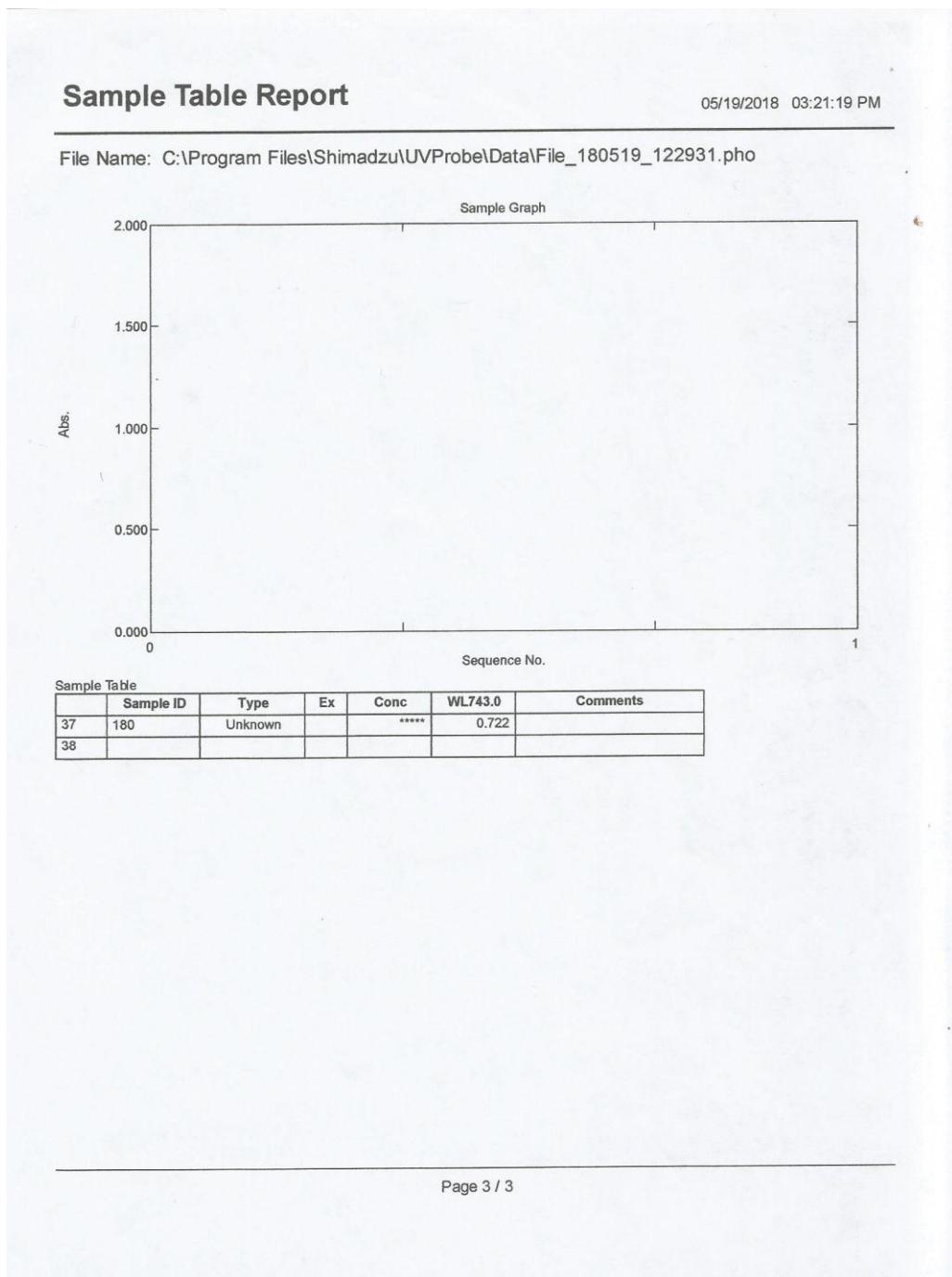
$$\begin{aligned}
 20 \text{ } \mu\text{g/mL} : \quad V_1 \times C_1 &= V_2 \times C_2 \\
 V_1 \times 508 \text{ ppm} &= 5 \text{ mL} \times 20 \text{ ppm} \\
 V_1 &= 0,197 \text{ mL} \sim 197 \text{ } \mu\text{L} \\
 40 \text{ } \mu\text{g/mL} : \quad V_1 \times C_1 &= V_2 \times C_2 \\
 V_1 \times 508 \text{ ppm} &= 5 \text{ mL} \times 40 \text{ ppm} \\
 V_1 &= 0,394 \text{ mL} \sim 394 \text{ } \mu\text{L} \\
 60 \text{ } \mu\text{g/mL} : \quad V_1 \times C_1 &= V_2 \times C_2 \\
 V_1 \times 508 \text{ ppm} &= 5 \text{ mL} \times 60 \text{ ppm} \\
 V_1 &= 0,590 \text{ mL} \sim 590 \text{ } \mu\text{L} \\
 80 \text{ } \mu\text{g/mL} : \quad V_1 \times C_1 &= V_2 \times C_2 \\
 V_1 \times 508 \text{ ppm} &= 5 \text{ mL} \times 80 \text{ ppm} \\
 V_1 &= 0,787 \text{ mL} \sim 787 \text{ } \mu\text{L} \\
 100 \text{ } \mu\text{g/mL} : \quad V_1 \times C_1 &= V_2 \times C_2 \\
 V_1 \times 508 \text{ ppm} &= 5 \text{ mL} \times 100 \text{ ppm} \\
 V_1 &= 0,984 \text{ mL} \sim 984 \text{ } \mu\text{L} \\
 120 \text{ } \mu\text{g/mL} : \quad V_1 \times C_1 &= V_2 \times C_2 \\
 V_1 \times 508 \text{ ppm} &= 5 \text{ mL} \times 120 \text{ ppm} \\
 V_1 &= 1,181 \text{ mL} \sim 1181 \text{ } \mu\text{L}
 \end{aligned}$$

Lampiran 7. Penentuan Panjang Gelombang (λ) Maksimum Asam Galat

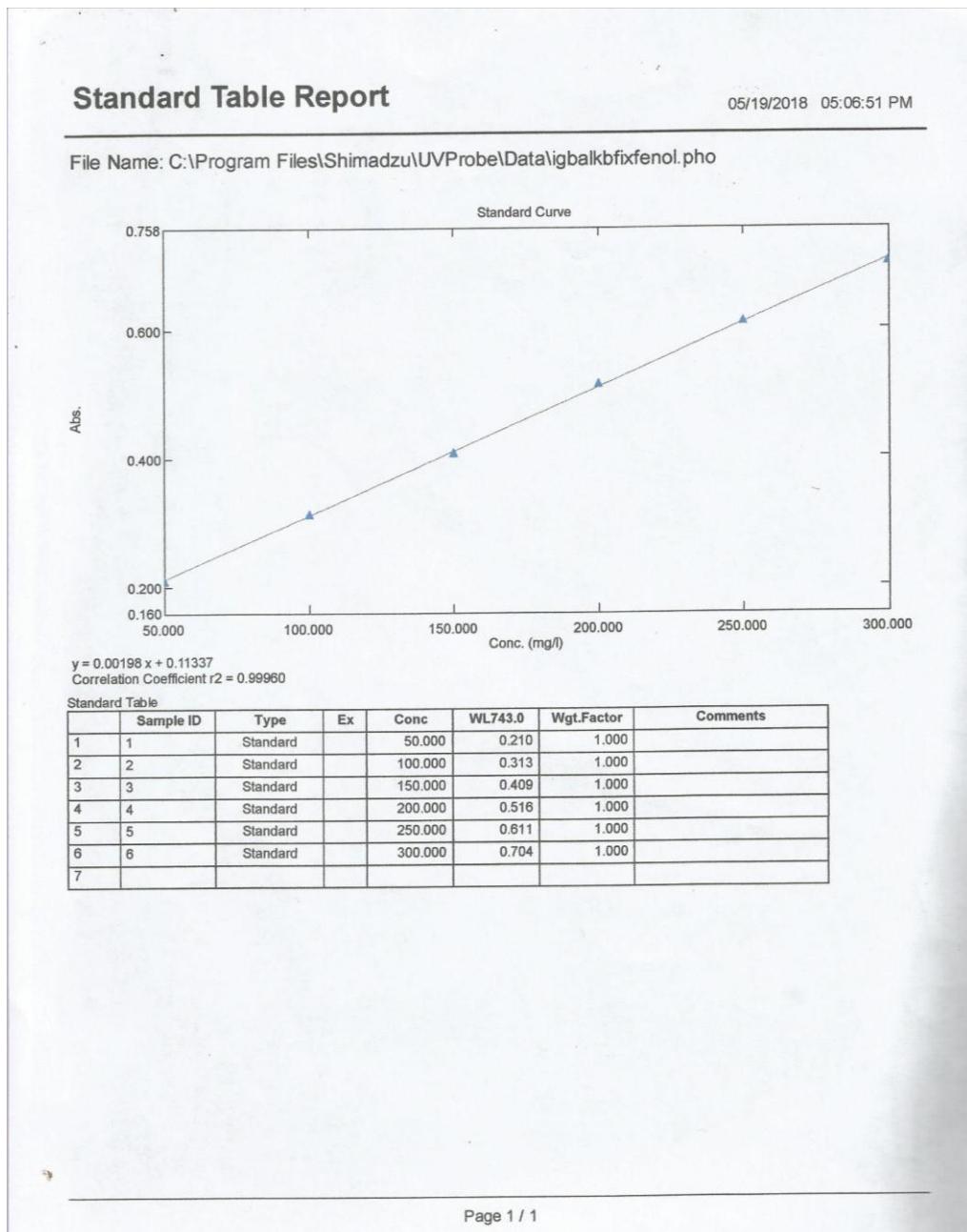


Lampiran 8. Penentuan *Operating Time* (OT) Asam Galat

Lampiran 8. Lnjutan

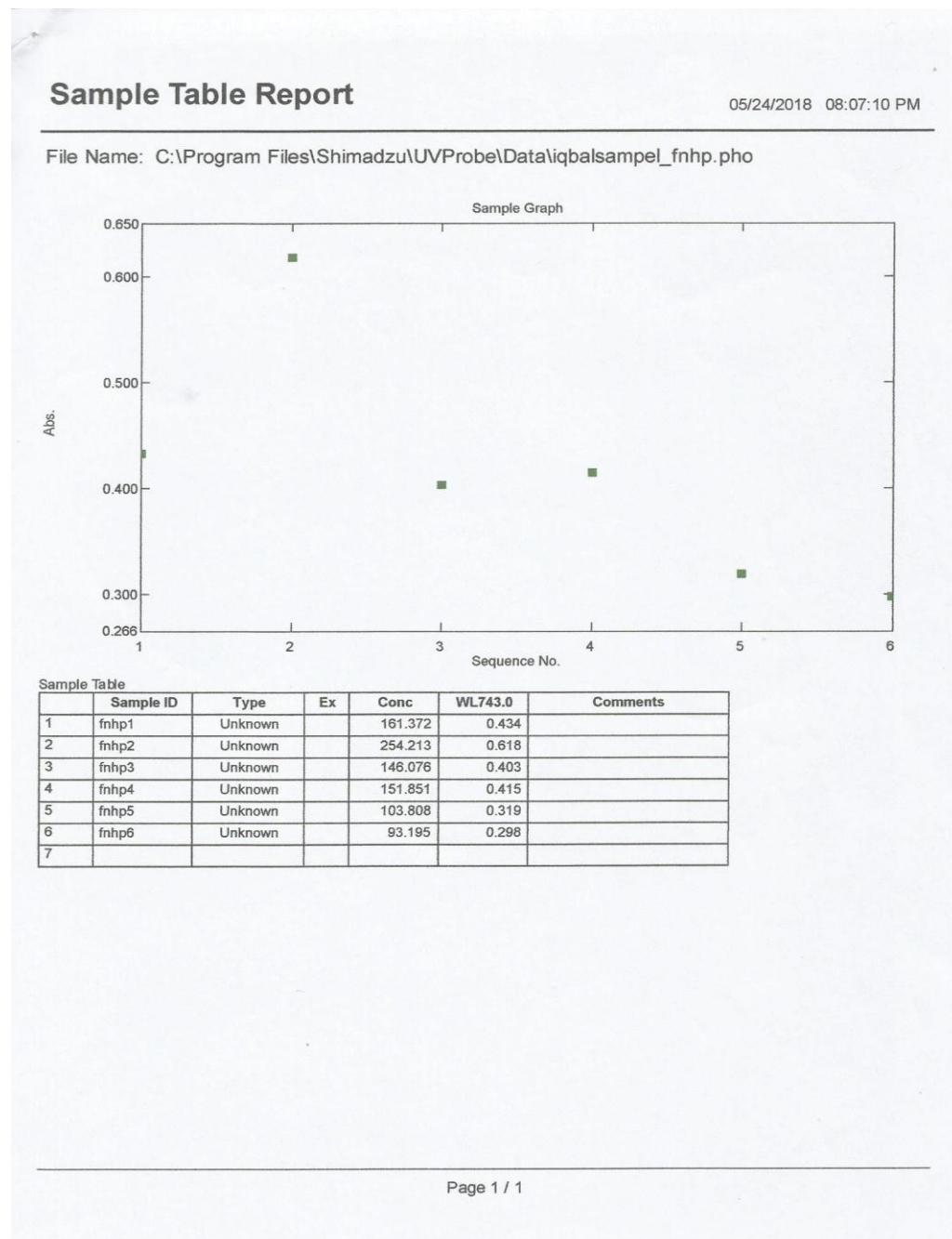
Lampiran 8. Lnjutan

Lampiran 9. Penetapan Kurva Baku Asam Galat



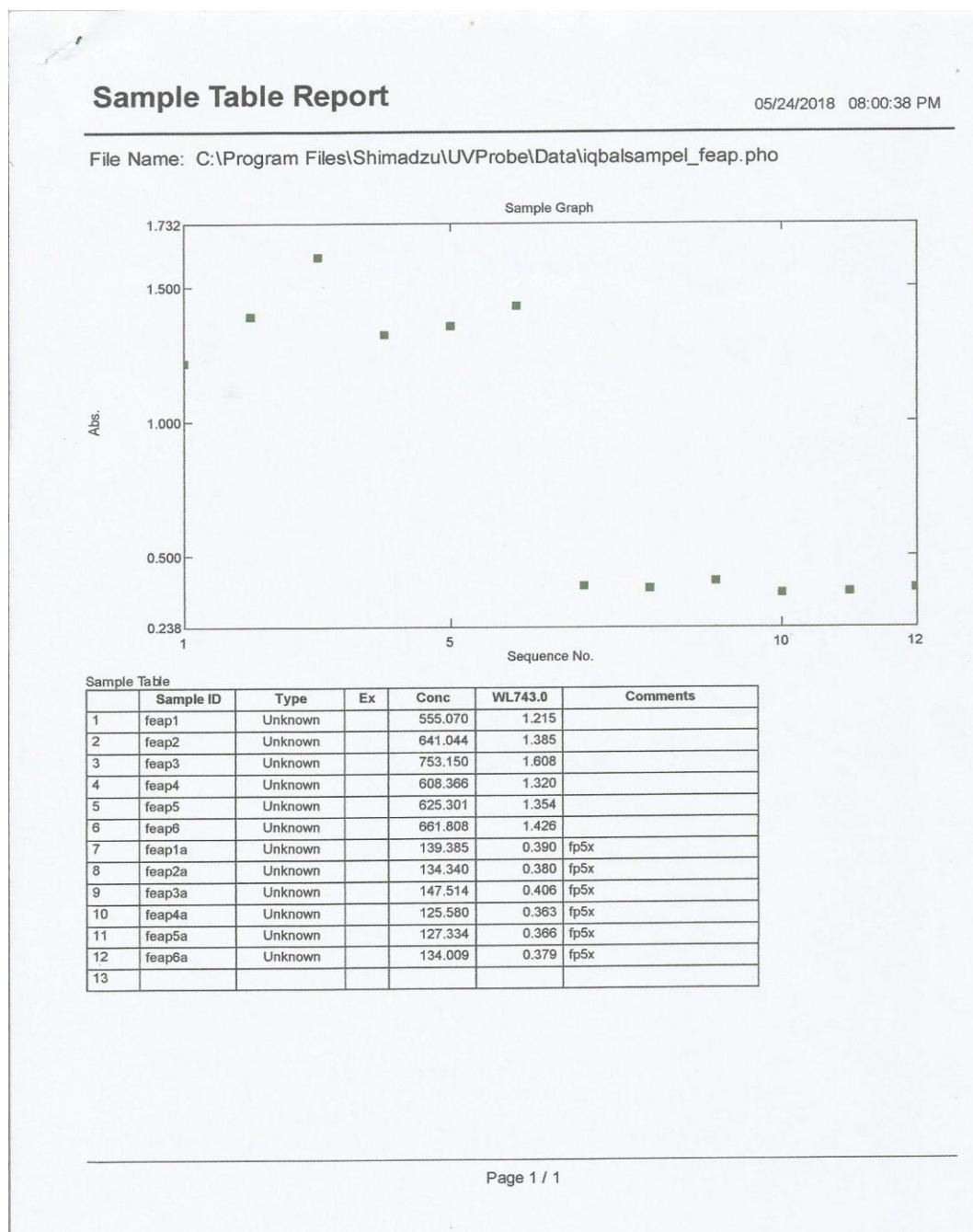
Lampiran 10. Pembacaan Absorbansi Sampel Fenolik Fraksi *n*-Heksan, Etil Asetat, dan Air Daun Petai

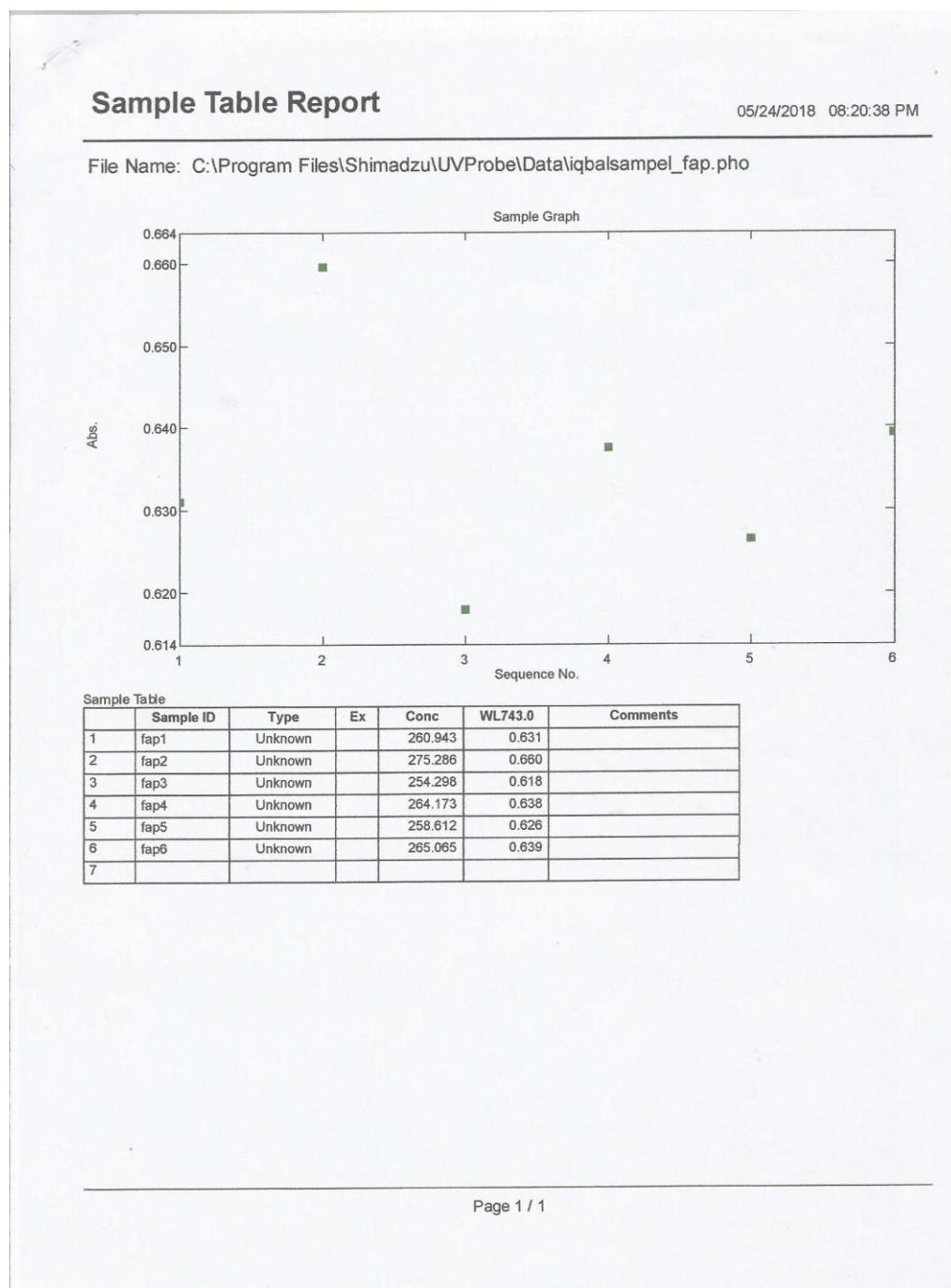
a. Fraksi *n*-Heksan



Lampiran 10. Lanjutan

b. Fraksi Etil Asetat



Lampiran 10. Lanjutan**c. Fraksi Air**

Lampiran 11. Perhitungan Kandungan Fenolik Total

1. Kurva Baku Asam Galat

| Sampel | Konsentrasi ($\mu\text{g/mL}$) (x) | Rerata Absorbansi (y) | Persamaan Regresi |
|------------|--|-----------------------------|--|
| Asam Galat | 50 | 0,210 | $y = 0,00198 x + 0,1134$ $r = 0,9998$ |
| | 100 | 0,313 | |
| | 150 | 0,409 | |
| | 200 | 0,516 | |
| | 250 | 0,611 | |
| | 300 | 0,704 | |

2. Perhitungan Kadar Fenolik Total

$$\text{Kadar fenolik} = \frac{X \times F_p \times \text{Vol total Ekstrak}}{\text{Bobot penimbangan (gram)}} \text{ (\mu g/gram)}$$

$$\text{Kadar fenolik} = \frac{X \times F_p \times 10 \text{ mL}}{0,025 \text{ gram}} \text{ (\mu g/gram)}$$

$$\text{Kadar fenolik} = \frac{X \times F_p \times 10 \text{ mL}}{0,025 \text{ gram} \times 1000} \text{ (mg/gram)}$$

a. Fraksi n-Heksan

R1

$$\text{abs : } 0,434$$

$$y = 0,00198 x + 0,1134$$

$$0,434 = 0,00198 x + 0,1134$$

$$x = 161,919 \text{ ppm}$$

$$\text{Kadar fenol} = \frac{161,919 \times 50 \text{ mL} \times 1}{0,025 \times 1000} \text{ (mg/gram)} = \mathbf{323,838 \text{ mg/gram}}$$

R2

$$\text{abs : } 0,403$$

$$y = 0,00198 x + 0,1134$$

$$0,403 = 0,00198 x + 0,1134$$

$$x = 146,263 \text{ ppm}$$

$$\text{Kadar fenol} = \frac{146,263 \times 50 \text{ mL} \times 1}{0,025 \times 1000} \text{ (mg/gram)} = \mathbf{292,526 \text{ mg/gram}}$$

Lampiran 11. Lanjutan

R3

abs : 0,415

$$y = 0,00198 x + 0,1134$$

$$0,415 = 0,00198 x + 0,1134$$

$$x = 152,323 \text{ ppm}$$

$$\text{Kadar fenol} = \frac{152,323 \times 50 \text{ mL} \times 1}{0,025 \times 1000} \text{ (mg/gram)} = \mathbf{304,646 \text{ mg/gram}}$$

b. Fraksi Etil Asetat (pengenceran 5 kali)

R1

abs : 0,390

$$y = 0,00198 x + 0,1134$$

$$0,390 = 0,00198 x + 0,1134$$

$$x = 139,697 \text{ ppm}$$

$$\text{Kadar fenol} = \frac{139,697 \times 50 \text{ mL} \times 5}{0,025 \times 1000} \text{ (mg/gram)} = \mathbf{1.396,970 \text{ mg/gram}}$$

R2

abs : 0,380

$$y = 0,00198 x + 0,1134$$

$$0,380 = 0,00198 x + 0,1134$$

$$x = 134,646 \text{ ppm}$$

$$\text{Kadar fenol} = \frac{134,646 \times 50 \text{ mL} \times 5}{0,025 \times 1000} \text{ (mg/gram)} = \mathbf{1.346,460 \text{ mg/gram}}$$

R3

abs : 0,379

$$y = 0,00198 x + 0,1134$$

$$0,379 = 0,00198 x + 0,1134$$

$$x = 134,141 \text{ ppm}$$

$$\text{Kadar fenol} = \frac{134,141 \times 50 \text{ mL} \times 5}{0,025 \times 1000} \text{ (mg/gram)} = \mathbf{1.341,410 \text{ mg/gram}}$$

c. Fraksi Air

R1

abs : 0,631

$$y = 0,00198 x + 0,1134$$

$$0,631 = 0,00198 x + 0,1134$$

$$x = 261,414 \text{ ppm}$$

$$\text{Kadar flavonoid} = \frac{261,414 \times 50 \text{ mL} \times 1}{0,025 \times 1000} \text{ (mg/gram)} = \mathbf{522,828}$$

mg/gram

Lampiran 11. Lanjutan

R2

abs : 0,638

$$y = 0,00198 x + 0,1134$$

$$0,638 = 0,00198 x + 0,1134$$

$$x = 264,949 \text{ ppm}$$

$$\text{Kadar fenol} = \frac{264,949 \times 50 \text{ mL} \times 1}{0,025 \times 1000} \text{ (mg/gram)} = \mathbf{528,988 \text{ mg/gram}}$$

R3

abs : 0,639

$$y = 0,00198 x + 0,1134$$

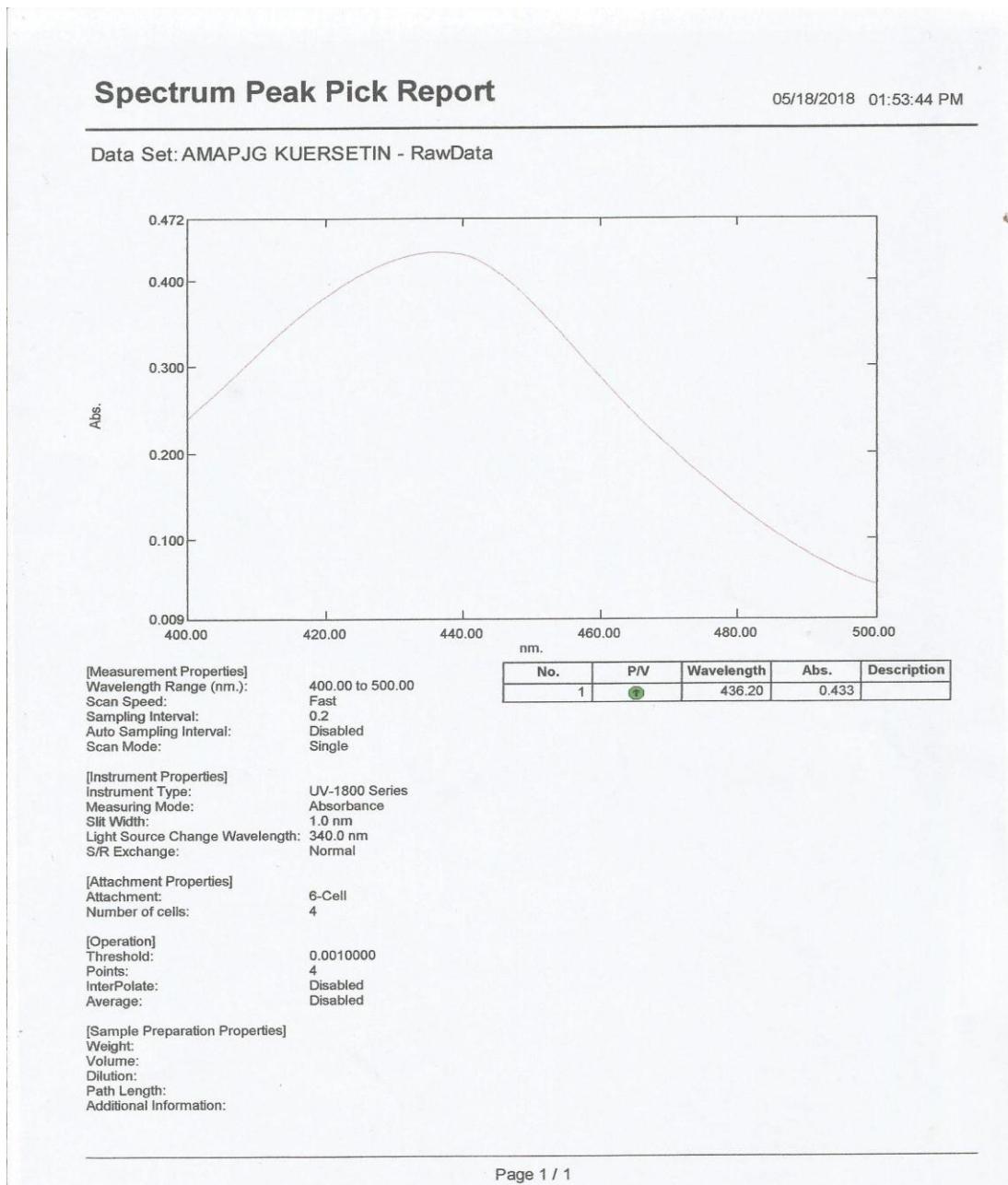
$$0,639 = 0,00198 x + 0,1134$$

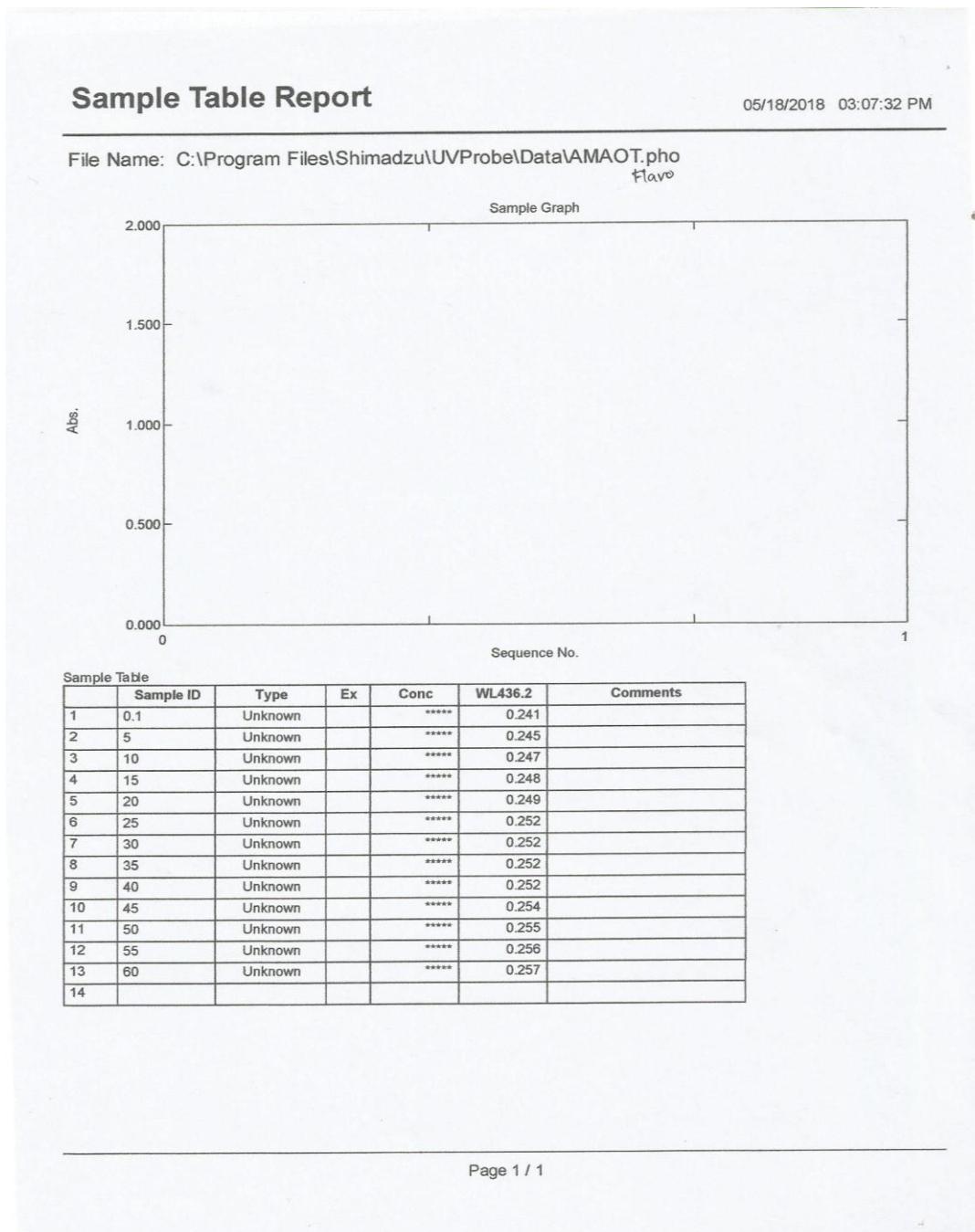
$$x = 265,454 \text{ ppm}$$

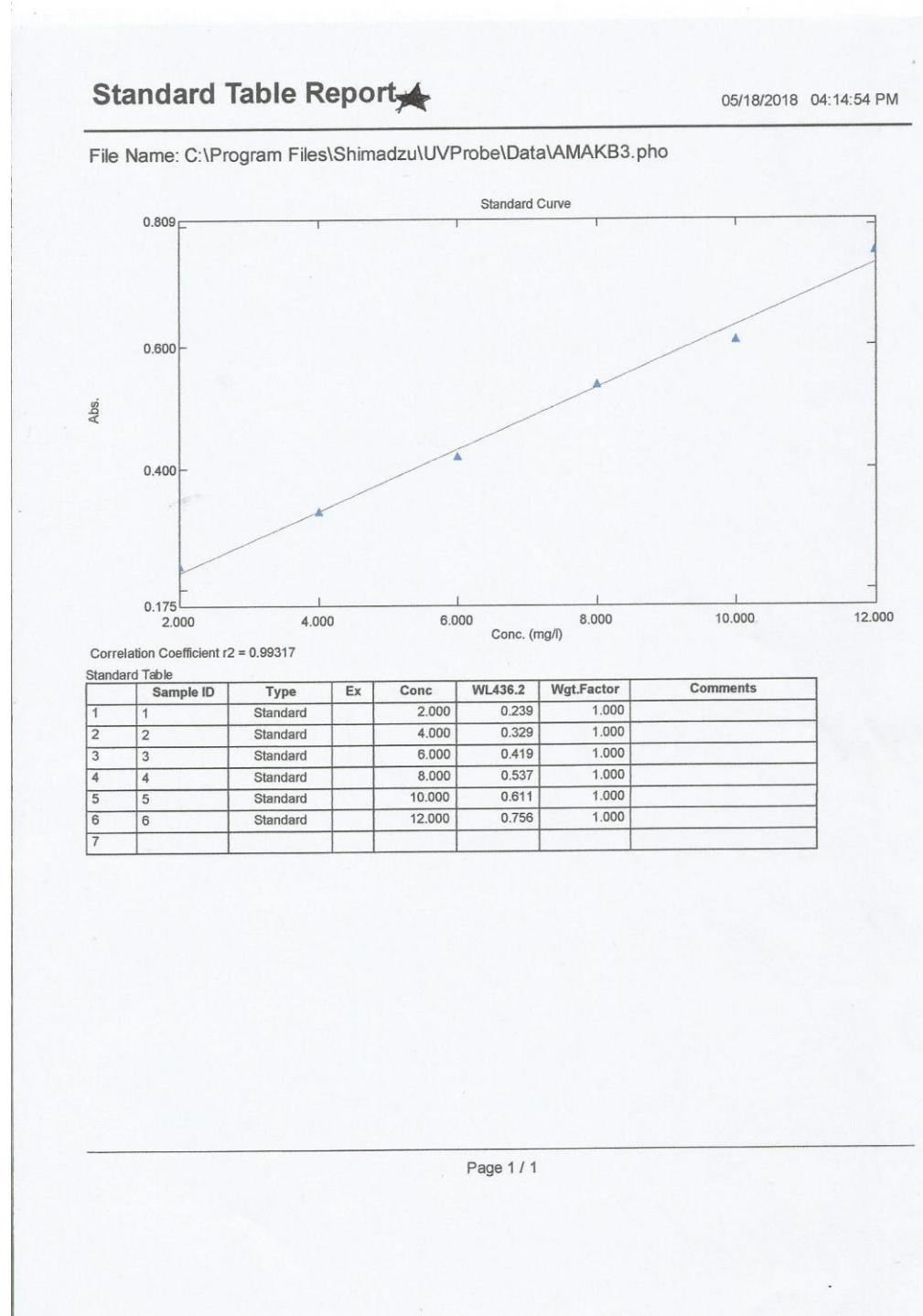
$$\text{Kadar fenol} = \frac{265,454 \times 50 \text{ mL} \times 1}{0,025 \times 1000} \text{ (mg/gram)} = \mathbf{530,908 \text{ mg/gram}}$$

| Sampel | Replikasi | Kadar (mg/gram) | Rata-rata (mg/gram) | SD |
|-------------------------|-----------|--------------------|------------------------|-------|
| Fraksi <i>n</i> -heksan | 1 | 323,838 | 306,943 | 1,578 |
| | 2 | 292,526 | | |
| | 3 | 304,646 | | |
| Fraksi Etil Asetat | 1 | 1.396,970 | 1361,613 | 3,072 |
| | 2 | 1.346,460 | | |
| | 3 | 1.341,410 | | |
| Fraksi Air | 1 | 522,828 | 527,575 | 4,355 |
| | 2 | 528,988 | | |
| | 3 | 530,908 | | |

Lampiran 12. Penentuan Panjang Gelombang (λ) Maksimum Kuersetin

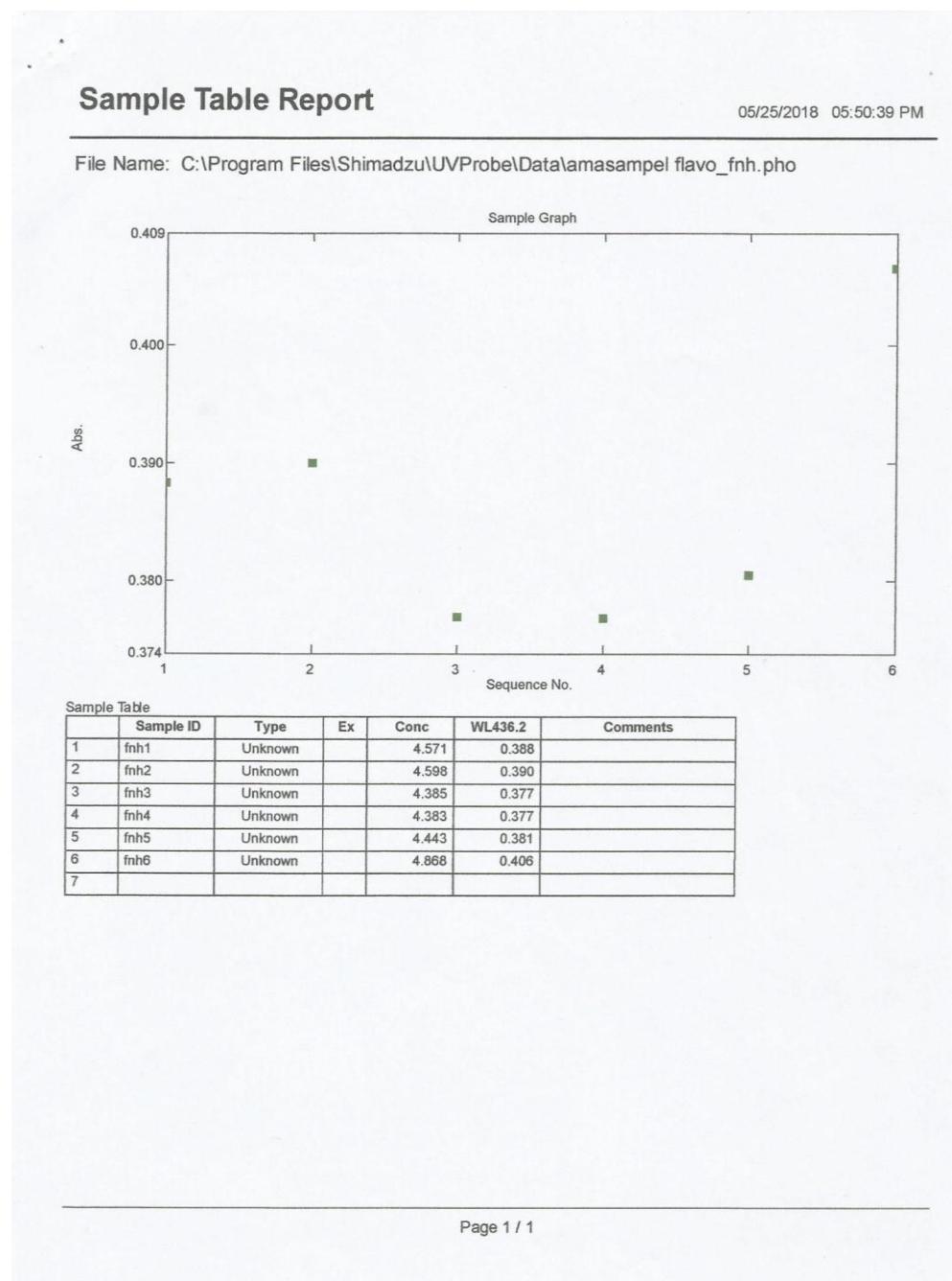


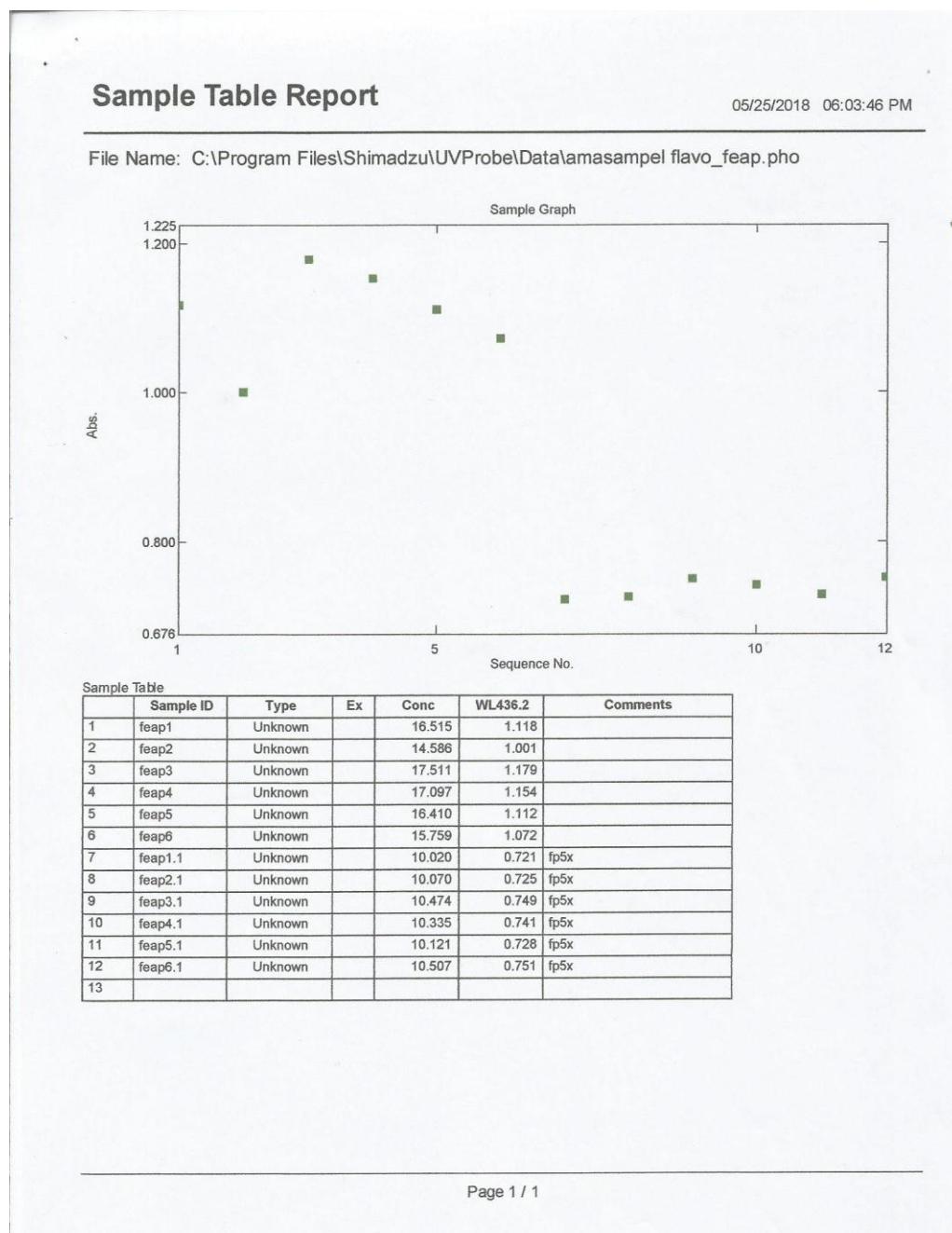
Lampiran 13. Penentuan *Operating Time* (OT) Kuersetin

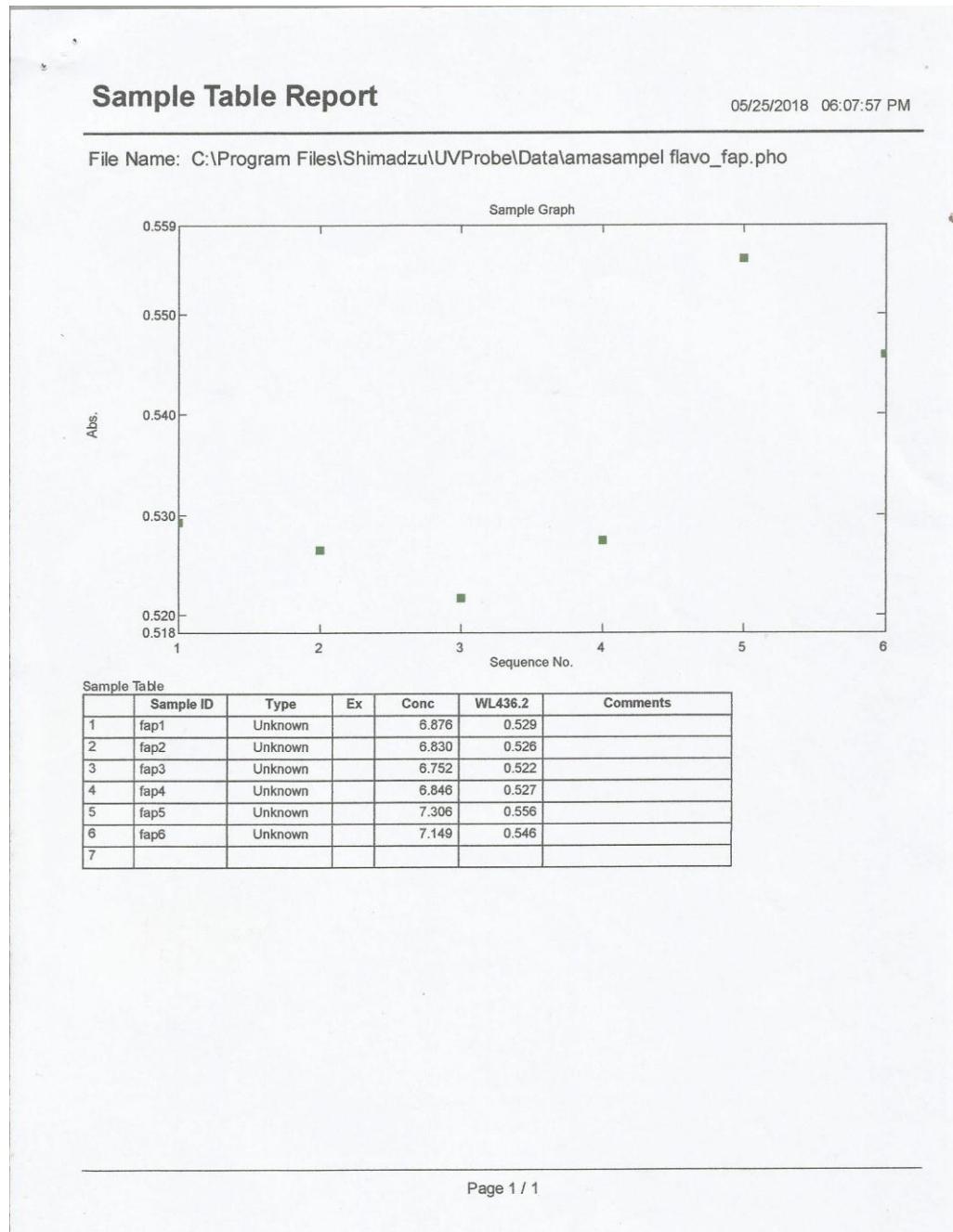
Lampiran 14. Penetapan Kurva Baku Kuersetin

Lampiran 15. Pembacaan Absorbansi Sampel Flavonoid Fraksi *n*-Heksan, Etil Asetat, dan Air Ekstrak Etanol Daun Petai

a. Fraksi *n*-Heksan



Lampiran 15. Lanjutan**b. Fraksi Etil Asetat**

Lampiran 15. Lanjutan**c. Fraksi Air**

Lampiran 16. Perhitungan Kandungan Flavonoid Total

1. Kurva Baku Quersetin

| Sampel | Konsentrasi ($\mu\text{g/mL}$) (x) | Rerata Absorbansi (y) | Persamaan Regresi |
|-----------|--|-----------------------------|---|
| Quersetin | 2 | 0,239 | $y = 0,0507 x + 0,1269$ $r = 0,9965$ |
| | 4 | 0,329 | |
| | 6 | 0,419 | |
| | 8 | 0,537 | |
| | 10 | 0,611 | |
| | 12 | 0,756 | |

2. Perhitungan Kadar Flavonoid Total

$$\text{Kadar flavonoid} = \frac{X \times F_p \times \text{Vol total Ekstrak}}{\text{Bobot penimbangan (gram)}} \text{ } (\mu\text{g/gram})$$

$$\text{Kadar flavonoid} = \frac{X \times F_p \times 50 \text{ mL}}{0,025 \text{ gram}} \text{ } (\mu\text{g/gram})$$

$$\text{Kadar flavonoid} = \frac{X \times F_p \times 50 \text{ mL}}{0,025 \text{ gram} \times 1000} \text{ } (\text{mg/gram})$$

a. Fraksi n-Heksan

R1

$$\text{abs} : 0,377$$

$$y = 0,0507 x + 0,1269$$

$$0,377 = 0,0507 x + 0,1269$$

$$x = 4,933 \text{ ppm}$$

$$\text{Kadar flavonoid} = \frac{4,933 \times 50 \text{ mL} \times 1}{0,025 \times 1000} \text{ } (\text{mg/gram}) = \mathbf{9,866 \text{ mg/gram}}$$

R2

$$\text{abs} : 0,377$$

$$y = 0,0507 x + 0,1269$$

$$0,377 = 0,0507 x + 0,1269$$

$$x = 4,933 \text{ ppm}$$

$$\text{Kadar flavonoid} = \frac{4,933 \times 50 \text{ mL} \times 1}{0,025 \times 1000} \text{ } (\text{mg/gram}) = \mathbf{9,866 \text{ mg/gram}}$$

Lampiran 16. Lanjutan

R3

abs : 0,381

$$y = 0,0507 x + 0,1269$$

$$0,381 = 0,0507 x + 0,1269$$

$$x = 5,012 \text{ ppm}$$

$$\text{Kadar flavonoid} = \frac{5,012 \times 50 \text{ mL} \times 1}{0,025 \times 1000} \text{ (mg/gram)} = \mathbf{10,024 \text{ mg/gram}}$$

b. Fraksi Etil Asetat (Pengenceran 5x)

R1

abs : 0,725

$$y = 0,0507 x + 0,1269$$

$$0,725 = 0,0507 x + 0,1269$$

$$x = 11,797 \text{ ppm}$$

$$\text{Kadar flavonoid} = \frac{11,797 \times 50 \text{ mL} \times 5}{0,025 \times 1000} \text{ (mg/gram)} = \mathbf{117,970 \text{ mg/gram}}$$

R2

abs : 0,741

$$y = 0,0507 x + 0,1269$$

$$0,741 = 0,0507 x + 0,1269$$

$$x = 12,112 \text{ ppm}$$

$$\text{Kadar flavonoid} = \frac{12,112 \times 50 \text{ mL} \times 5}{0,025 \times 1000} \text{ (mg/gram)} = \mathbf{121,120 \text{ mg/gram}}$$

R3

abs : 0,728

$$y = 0,0507 x + 0,1269$$

$$0,728 = 0,0507 x + 0,1269$$

$$x = 11,856 \text{ ppm}$$

$$\text{Kadar flavonoid} = \frac{11,856 \times 50 \text{ mL} \times 5}{0,025 \times 1000} \text{ (mg/gram)} = \mathbf{118,560 \text{ mg/gram}}$$

c. Fraksi Air

R1

abs : 0,529

$$y = 0,0507 x + 0,1269$$

$$0,529 = 0,0507 x + 0,1269$$

$$x = 7,931 \text{ ppm}$$

$$\text{Kadar flavonoid} = \frac{7,931 \times 50 \text{ mL} \times 1}{0,025 \times 1000} \text{ (mg/gram)} = \mathbf{15,862 \text{ mg/gram}}$$

Lampiran 16. Lanjutan

R2

abs : 0,526

$$y = 0,0507 x + 0,1269$$

$$0,526 = 0,0507 x + 0,1269$$

$$x = 7,872 \text{ ppm}$$

$$\text{Kadar flavonoid} = \frac{7,872 \times 50 \text{ mL} \times 1}{0,025 \times 1000} \text{ (mg/gram)} = \mathbf{15,744 \text{ mg/gram}}$$

R3

abs : 0,527

$$y = 0,0507 x + 0,1269$$

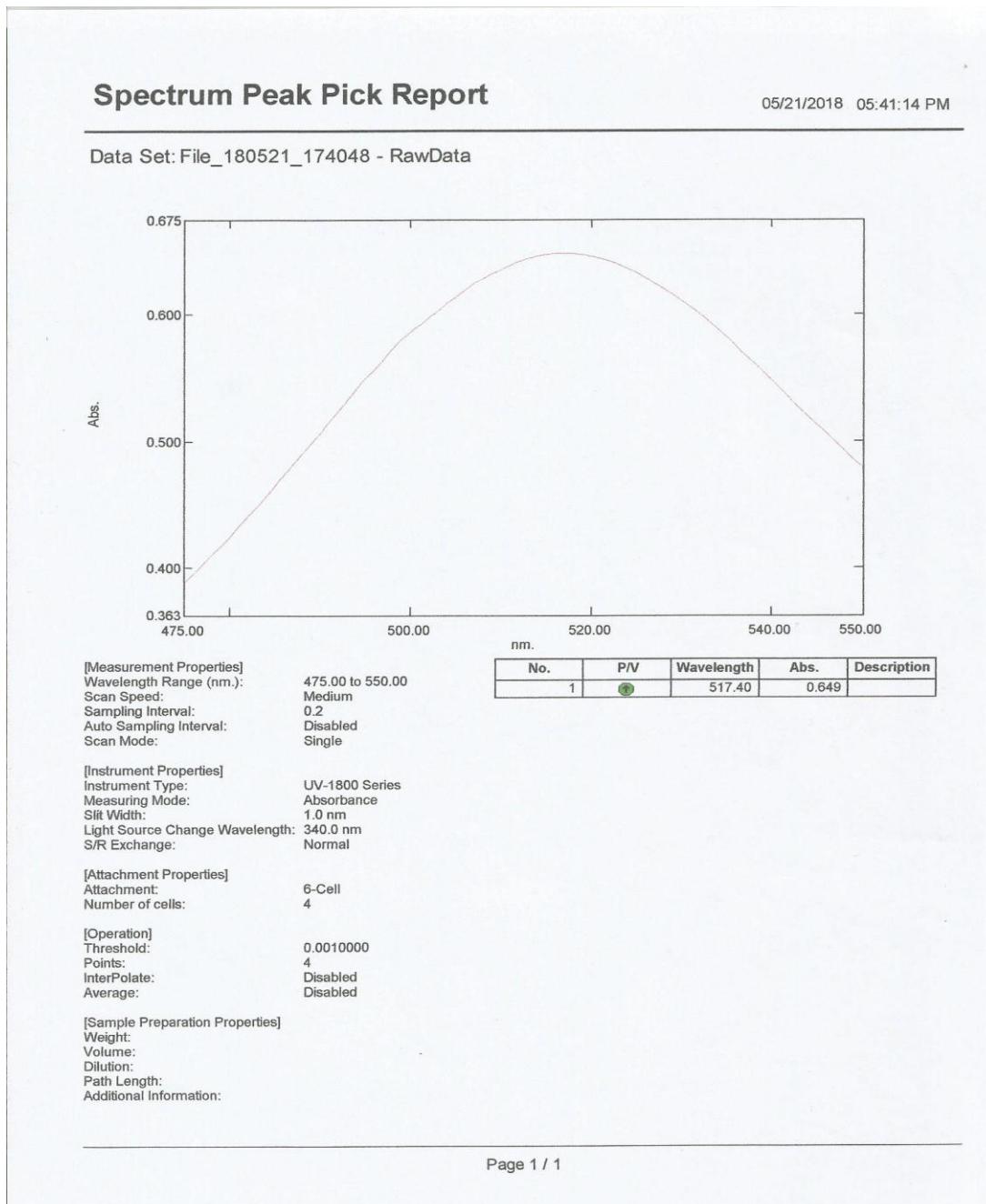
$$0,527 = 0,0507 x + 0,1269$$

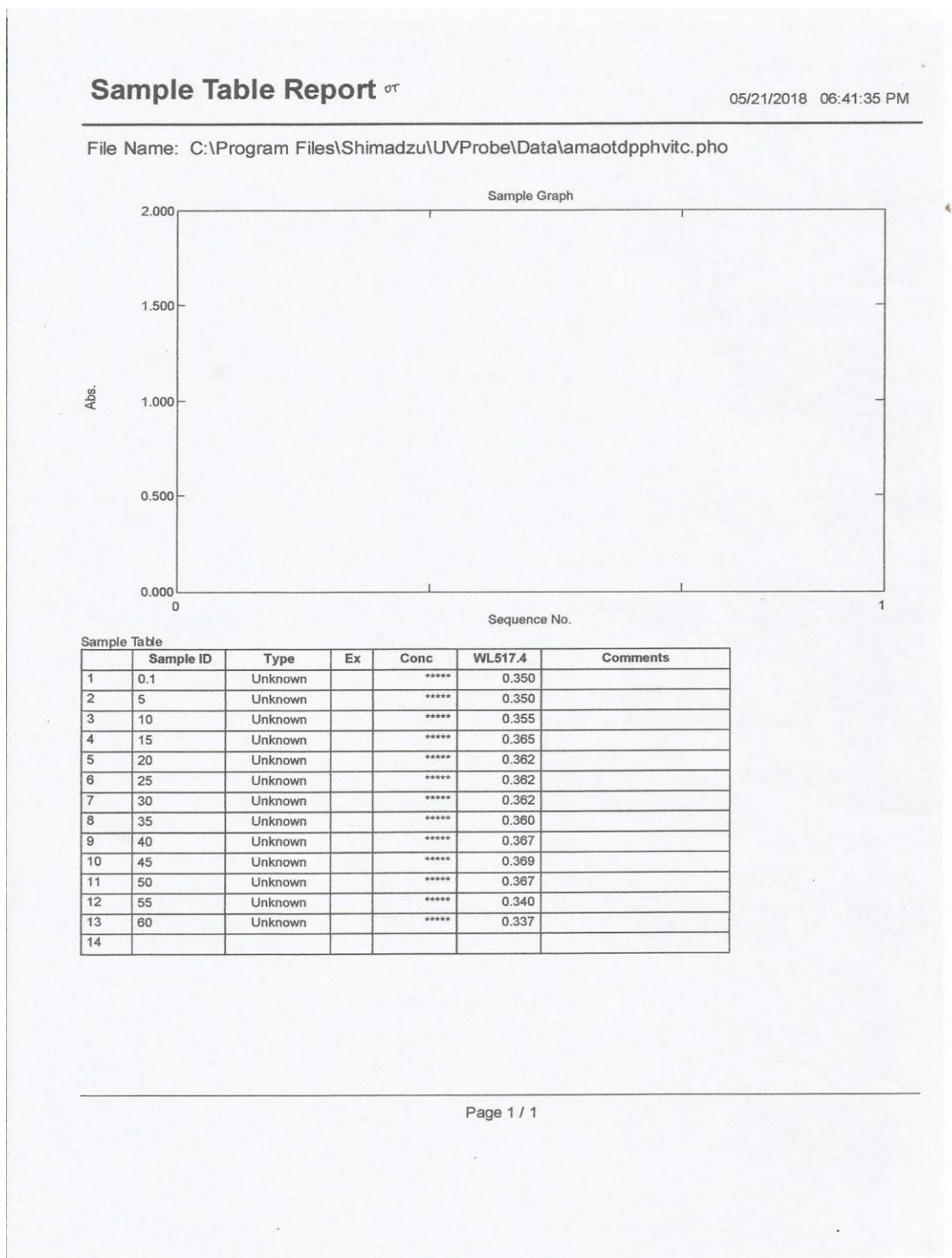
$$x = 7,891 \text{ ppm}$$

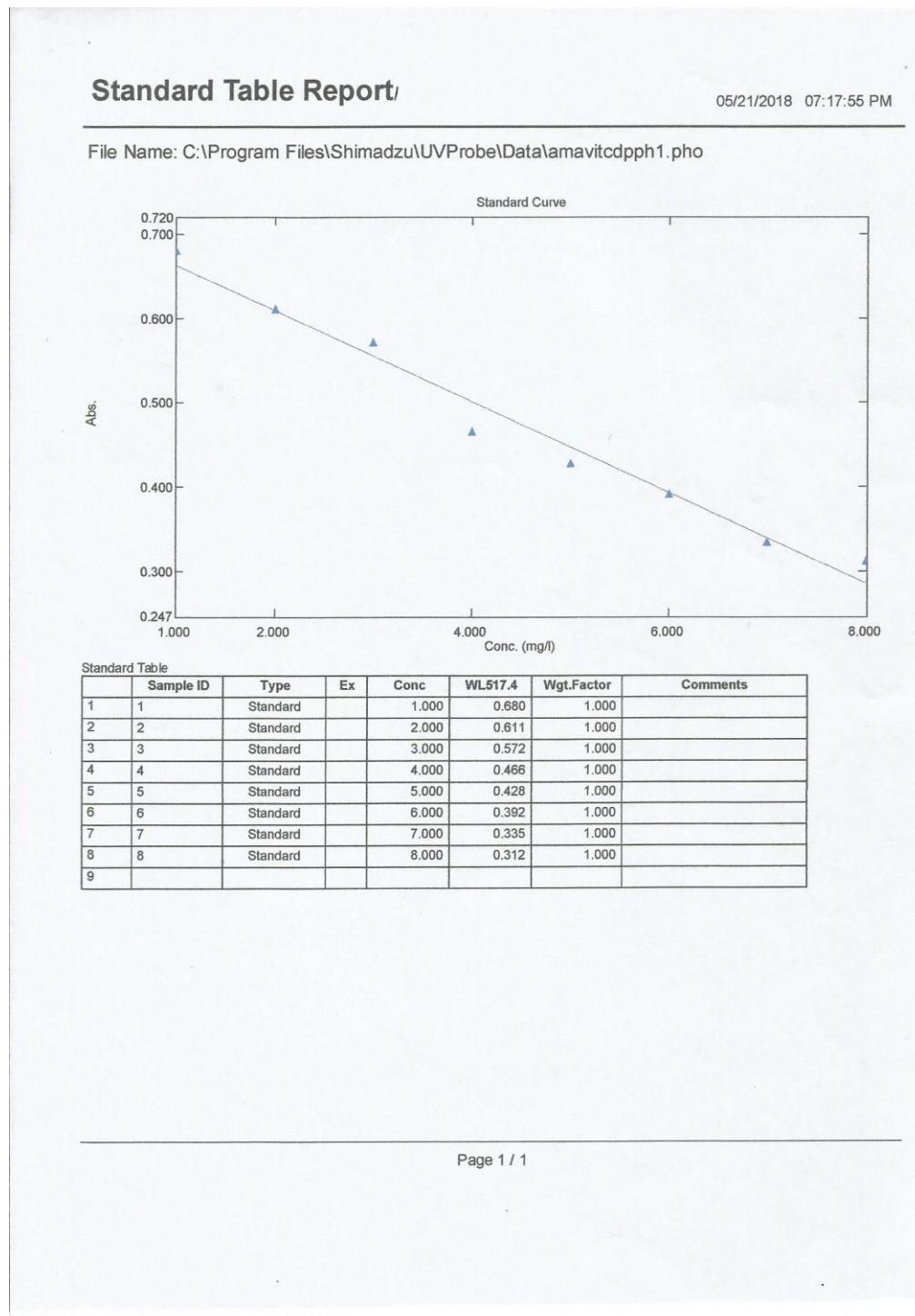
$$\text{Kadar flavonoid} = \frac{7,891 \times 50 \text{ mL} \times 1}{0,025 \times 1000} \text{ (mg/gram)} = \mathbf{15,782 \text{ mg/gram}}$$

| Sampel | Replikasi | Kadar (mg/gram) | Rata-rata (mg/gram) | SD |
|--------------------|-----------|--------------------|------------------------|-------|
| Fraksi n-heksan | 1 | 9,866 | 9,918 | 0,091 |
| | 2 | 9,866 | | |
| | 3 | 10,024 | | |
| Fraksi etil asetat | 1 | 117,970 | 119,217 | 1,674 |
| | 2 | 121,120 | | |
| | 3 | 118,560 | | |
| Fraksi Air | 1 | 15,862 | 15,796 | 2,511 |
| | 2 | 15,744 | | |
| | 3 | 15,782 | | |

Lampiran 17. Penentuan Panjang Gelombang Maksimum DPPH

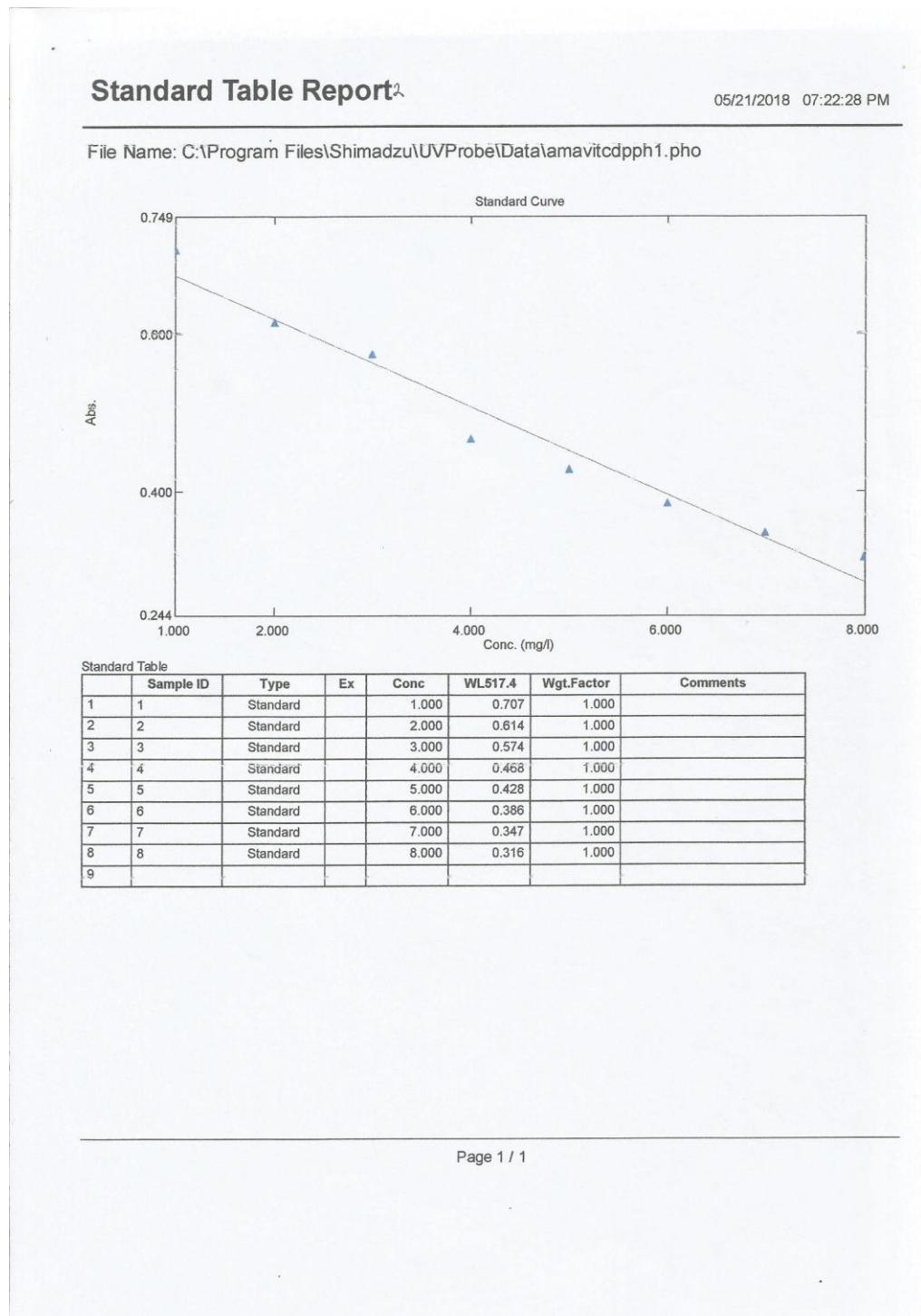


Lampiran 18. Penentuan *Operating Time* (OT) DPPH Dengan Vitamin C

Lampiran 19. Penetapan Kurva Baku Vitamin C**a. Replikasi 1**

Lampiran 19. Lanjutan

b. Replikasi 2



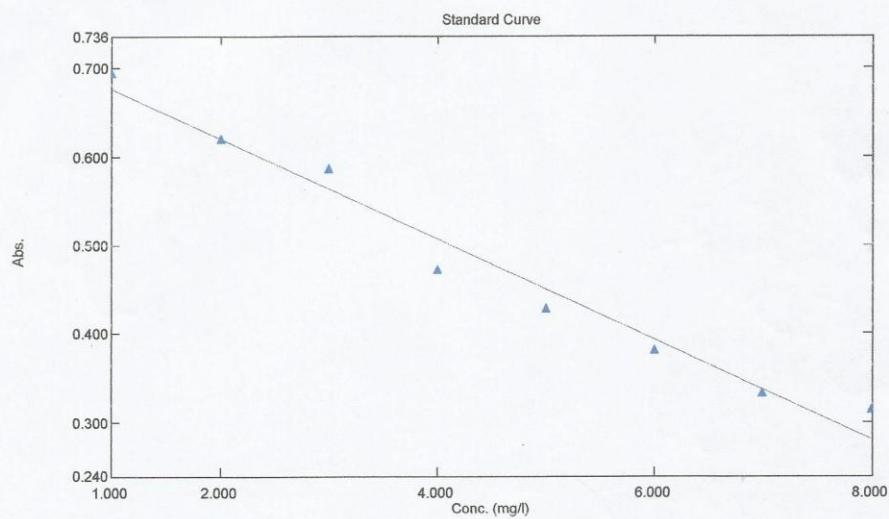
Lampiran 19. Lanjutan

c. Replikasi 3

Standard Table Report

05/21/2018 07:28:29 PM

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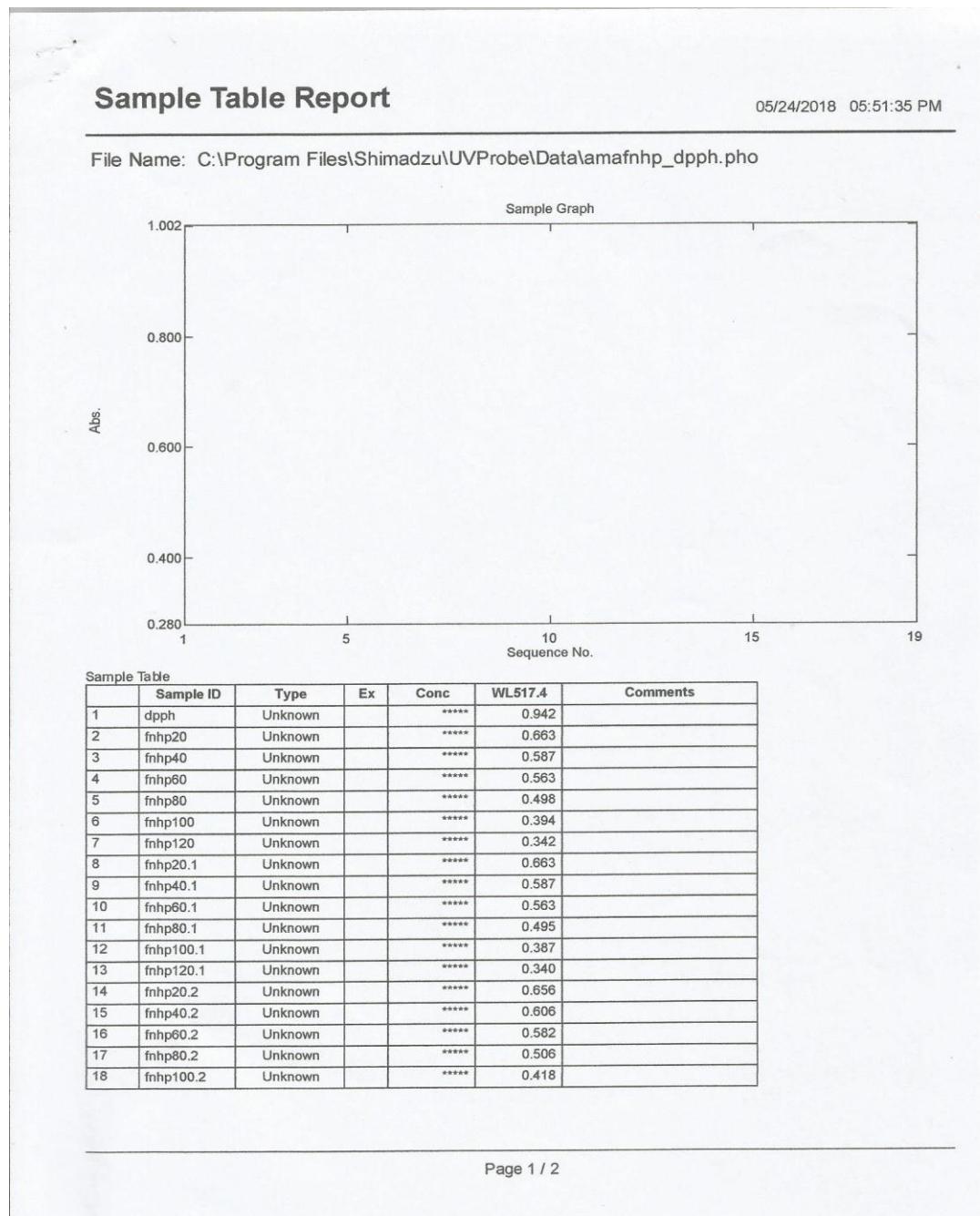


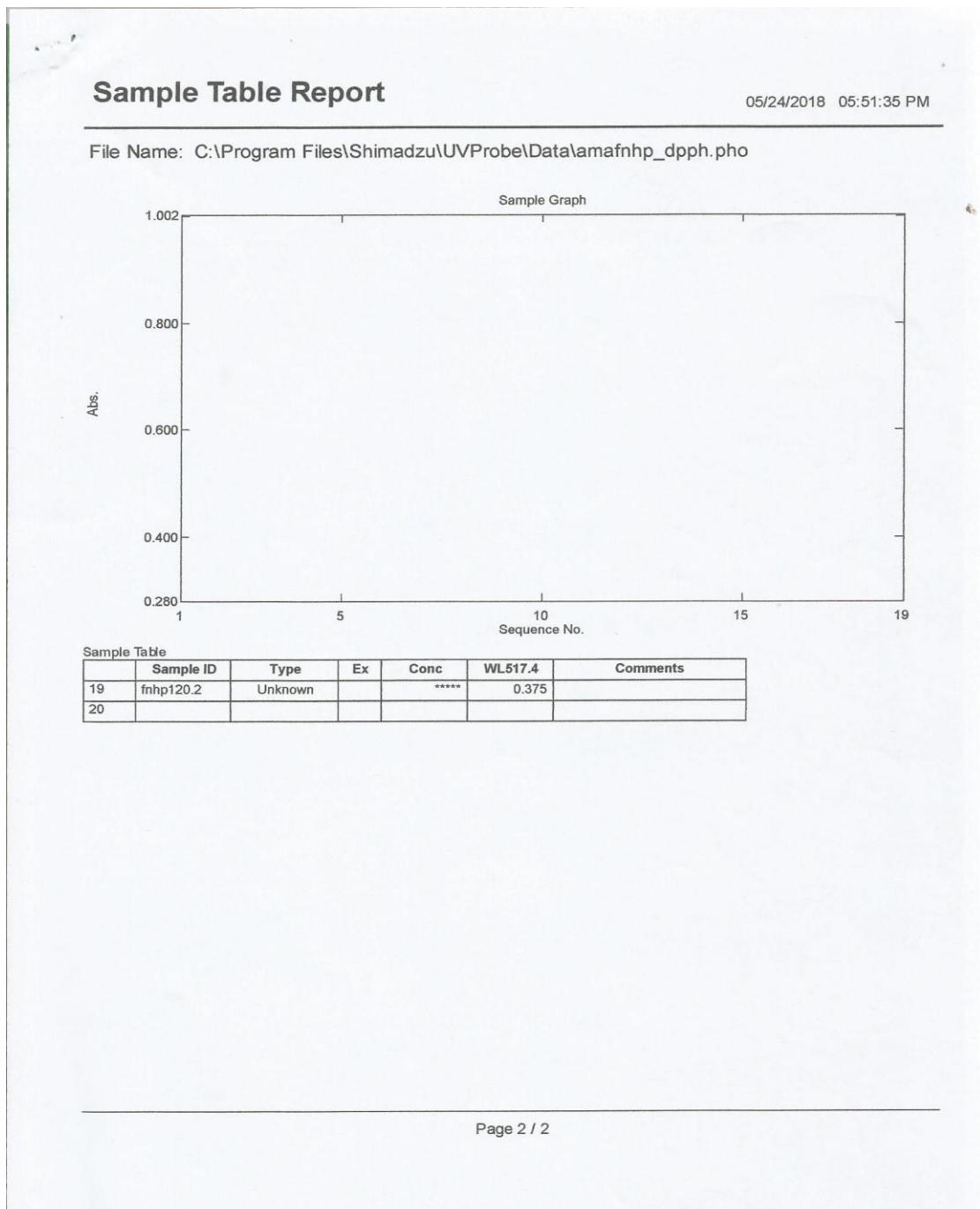
Standard Table

| | Sample ID | Type | Ex | Conc | WL517.4 | Wgt.Factor | Comments |
|---|-----------|----------|----|-------|---------|------------|----------|
| 1 | 1 | Standard | | 1.000 | 0.694 | 1.000 | |
| 2 | 2 | Standard | | 2.000 | 0.620 | 1.000 | |
| 3 | 3 | Standard | | 3.000 | 0.586 | 1.000 | |
| 4 | 4 | Standard | | 4.000 | 0.472 | 1.000 | |
| 5 | 5 | Standard | | 5.000 | 0.429 | 1.000 | |
| 6 | 6 | Standard | | 6.000 | 0.382 | 1.000 | |
| 7 | 7 | Standard | | 7.000 | 0.333 | 1.000 | |
| 8 | 8 | Standard | | 8.000 | 0.314 | 1.000 | |
| 9 | | | | | | | |

Lampiran 20. Pembacaan Absorbansi Sampel Antioksidan Fraksi *n*-Heksan, Etil Asetat, dan Air Ekstrak Etanol Daun Petai

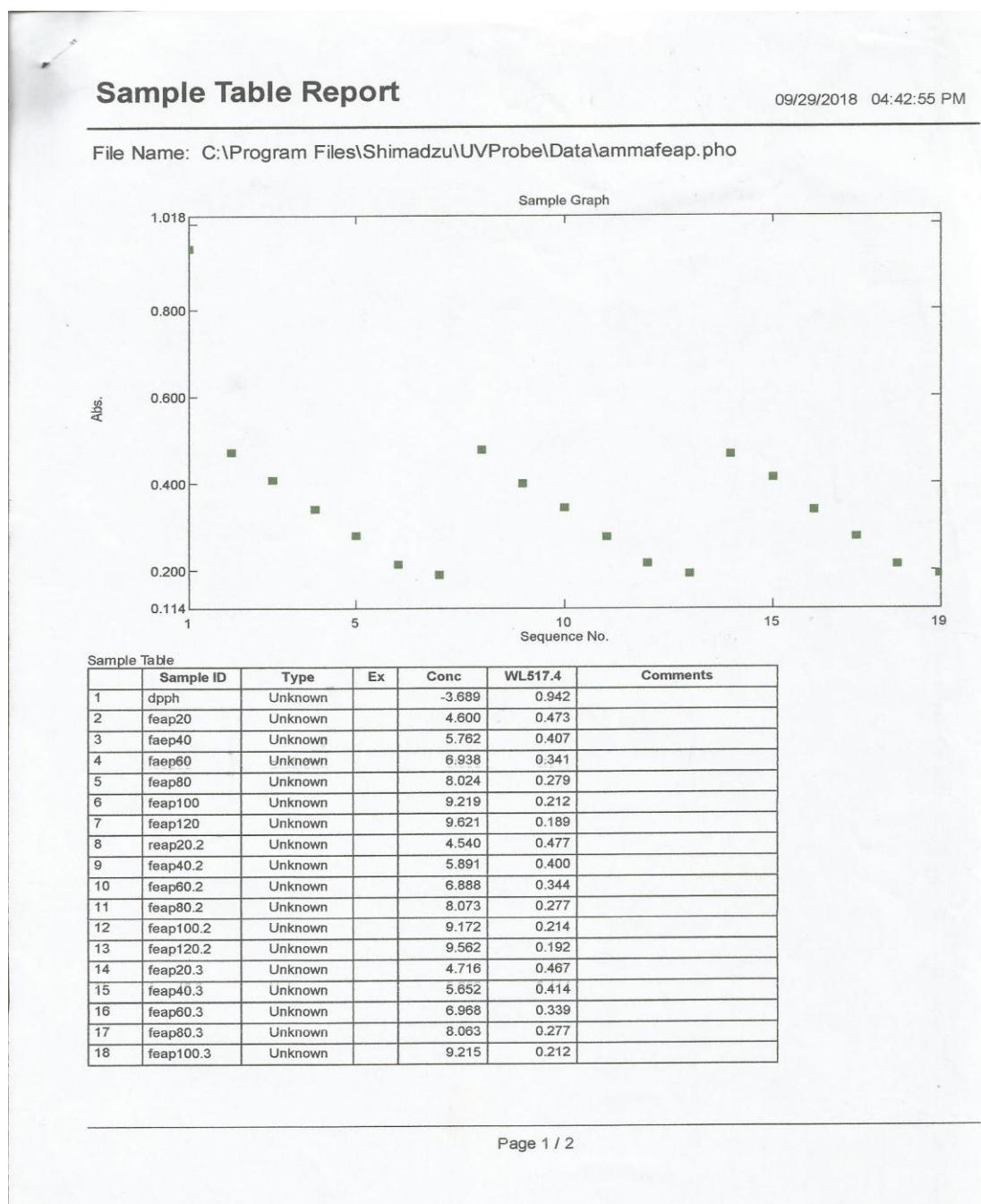
a. Fraksi *n*-Heksan

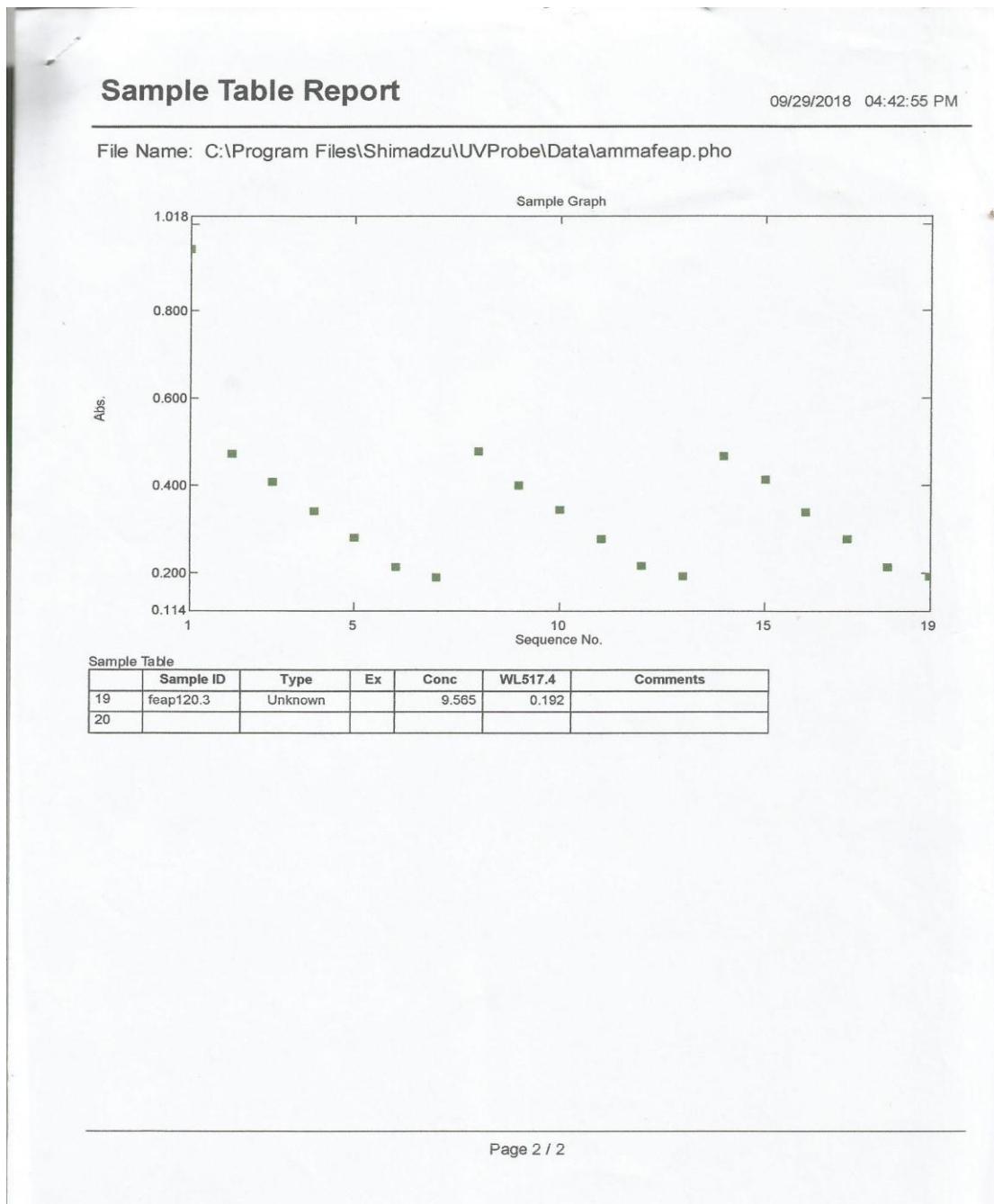


Lampiran 20. Lanjutan

Lampiran 20. Lanjutan

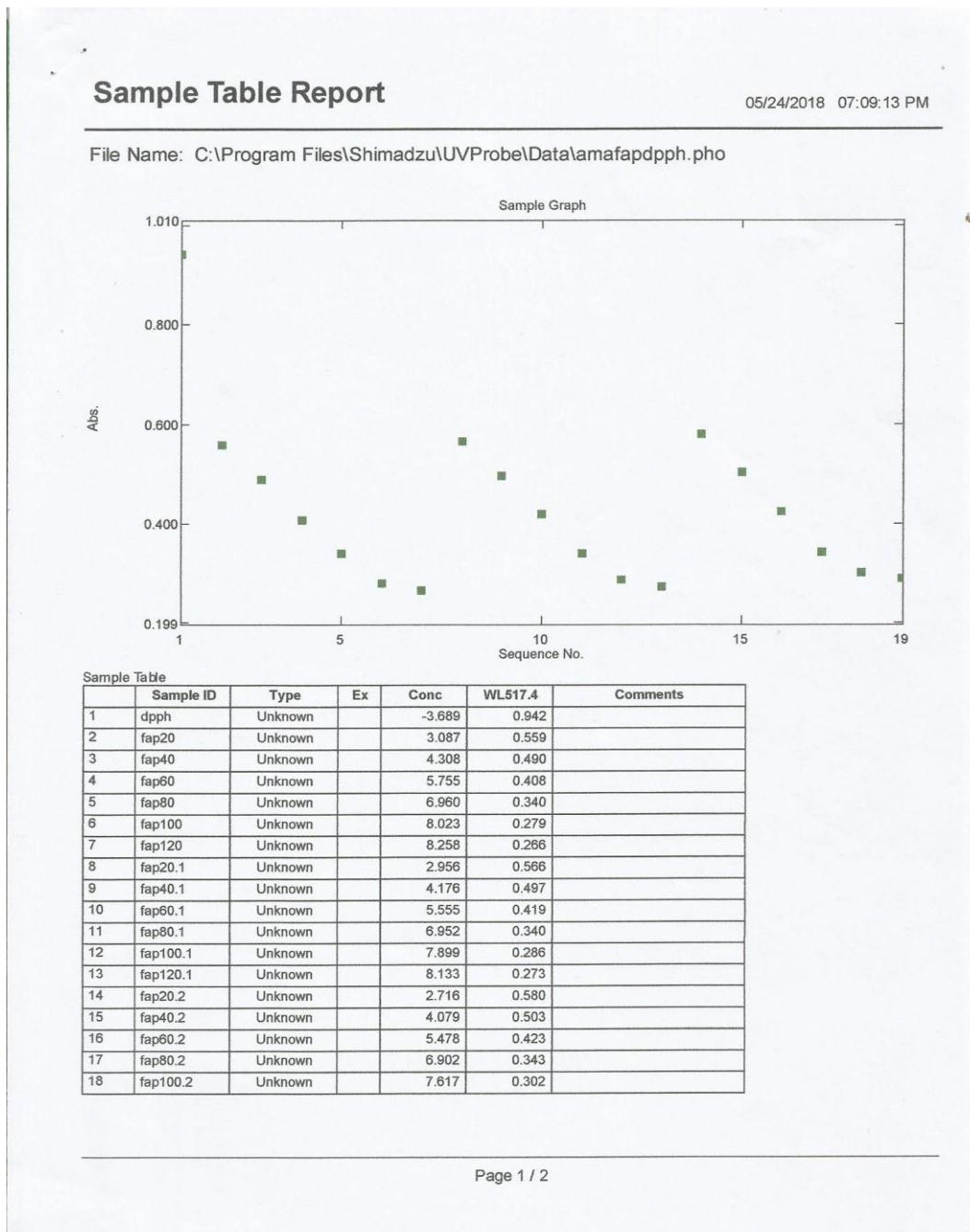
b. Fraksi Etil Asetat

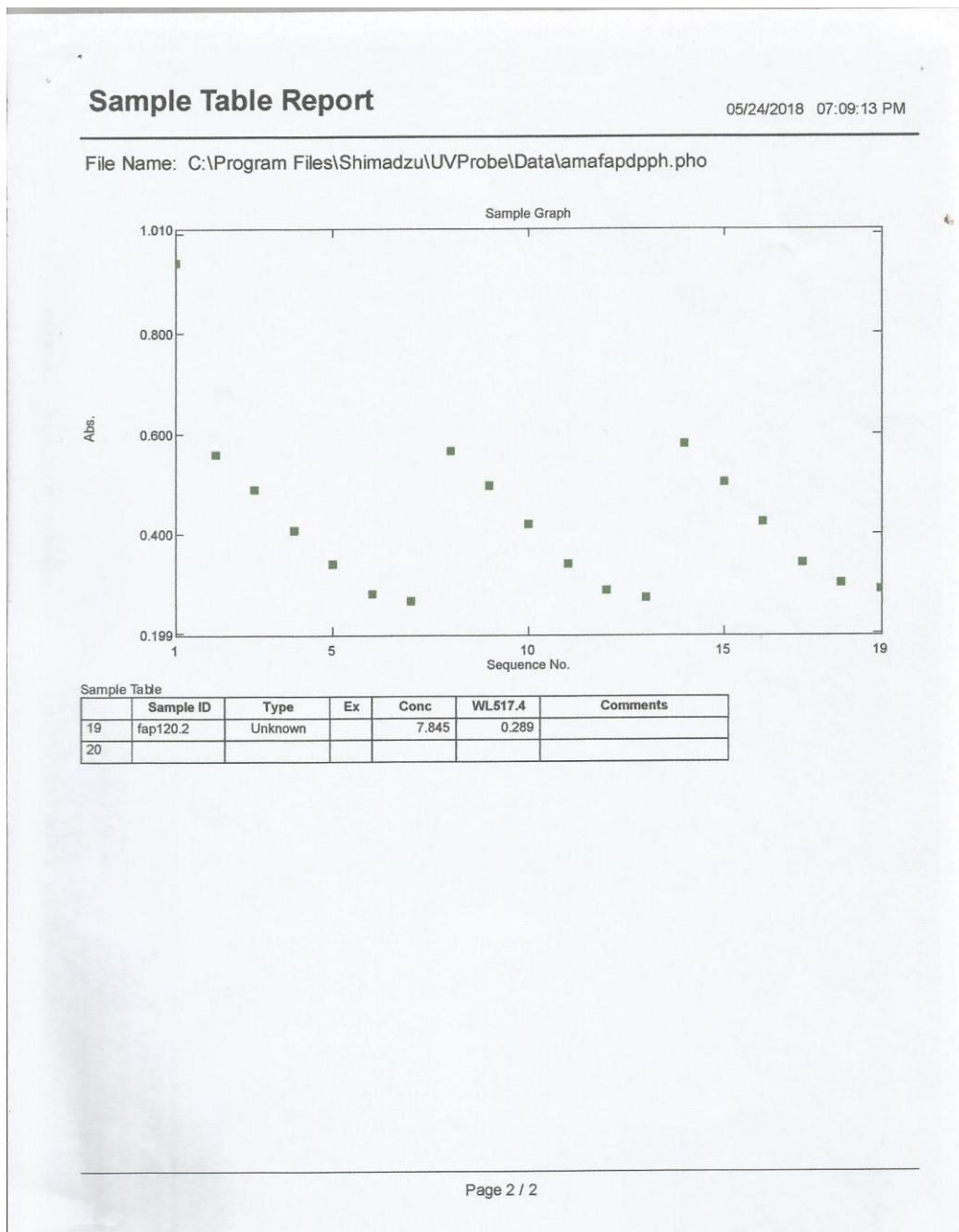


Lampiran 20. Lanjutan

Lampiran 20. Lanjutan

c. Fraksi Air



Lampiran 20. Lanjutan

Lampiran 21. Perhitungan Aktivitas Antioksidan

Perhitungan Aktivitas Antioksidan dihitung menggunakan rumus:

$$\% \text{ Aktivitas Antioksidan} = \frac{\text{Absorbansi kontrol} - \text{absorbansi sampel}}{\text{absorbansi kontrol}} \times 100 \%$$

Keterangan:

Regrasi linier = Seri konsentrasi ($\mu\text{g/mL}$) VS Aktivitas antioksidan (%)

IC_{50} = nilai x, ketika y sama dengan 50

Aktivitas antioksidan (Haeria, dkk., 2016)

| Nilai IC_{50} | Aktivitas antioksidan |
|-----------------|-----------------------|
| < 50 | Sangat kuat |
| 50 – 100 | Kuat |
| 101 – 150 | Sedang |
| >150 | Lemah |

Lampiran 21. Lanjutan

1. VITAMIN C

| Uji Aktivitas Antioksidan | | | |
|----------------------------------|--|-------------------|---------------------------|
| Sampel | Seri konsentrasi ($\mu\text{g/mL}$) | Absorbansi sampel | Aktivitas Antioksidan (%) |
| Vitamin C Replikasi 1 | 1 | 0.680 | 27.813 |
| | 2 | 0.611 | 35.138 |
| | 3 | 0.572 | 39.278 |
| | 4 | 0.466 | 50.531 |
| | 5 | 0.428 | 54.565 |
| | 6 | 0.392 | 58.386 |
| | 7 | 0.335 | 64.437 |
| | 8 | 0.312 | 66.879 |
| Absorbansi kontrol (DPPH 0,1 mM) | | 0.942 | |
| Vitamin C Replikasi 2 | 1 | 0.707 | 24.947 |
| | 2 | 0.614 | 34.819 |
| | 3 | 0.574 | 39.066 |
| | 4 | 0.468 | 50.318 |
| | 5 | 0.428 | 54.565 |
| | 6 | 0.386 | 59.023 |
| | 7 | 0.347 | 63.163 |
| | 8 | 0.316 | 66.454 |
| Absorbansi kontrol (DPPH 0,1 mM) | | 0.942 | |
| Vitamin C Replikasi 3 | 1 | 0.694 | 26.327 |
| | 2 | 0.620 | 34.182 |
| | 3 | 0.586 | 37.792 |
| | 4 | 0.472 | 49.893 |
| | 5 | 0.429 | 54.458 |
| | 6 | 0.382 | 59.448 |
| | 7 | 0.333 | 64.650 |
| | 8 | 0.314 | 66.667 |
| Absorbansi kontrol (DPPH 0,1 mM) | | 0.942 | |

Lampiran 21. Lanjutan

| | | | |
|----------------------------------|---|-------|--------|
| Rerata Vitamin C | 1 | 0.694 | 26.327 |
| | 2 | 0.615 | 34.713 |
| | 3 | 0.577 | 38.747 |
| | 4 | 0.469 | 50.212 |
| | 5 | 0.428 | 54.565 |
| | 6 | 0.387 | 58.917 |
| | 7 | 0.338 | 64.119 |
| | 8 | 0.314 | 66.667 |
| Absorbansi kontrol (DPPH 0,1 mM) | | 0.942 | |

Regresi linier rata-rata (konsentrasi vs % aktivitas antioksidan)

Replikasi 1

$$A = 23,8436$$

$$B = 5,7299$$

$$r = 0,9883$$

$$Y = 5,7299x + 23,8436$$

$$50 = 5,7299x + 23,8436$$

$$IC_{50} = x = \mathbf{4,5649 \mu g/mL} \text{ (Sangat kuat)}$$

Replikasi 2

$$A = 22,4522$$

$$B = 5,9094$$

$$r = 0,9834$$

$$Y = 5,9094x + 22,4522$$

$$50 = 5,9094x + 22,4522$$

$$IC_{50} = x = \mathbf{4,6617 \mu g/mL} \text{ (Sangat kuat)}$$

Replikasi 3

$$A = 22,1636$$

$$B = 6,0030$$

$$r = 0,9863$$

$$Y = 6,0030x + 22,1636$$

$$50 = 6,0030x + 22,1636$$

$$IC_{50} = x = \mathbf{4,6371 \mu g/mL} \text{ (Sangat kuat)}$$

Lampiran 21. Lanjutan

Rata-rata vitamin C

$$A = 22,8045$$

$$B = 5,8842$$

$$r = 0,9865$$

$$Y = 5,8842x + 22,8045$$

$$50 = 5,8842x + 22,8045$$

$$IC_{50} = x = \mathbf{4,622 \mu g/mL} \text{ (Sangat kuat)}$$

1. FRAKSI *n*-HEKSAN

| Uji Aktivitas Antioksidan | | | |
|--|---------------------------------------|-------------------|---------------------------|
| Sampel | Seri konsentrasi ($\mu\text{g/mL}$) | Absorbansi sampel | Aktivitas Antioksidan (%) |
| Fraksi <i>n</i> -Heksan Replikasi 1 | 20 | 0.663 | 29.618 |
| | 40 | 0.587 | 37.686 |
| | 60 | 0.563 | 40.233 |
| | 80 | 0.498 | 47.134 |
| | 100 | 0.394 | 58.174 |
| | 120 | 0.342 | 63.694 |
| Absorbansi kontrol (DPPH 0,1 mM) | | 0.942 | |
| Fraksi <i>n</i> -Heksan Replikasi 2 | 20 | 0.663 | 29.618 |
| | 40 | 0.587 | 37.686 |
| | 60 | 0.563 | 40.233 |
| | 80 | 0.495 | 47.452 |
| | 100 | 0.387 | 58.917 |
| | 120 | 0.340 | 63.906 |
| Absorbansi kontrol (DPPH 0,1 mM) | | 0.942 | |
| Fraksi <i>n</i> -Heksan Replikasi 3 | 20 | 0.656 | 30.361 |
| | 40 | 0.606 | 35.669 |
| | 60 | 0.582 | 38.216 |
| | 80 | 0.506 | 46.284 |
| | 100 | 0.418 | 55.626 |
| | 120 | 0.375 | 60.191 |
| Absorbansi kontrol (DPPH 0,1 mM) | | 0.942 | |

Lampiran 21. Lanjutan

| | | | |
|----------------------------------|-----|-------|--------|
| Rerata <i>n</i> -heksan | 20 | 0,661 | 29,830 |
| | 40 | 0,593 | 37,049 |
| | 60 | 0,569 | 39,597 |
| | 80 | 0,500 | 46,921 |
| | 100 | 0,436 | 53,715 |
| | 120 | 0,352 | 62,633 |
| Absorbansi kontrol (DPPH 0,1 mM) | | 0,942 | |

Regresi linier *n*-Heksan (konsentrasi vs % aktivitas antioksidan)

Replikasi 1

$$A = 22,2153$$

$$B = 0,3411$$

$$r = 0,9885$$

$$Y = 0,3411x + 22,2153$$

$$50 = 0,3411x + 22,2153$$

$$IC_{50} = x = \mathbf{81,456 \mu g/mL (kuat)}$$

Replikasi 2

$$A = 22,0668$$

$$B = 0,3462$$

$$r = 0,9879$$

$$Y = 0,3462x + 22,0668$$

$$50 = 0,3462x + 22,0668$$

$$IC_{50} = x = \mathbf{80,685 \mu g/mL (kuat)}$$

Replikasi 3

$$A = 22,6823$$

$$B = 0,3101$$

$$r = 0,9874$$

$$Y = 0,3101x + 22,6823$$

$$50 = 0,3101x + 22,6823$$

$$IC_{50} = x = \mathbf{88,093 \mu g/mL (kuat)}$$

Lampiran 21. Lanjutan

Rata-rata fraksi *n*-heksan

$$A = 22,8238$$

$$B = 0,3162$$

$$r = 0,9907$$

$$Y = 0,3162 x + 22,8238$$

$$50 = 0,3162 x + 22,8238$$

$$IC_{50} = x = \mathbf{85,946 \mu g/mL (kuat)}$$

2. FRAKSI ETIL ASETAT

| Uji Aktivitas Antioksidan | | | |
|----------------------------------|---------------------------------------|-------------------|---------------------------|
| Sampel | Seri konsentrasi ($\mu\text{g/mL}$) | Absorbansi sampel | Aktivitas Antioksidan (%) |
| FraksiEtil asetat Replikasi 1 | 20 | 0.473 | 49.788 |
| | 40 | 0.407 | 56.794 |
| | 60 | 0.341 | 63.800 |
| | 80 | 0.279 | 70.382 |
| | 100 | 0.212 | 77.495 |
| | 120 | 0.189 | 79.936 |
| Absorbansi kontrol (DPPH 0,1 mM) | | 0.942 | |
| FraksiEtil asetat Replikasi 2 | 20 | 0.477 | 49.363 |
| | 40 | 0.400 | 57.537 |
| | 60 | 0.344 | 63.482 |
| | 80 | 0.277 | 70.594 |
| | 100 | 0.214 | 77.282 |
| | 120 | 0.192 | 79.618 |
| Absorbansi kontrol (DPPH 0,1 mM) | | 0.942 | |
| FraksiEtil Asetat Replikasi 3 | 20 | 0.467 | 50.425 |
| | 40 | 0.414 | 56.051 |
| | 60 | 0.339 | 64.013 |
| | 80 | 0.277 | 70.594 |
| | 100 | 0.212 | 77.495 |
| | 120 | 0.192 | 79.618 |
| Absorbansi kontrol (DPPH 0,1 mM) | | 0.942 | |

Lampiran 21. Lanjutan

| | | | |
|----------------------------------|-------|-------|--------|
| Rerata Etil Asetat | 20 | 0,472 | 49,894 |
| | 40 | 0,407 | 56,794 |
| | 60 | 0,341 | 63,800 |
| | 80 | 0,278 | 70,488 |
| | 100 | 0,213 | 77,388 |
| | 120 | 0,191 | 79,724 |
| Absorbansi kontrol (DPPH 0,1 mM) | 0,942 | | |

Regresi linier Fraksi Etil Asetat (konsentrasi vs % aktivitas antioksidan)

Replikasi 1

$$A = 44,4233$$

$$B = 0,3135$$

$$r = 0,9933$$

$$Y = 0,3135x + 44,4233$$

$$50 = 0,3135x + 44,4233$$

$$IC_{50} = x = \mathbf{17,788 \mu g/mL (Sangat kuat)}$$

Replikasi 2

$$A = 44,5505$$

$$B = 0,3109$$

$$r = 0,9916$$

$$Y = 0,3109x + 44,5505$$

$$50 = 0,3109x + 44,5505$$

$$IC_{50} = x = \mathbf{17,528 \mu g/mL (Sangat kuat)}$$

Replikasi 3

$$A = 44,6782$$

$$B = 0,3098$$

$$r = 0,9916$$

$$Y = 0,3098x + 44,6782$$

$$50 = 0,3098x + 44,6782$$

$$IC_{50} = x = \mathbf{17,178 \mu g/mL (Sangat kuat)}$$

Lampiran 21. Lanjutan

Rata-rata fraksi etil asetat

$$A = 44,5860$$

$$B = 0,3109$$

$$r = 0,9928$$

$$Y = 0,3109x + 44,5860$$

$$50 = 0,3109x + 44,5860$$

$$IC_{50} = x = \mathbf{17,414 \mu g/mL (Sangat kuat)}$$

3. FRAKSI AIR

| Uji Aktivitas Antioksidan | | | |
|----------------------------------|---------------------------------------|-------------------|---------------------------|
| Sampel | Seri konsentrasi ($\mu\text{g/mL}$) | Absorbansi sampel | Aktivitas Antioksidan (%) |
| Fraksi air Replikasi 1 | 20 | 0.559 | 40.658 |
| | 40 | 0.490 | 47.983 |
| | 60 | 0.408 | 56.688 |
| | 80 | 0.340 | 63.906 |
| | 100 | 0.279 | 70.382 |
| | 120 | 0.266 | 71.762 |
| Absorbansi kontrol (DPPH 0,1 mM) | | 0.942 | |
| Fraksi air Replikasi 2 | 20 | 0.566 | 39.915 |
| | 40 | 0.497 | 47.240 |
| | 60 | 0.419 | 55.520 |
| | 80 | 0.340 | 63.906 |
| | 100 | 0.286 | 69.639 |
| | 120 | 0.273 | 71.019 |
| Absorbansi kontrol (DPPH 0,1 mM) | | 0.942 | |
| Fraksi air Replikasi 3 | 20 | 0.580 | 38.429 |
| | 40 | 0.503 | 46.603 |
| | 60 | 0.423 | 55.095 |
| | 80 | 0.343 | 63.588 |
| | 100 | 0.302 | 67.940 |
| | 120 | 0.289 | 69.320 |
| Absorbansi kontrol (DPPH 0,1 mM) | | 0.942 | |

Lampiran 21. Lanjutan

| | | | |
|----------------------------------|-------|-------|--------|
| Fraksi air rerata | 20 | 0,568 | 39,703 |
| | 40 | 0,496 | 47,346 |
| | 60 | 0,416 | 55,839 |
| | 80 | 0,341 | 63,800 |
| | 100 | 0,289 | 69,320 |
| | 120 | 0,276 | 70,701 |
| Absorbansi kontrol (DPPH 0,1 mM) | 0,942 | | |

Regresi linier fraksi air (konsentrasi vs % aktivitas antioksidan)

Replikasi 1

$$A = 35,5697$$

$$B = 0,3285$$

$$r = 0,9850$$

$$Y = 0,3285x + 35,5697$$

$$50 = 0,3285x + 35,5697$$

$$IC_{50} = x = \mathbf{43,928 \mu g/mL (kuat)}$$

Replikasi 2

$$A = 34,7629$$

$$B = 0,3301$$

$$r = 0,9835$$

$$Y = 0,3301x + 34,7629$$

$$50 = 0,3301x + 34,7629$$

$$IC_{50} = x = \mathbf{46,159 \mu g/mL (kuat)}$$

Replikasi 3

$$A = 34,1333$$

$$B = 0,3242$$

$$r = 0,9767$$

$$Y = 0,3242x + 34,1333$$

$$50 = 0,3242x + 34,1333$$

$$IC_{50} = x = \mathbf{48,941 \mu g/mL (kuat)}$$

Rata-rata fraksi air

$$A = 34,8975$$

$$B = 0,3270$$

$$r = 0,9821$$

$$Y = 0,3270x + 34,8975$$

$$50 = 0,3270x + 34,8975$$

$$IC_{50} = x = \mathbf{46,185 \mu g/mL (kuat)}$$

Lampiran 22. Hasil Analisis Statistik Fenolik total dan Flavonoid

a. Uji Normalitas Senyawa Fenolik

Tests of Normality

| Fraksi n-Heksan, Etil Asetat, dan Air | Kolmogorov-Smirnov* | | | Shapiro-Wilk | | |
|---------------------------------------|---------------------|------|------|--------------|----|------|
| | Statistic | df | Sig. | Statistic | df | Sig. |
| Kadar fenolik Total | n-Heksan | .226 | 3 | .983 | 3 | .752 |
| | Etil Asetat | .356 | 3 | .818 | 3 | .157 |
| | Air | .298 | 3 | .916 | 3 | .438 |
| Nilai IC50 | n-Heksan | .351 | 3 | .827 | 3 | .181 |
| | Etil Asetat | .206 | 3 | .993 | 3 | .838 |
| | Air | .196 | 3 | .996 | 3 | .879 |

a. Lilliefors Significance Correction

b. Uji Korelasi Pearson Senyawa Fenolik

Correlations

| | | Kadar fenolik fraksi daun petai | ic50 fraksi daun petai |
|---------------------------------|---------------------|---------------------------------|------------------------|
| Kadar fenolik fraksi daun petai | Pearson Correlation | 1 | -.923** .001 |
| | Sig. (2-tailed) | | |
| | N | 9 | |
| ic50 fraksi daun petai | Pearson Correlation | -.923 .001 | 1 |
| | Sig. (2-tailed) | | |
| | N | 8 | |

**. Correlation is significant at the 0.01 level (2-tailed).

c. Uji Normalitas Senyawa Flavonoid

Tests of Normality

| Fraksi n-Heksan, Etil Asetat, dan Air | Kolmogorov-Smirnov* | | | Shapiro-Wilk | | |
|---------------------------------------|---------------------|------|------|--------------|----|------|
| | Statistic | df | Sig. | Statistic | df | Sig. |
| Kadar Flavonoid | n-Heksan | .385 | 3 | .750 | 3 | .000 |
| | Etil Asetat | .319 | 3 | .885 | 3 | .338 |
| | Air | .259 | 3 | .959 | 3 | .613 |
| Nilai IC50 | n-Heksan | .351 | 3 | .827 | 3 | .181 |
| | Etil Asetat | .206 | 3 | .993 | 3 | .838 |
| | Air | .196 | 3 | .996 | 3 | .879 |

a. Lilliefors Significance Correction

Lampiran 22. Lanjutan

d. Uji Korelasi *Product Moment* Senyawa Flavonoid

Correlations

| | | | Fraksi n-Heksan, Etil Asetat, dan Air | Kadar Flavonoid | Nilai IC50 |
|----------------|---------------------------------------|-------------------------|---------------------------------------|-----------------|------------|
| Spearman's rho | Fraksi n-Heksan, Etil Asetat, dan Air | Correlation Coefficient | 1.000 | .476 | -.474 |
| | | Sig. (2-tailed) | | .195 | .197 |
| | N | | 9 | 9 | 9 |
| | Kadar Flavonoid | Correlation Coefficient | .476 | 1.000 | -.912* |
| | | Sig. (2-tailed) | .195 | | .001 |
| | N | | 9 | 9 | 9 |
| | Nilai IC50 | Correlation Coefficient | -.474 | -.912* | 1.000 |
| | | Sig. (2-tailed) | .197 | .001 | |
| | N | | 9 | 9 | 9 |

**. Correlation is significant at the 0.01 level (2-tailed).



Lampiran 23. Proses Pembuatan Fraksi *n*-Heksan, Etil Asetat, dan Air Ekstrak Etanol Daun Petai



Proses pembuatan serbuk daun petai



Hasil pengukuran kadar air



Proses perkolasi ekstrak



Proses Fraksinasi

Lampiran 23. Lanjutan



Proses pengentalan ekstrak dengan
Rotary evaporator



Hasil fraksi yang didapat

Lampiran 24. Penetapan Kadar Fenolik Total dan Flavonoid Total Fraksi Daun Petai



Sampel fraksi daun petai setelah ditambah reagen Folin-Ciocalteu dan Na₂CO₃



Sampel fraksi daun petai setelah ditambah reagen AlCl₃ dan kalium asetat



Lampiran 25. Deret Seri Konsentrasi Vitamin C dan Sampel Fraksi Daun Petai



Deret seri konsentrasi vitamin C setelah ditambah larutan DPPH



Deret Konentrasi sampel setelah ditambah larutan DPPH



