

BAB V

KESIMPULAN DAN SARAN

A. Kesimpulan

Berdasarkan penelitian diperoleh kesimpulan bahwa:

Pertama, dimenhidrinat mampu membentuk kristal sferis dengan menggunakan polimer PVP K-30 1% sebanyak 15 mL.

Kedua, kristal sferis dimenhidrinat dapat dikarakterisasi bentuk morfologinya menggunakan SEM perbesaran 150x dan sifat kristalinitas pada XRD sudut 2θ 45° .

Ketiga, kelarutan dimenhidrinat setelah dibuat kristal sferis menjadi meningkat dibanding dimenhidrinat murni.

B. Saran

Pertama, perlu dilakukan pengujian lebih lanjut dengan menggunakan sifat alir, DSC dan TGA pada kristal sferis dimenhidrinat.

Kedua, perlu dilakukan penelitian lebih lanjut dengan teknik *Spherical crystalization* yang lain.

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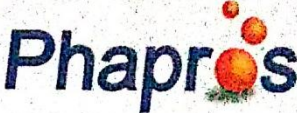
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Lampiran 1. COA dimenhidrinat





023/S.Pr/PPPP-LPP/V/19
Semarang, 11 Mei 2019

Kepada Yth:
Fakultas Farmasi
Universitas Setia Budi
d/a Jl. Let. Jend. Sutoyo – Solo 57127
Telp. 0271 - 852518
Up. Ibu Prof. Dr. R.A Oetari, SU., MM., M.Sc., Apt

Perihal : Permohonan Bahan Baku

Dengan hormat,
Memenuhi permintaan Ibu sesuai surat no. 4525/A10-4/05.04.2019 per tgl. 5 April 2019 perihal tersebut di atas, bersama ini kami kirimkan :

No.	Nama bahan baku	Um	Jumlah	Certificate Of Analysis
1	Dimenhydrinate	Gr	100	√
2				

Untuk keperluan penelitian Mahasiswa :

No.	Nama	NIM
1	Rizqi Loni Asifa	21154423A

Mohon diterima dengan baik dan selanjutnya apabila penelitian telah selesai, agar mengirimkan 1 eksemplar laporan untuk keperluan perpustakaan kami.

Demikian, semoga bermanfaat dan terima kasih.

Hormat Kami



Drs. Giri Hardiyatma, Apt. MM
Manager PPIC

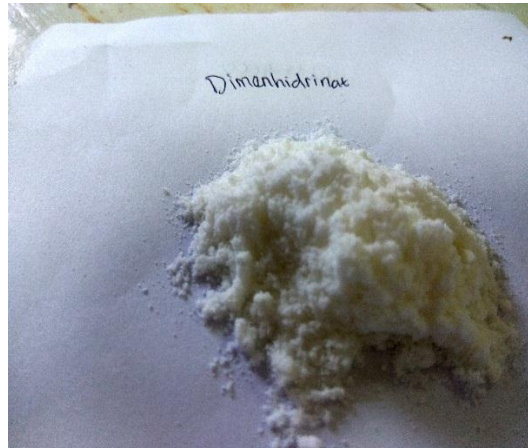
Diterima oleh :
Tanggal :
Tanda tangan :

OFFICE :
PT. Phapros Tbk
Gedung RNI
Jl. Dharma Raya Kaya Dili
Kuningan, Jawa Barat 42950, INDONESIA
Phone: (62-21) 527 6295, 252 3820
Fax: (62-21) 522 9301
E-mail: hardiyatma@phapros.co.id
Website: www.phapros.co.id

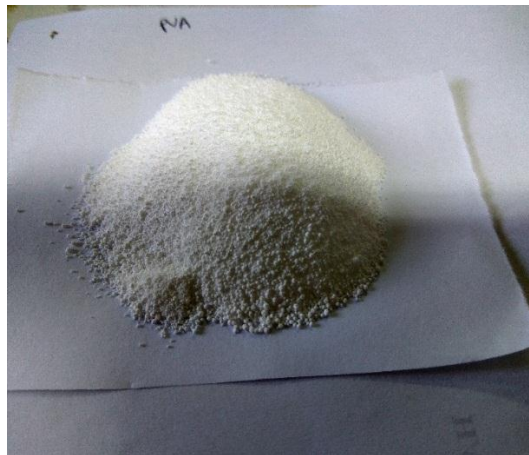
FACTORY :
PT. Phapros Tbk
Jl. Sincangan 131
Semarang 50148, INDONESIA
Phone: (62-24) 76630021 (hunting)
Fax: (62-24) 766 5133 (62-24) 760 6872
P.O. Box: 1233
E-mail: factory@phapros.co.id
Website: www.phapros.co.id

Lampiran 2. Bahan penelitian

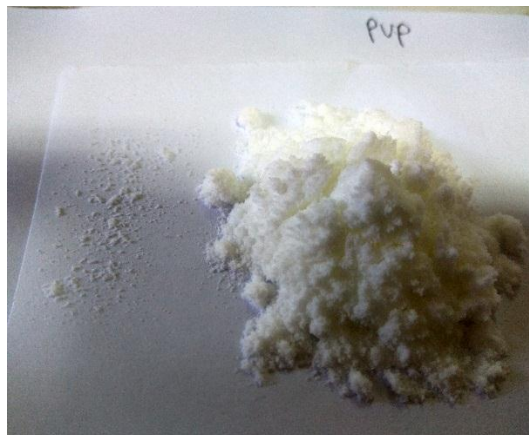
a. Gambar serbuk dimenhidrinat



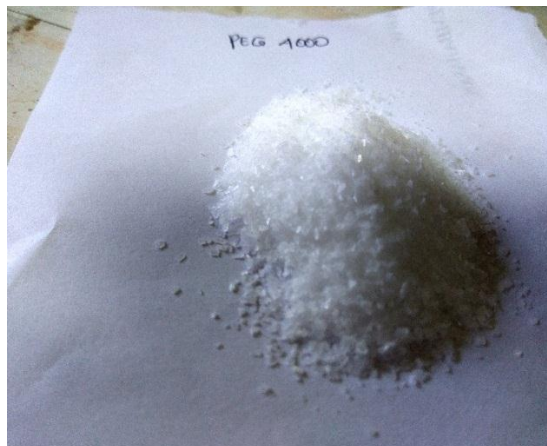
b. Gambar serbuk PVA



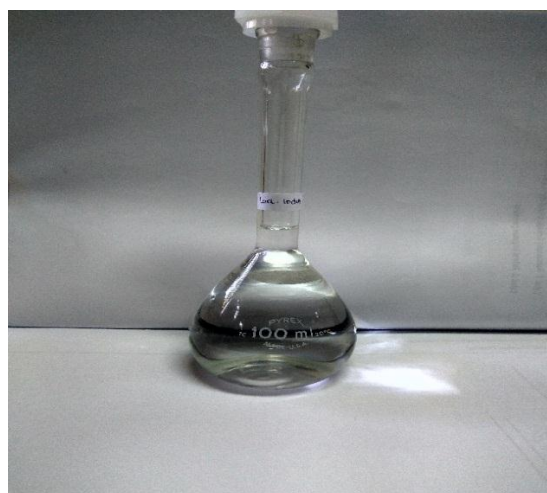
c. Gambar serbuk PVP K-30



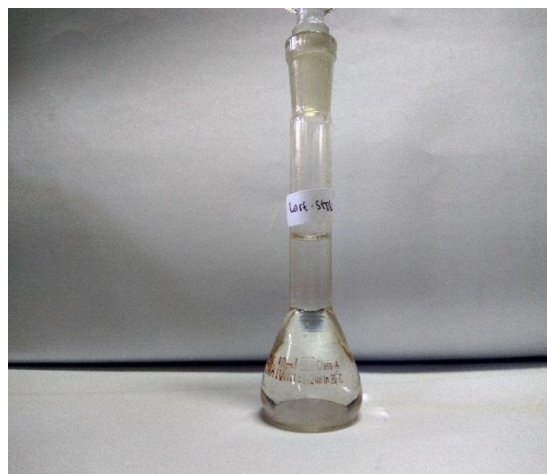
d. Gambar serbuk PEG 4000



e. Larutan induk



f. Larutan stock



g. Larutan seri kurva kalibrasi



Lampiran 3. Alat penelitian

a. Gambar magnetic stirrer



b. Gambar neraca analitik



c. Gambar SEM

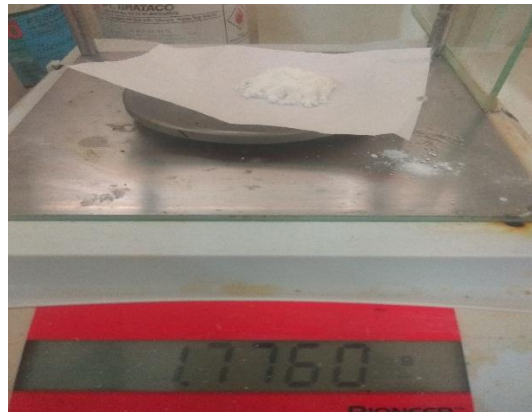


d. Gambar spektrofotometer Uv-vis



Lampiran 4. Penimbangan bahan

a. Dimenhidrinat murni untuk membuat formula



b. Dimenhidrinat murni untuk membuat larutan induk



c. Rendemen kristal sferis

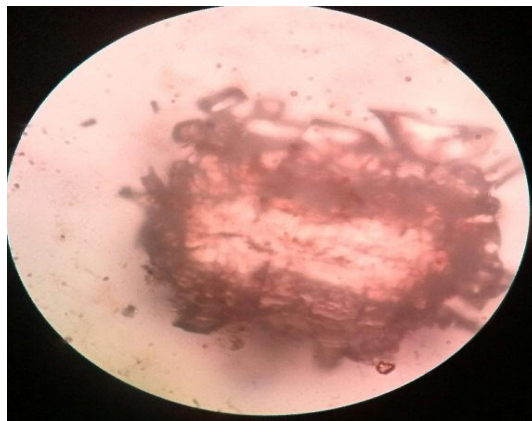


Lampiran 5. Pembuatan kristal sferis

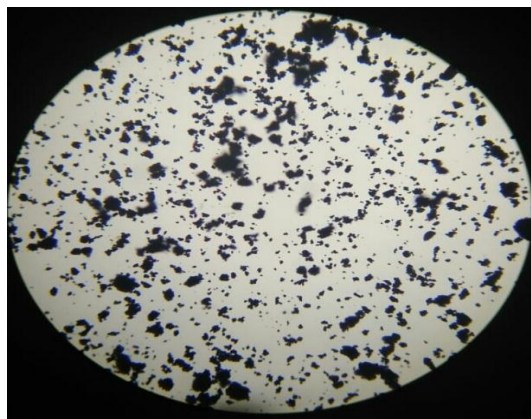
- a. Pembuatan larutan polimer
Ditimbang polimer 1,1 gram kemudian ditambahkan aquadestillata sebanyak 100 mL masukkan erlemeyer, aduk dengan magnetik stirer
- b. Pembuatan larutan obat
Larutkan zat aktif obat dimenhidrinat pada pelarut baik yaitu etanol sampai terbentuk larutan jenuh didapatkan hasil penimbangan zat aktif sebanyak 1,5101 gram. Larutan jenuh tadi kemudian disaring antara filtrat dan rendemen. Filtrat berupa larutan jernih itu yang digunakan untuk langkah selanjutnya
- c. Filtrat berupa larutan jernih tadi kemudian ditambahkan larutan polimer, keduanya diaduk pada kecepatan 400 rpm selama 15 menit. Masukkan bridging etil asetat 0,5 mL dalam kedua larutan dan naikkan kecepatan menjadi 600 rpm selama 1,5 jam. Cek mikroskop, jika sudah terbentuk kristal sferis maka larutan langsung disaring dan dioven.

Lampiran 6. Hasil pengamatan pada mikroskop

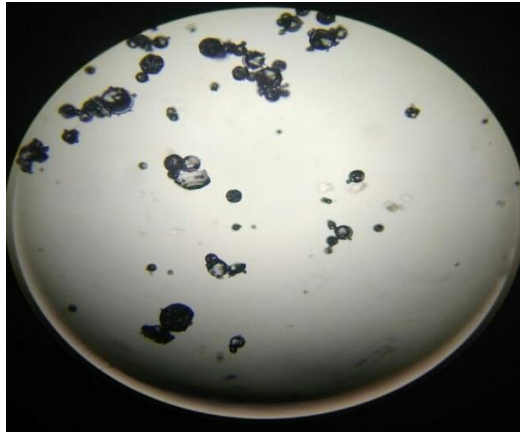
- a. Gambar hasil mikroskop dimenhidrinat murni



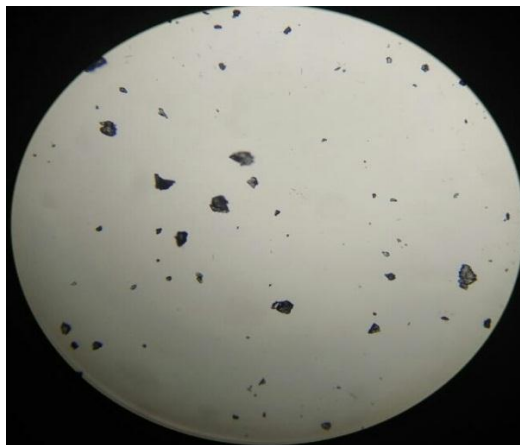
- b. Gambar hasil mikroskop polimer PVA



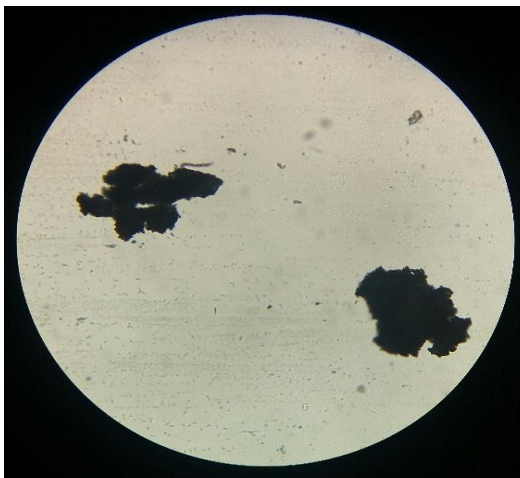
c. Gambar hasil mikroskop polimer PVP K-30



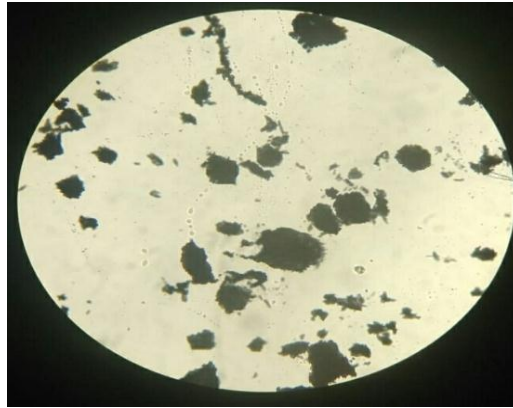
d. Gambar hasil mikroskop polimer PEG 4000



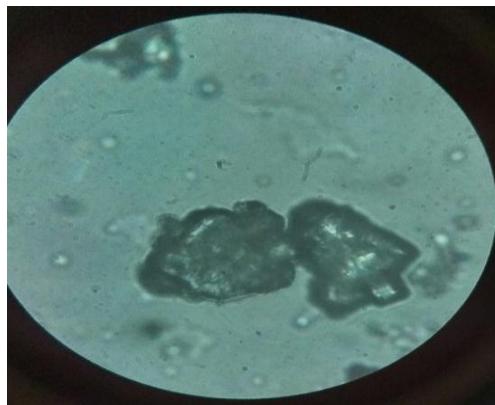
e. Gambar hasil mikroskop formula 1 (PVA)



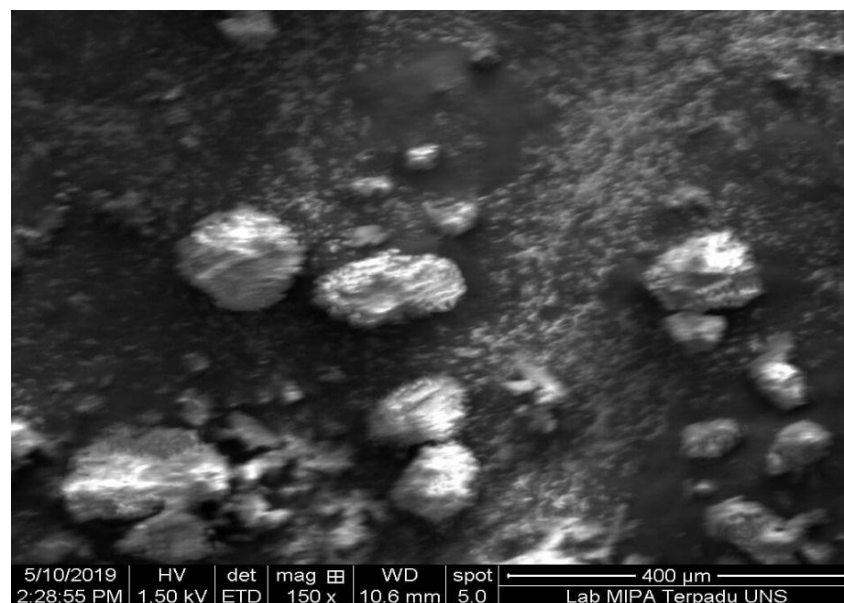
f. Gambar hasil mikroskop formula 2 (PVP K-30)



g. Gambar hasil mikroskop formula 3 (PEG 4000)

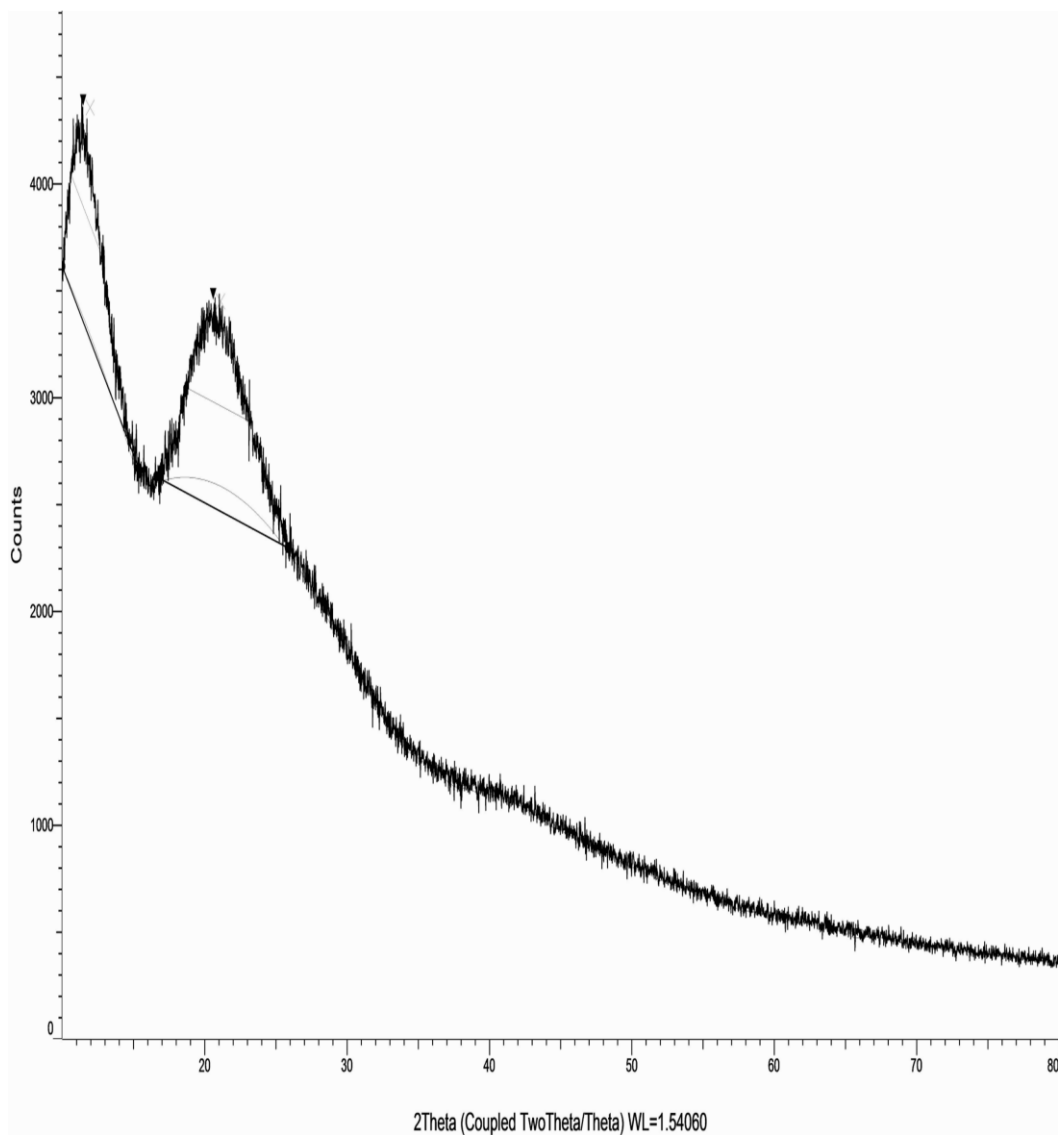


Lampiran 7. Gambar hasil uji SEM



Lampiran 8. Hasil uji XRD PVP K-30

a. coupled two teth

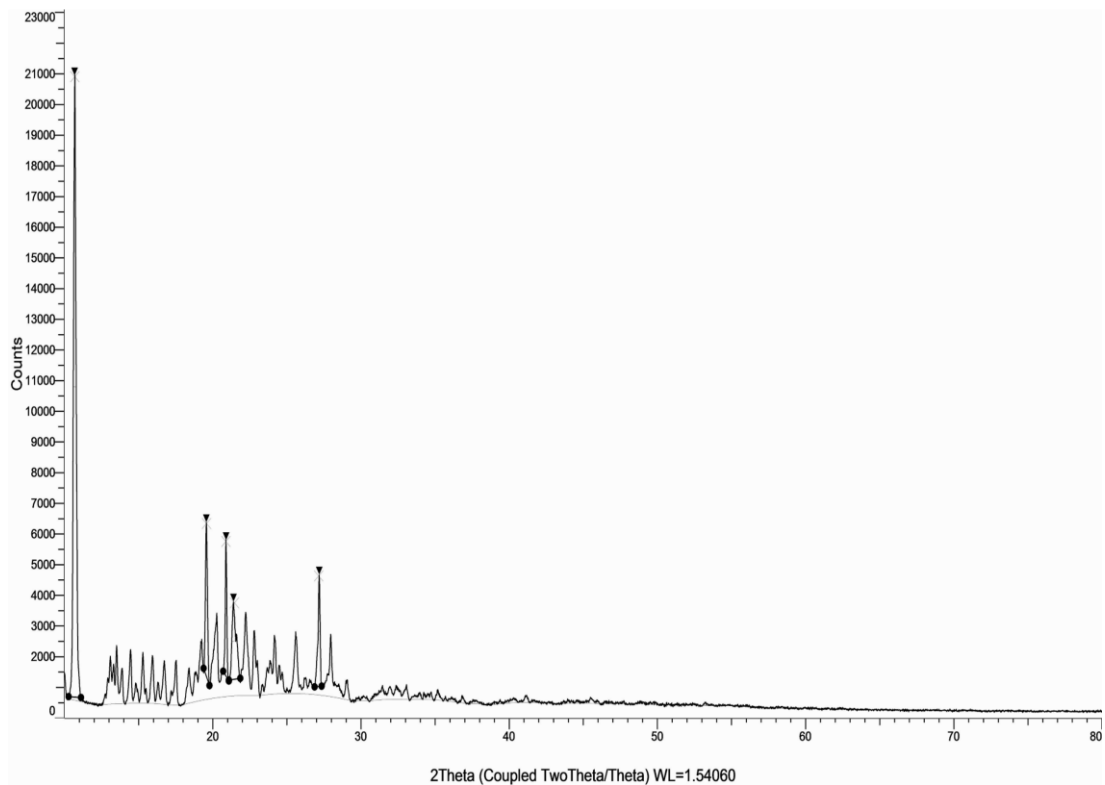


b. Peak list

d Value	Net Intensity	Gross Intensity	Rel. Intensity	h,k,l	Match	Angle
7.72713 Å	968	4350	100.0 %	n.a.	No	11.442 °
7.60036 Å	881	4230	91.0 %	n.a.	No	11.634 °
6.49538 Å	368	3349	38.1 %	n.a.	No	13.622 °
6.20365 Å	193	3042	19.9 %	n.a.	No	14.266 °
5.82789 Å	153	2822	15.8 %	n.a.	No	15.191 °
5.14252 Å	223	2837	23.0 %	n.a.	No	17.230 °
4.83288 Å	381	3007	39.4 %	n.a.	No	18.343 °
4.14907 Å	799	3374	82.6 %	n.a.	No	21.399 °
3.51276 Å	232	2558	24.0 %	n.a.	No	25.334 °

Lampiran 9. Hasil uji XRD dimenhidrinat murni

a. Couple two tetha



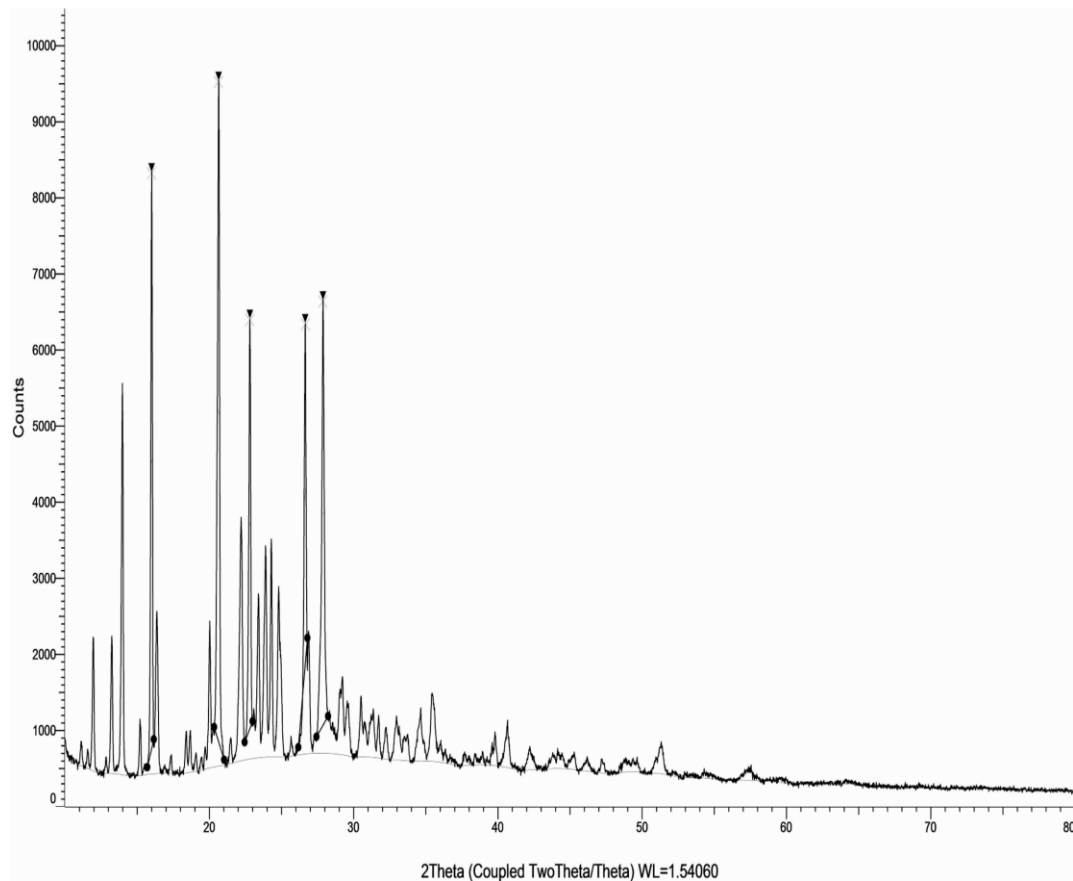
b. Peak list

Angle	d Value	Net Intensity	Gross Intensity	Rel. Intensity	h,k,l	Match
10.701 °	8.26045 Å	20364	20942	100.0 %	n.a.	No
12.749 °	6.93818 Å	332	772	1.6 %	n.a.	No
13.093 °	6.75637 Å	1542	1995	7.6 %	n.a.	No
13.518 °	6.54511 Å	1880	2344	9.2 %	n.a.	No
13.879 °	6.37559 Å	1145	1614	5.6 %	n.a.	No
14.458 °	6.12146 Å	1747	2226	8.6 %	n.a.	No
14.813 °	5.97541 Å	651	1134	3.2 %	n.a.	No
15.287 °	5.79144 Å	1642	2125	8.1 %	n.a.	No
15.938 °	5.55622 Å	1556	2028	7.6 %	n.a.	No
16.321 °	5.42671 Å	663	1123	3.3 %	n.a.	No
16.729 °	5.29539 Å	1417	1860	7.0 %	n.a.	No
17.206 °	5.14941 Å	452	878	2.2 %	n.a.	No
17.521 °	5.05761 Å	1430	1850	7.0 %	n.a.	No
18.396 °	4.81894 Å	1139	1621	5.6 %	n.a.	No
18.870 °	4.69899 Å	936	1473	4.6 %	n.a.	No
19.225 °	4.61292 Å	1906	2479	9.4 %	n.a.	No
19.573 °	4.53175 Å	5723	6329	28.1 %	n.a.	No
20.226 °	4.38685 Å	2419	3077	11.9 %	n.a.	No
20.892 °	4.24845 Å	5047	5744	24.8 %	n.a.	No
21.396 °	4.14955 Å	3055	3773	15.0 %	n.a.	No
21.474 °	4.13469 Å	2579	3300	12.7 %	n.a.	No
22.232 °	3.99545 Å	2702	3441	13.3 %	n.a.	No
22.796 °	3.89783 Å	2055	2795	10.1 %	n.a.	No
22.998 °	3.86405 Å	1126	1864	5.5 %	n.a.	No
23.351 °	3.80638 Å	304	1050	1.5 %	n.a.	No
23.681 °	3.75417 Å	864	1626	4.2 %	n.a.	No
23.889 °	3.72184 Å	1061	1833	5.2 %	n.a.	No
24.176 °	3.67833 Å	1853	2635	9.1 %	n.a.	No
24.505 °	3.62975 Å	919	1710	4.5 %	n.a.	No
24.695 °	3.60221 Å	674	1469	3.3 %	n.a.	No
25.611 °	3.47544 Å	1928	2727	9.5 %	n.a.	No
26.269 °	3.38984 Å	525	1311	2.6 %	n.a.	No
26.581 °	3.35070 Å	411	1186	2.0 %	n.a.	No
27.185 °	3.27760 Å	3888	4636	19.1 %	n.a.	No
27.962 °	3.18831 Å	2018	2714	9.9 %	n.a.	No
28.503 °	3.12898 Å	453	1103	2.2 %	n.a.	No
29.040 °	3.07237 Å	625	1220	3.1 %	n.a.	No

29.787 °	2.99699 Å	93.7	656	0.5 %	n.a.	No
30.184 °	2.95852 Å	158	721	0.8 %	n.a.	No
30.952 °	2.88678 Å	200	778	1.0 %	n.a.	No
31.448 °	2.84235 Å	449	1045	2.2 %	n.a.	No
31.962 °	2.79785 Å	418	1025	2.1 %	n.a.	No
32.409 °	2.76029 Å	391	1002	1.9 %	n.a.	No
33.068 °	2.70675 Å	452	1058	2.2 %	n.a.	No
33.629 °	2.66286 Å	144	749	0.7 %	n.a.	No
33.933 °	2.63968 Å	198	804	1.0 %	n.a.	No
34.314 °	2.61123 Å	137	742	0.7 %	n.a.	No
34.650 °	2.58671 Å	113	711	0.6 %	n.a.	No
35.173 °	2.54945 Å	259	843	1.3 %	n.a.	No
35.701 °	2.51291 Å	140	701	0.7 %	n.a.	No
36.111 °	2.48531 Å	145	681	0.7 %	n.a.	No
36.306 °	2.47241 Å	102	625	0.5 %	n.a.	No
36.856 °	2.43681 Å	226	718	1.1 %	n.a.	No
37.682 °	2.38525 Å	95.6	560	0.5 %	n.a.	No
39.048 °	2.30487 Å	73.3	517	0.4 %	n.a.	No
39.384 °	2.28600 Å	103	566	0.5 %	n.a.	No
40.328 °	2.23462 Å	140	638	0.7 %	n.a.	No
41.173 °	2.19070 Å	221	728	1.1 %	n.a.	No
41.655 °	2.16647 Å	85.8	589	0.4 %	n.a.	No
44.001 °	2.05625 Å	80.7	555	0.4 %	n.a.	No
44.611 °	2.02952 Å	66.5	550	0.3 %	n.a.	No
45.544 °	1.99009 Å	154	629	0.8 %	n.a.	No
45.928 °	1.97433 Å	105	569	0.5 %	n.a.	No
46.926 °	1.93466 Å	66.6	531	0.3 %	n.a.	No
49.823 °	1.82876 Å	83.4	522	0.4 %	n.a.	No
51.357 °	1.77767 Å	64.3	489	0.3 %	n.a.	No
53.244 °	1.71901 Å	88.8	494	0.4 %	n.a.	No

Lampiran 10. Hasil uji XRD kristal sferis dimenhidrinat

a. Coupled two tetha



b. Peak list

Angle	d Value	Net Intensity	Gross Intensity	Rel. Intensity	h,k,l	Match
11.119 °	7.95093 Å	242	776	2.7 %	n.a.	No
11.576 °	7.63831 Å	242	742	2.7 %	n.a.	No
11.960 °	7.39412 Å	1751	2218	19.5 %	n.a.	No
12.846 °	6.88602 Å	215	651	2.4 %	n.a.	No
13.245 °	6.67945 Å	1790	2222	19.9 %	n.a.	No
13.981 °	6.32912 Å	5107	5524	56.9 %	n.a.	No
15.212 °	5.81979 Å	699	1108	7.8 %	n.a.	No
16.010 °	5.53150 Å	7828	8256	87.2 %	n.a.	No
16.364 °	5.41250 Å	2129	2560	23.7 %	n.a.	No
16.909 °	5.23914 Å	112	546	1.3 %	n.a.	No
17.353 °	5.10614 Å	233	665	2.6 %	n.a.	No
18.399 °	4.81829 Å	541	983	6.0 %	n.a.	No

18.682 °	4.74587 Å	542	993	6.0 %	n.a.	No
19.079 °	4.64790 Å	239	700	2.7 %	n.a.	No
19.465 °	4.55659 Å	162	640	1.8 %	n.a.	No
19.715 °	4.49951 Å	291	782	3.2 %	n.a.	No
20.033 °	4.42878 Å	1883	2390	21.0 %	n.a.	No
20.655 °	4.29685 Å	8977	9509	100.0 %	n.a.	No
21.487 °	4.13214 Å	314	878	3.5 %	n.a.	No
22.213 °	3.99886 Å	3185	3787	35.5 %	n.a.	No
22.812 °	3.89508 Å	5746	6371	64.0 %	n.a.	No
23.408 °	3.79728 Å	2148	2789	23.9 %	n.a.	No
23.903 °	3.71968 Å	2760	3408	30.7 %	n.a.	No
24.301 °	3.65971 Å	2848	3500	31.7 %	n.a.	No
24.809 °	3.58596 Å	2225	2876	24.8 %	n.a.	No
25.669 °	3.46767 Å	248	908	2.8 %	n.a.	No
26.651 °	3.34214 Å	5622	6313	62.6 %	n.a.	No
26.879 °	3.31422 Å	1608	2303	17.9 %	n.a.	No
27.886 °	3.19678 Å	5953	6654	66.3 %	n.a.	No
28.549 °	3.12408 Å	408	1103	4.5 %	n.a.	No
29.223 °	3.05358 Å	1012	1691	11.3 %	n.a.	No
29.563 °	3.01922 Å	717	1385	8.0 %	n.a.	No
30.517 °	2.92692 Å	794	1447	8.8 %	n.a.	No
30.753 °	2.90499 Å	458	1111	5.1 %	n.a.	No
31.289 °	2.85651 Å	490	1137	5.5 %	n.a.	No
31.739 °	2.81701 Å	553	1191	6.2 %	n.a.	No
32.237 °	2.77456 Å	413	1036	4.6 %	n.a.	No
32.978 °	2.71395 Å	573	1184	6.4 %	n.a.	No
33.159 °	2.69955 Å	444	1054	4.9 %	n.a.	No
33.536 °	2.67006 Å	304	910	3.4 %	n.a.	No
33.603 °	2.66484 Å	258	862	2.9 %	n.a.	No
34.654 °	2.58638 Å	682	1281	7.6 %	n.a.	No
35.488 °	2.52754 Å	863	1456	9.6 %	n.a.	No
35.996 °	2.49301 Å	239	822	2.7 %	n.a.	No
36.357 °	2.46904 Å	178	750	2.0 %	n.a.	No
37.691 °	2.38467 Å	166	703	1.8 %	n.a.	No
37.991 °	2.36656 Å	84.4	627	0.9 %	n.a.	No
38.463 °	2.33858 Å	107	654	1.2 %	n.a.	No
38.924 °	2.31196 Å	158	705	1.8 %	n.a.	No
39.606 °	2.27370 Å	270	810	3.0 %	n.a.	No
39.812 °	2.26242 Å	404	941	4.5 %	n.a.	No
40.662 °	2.21703 Å	586	1097	6.5 %	n.a.	No
42.226 °	2.13849 Å	294	776	3.3 %	n.a.	No
43.815 °	2.06455 Å	195	694	2.2 %	n.a.	No
44.209 °	2.04705 Å	175	674	1.9 %	n.a.	No

44.437 °	2.03706 Å	205	703	2.3 %	n.a.	No
45.230 °	2.00318 Å	182	669	2.0 %	n.a.	No
46.194 °	1.96359 Å	185	651	2.1 %	n.a.	No
47.213 °	1.92355 Å	174	615	1.9 %	n.a.	No
48.861 °	1.86246 Å	189	641	2.1 %	n.a.	No
49.638 °	1.83512 Å	172	624	1.9 %	n.a.	No
51.001 °	1.78924 Å	187	624	2.1 %	n.a.	No
51.322 °	1.77879 Å	414	845	4.6 %	n.a.	No
57.362 °	1.60502 Å	163	509	1.8 %	n.a.	No
57.466 °	1.60236 Å	146	491	1.6 %	n.a.	No

Lampiran 11. Hasil perhitungan rendemen kristal sferis

Perhitungan rendemen

$$\begin{aligned}
 \% \text{ Rendemen} &= \frac{\text{berat kristal sferis dimenhidrinat}}{\text{berat dimenhidrinat murni}} \times 100\% \\
 &= \frac{1.4479}{1.500} \times 100\% \\
 &= 96,52 \%
 \end{aligned}$$

Lampiran 12. Hasil uji kelarutan

a. Dimenhidrinat murni

Ditimbang 50,1 mg dimenhidrinat murni dimasukkan beker glass 50 mL yang sudah berisi dapar phosphat pH 6,8 diaduk dengan magnetik stirer selama 1 jam pada kecepatan 100 rpm. Filtrat diambil dan diencerkan 1 mL kedalam labu ukur 10 mL.

	Absorbansi	Kadar (ppm)	Kadar (mg)
Dimenhidrinat murni	0,356	9,9725	4,9862

Rumus =

$$Y = a + bx$$

Kadar (ppm)

$$y + a = bx$$

Kadar (mg)

$$\frac{\text{kadar (ppm)} \times \text{faktor pengenceran} \times \text{volume pembuatan}}{1000 \text{ mL}}$$

Perhitungan =

- Serapan 0,356

Kadar (ppm)

$$0,356 + 0,3351 = 0,0693x$$

$$\frac{0,691}{0,0693} = x$$

$$9,9725 = x$$

Kadar (mg)

$$\frac{\text{kadar (ppm)} \times \text{faktor pengenceran} \times \text{volume pembuatan}}{1000 \text{ mL}}$$

$$= \frac{9,9725 \times 10 \times 50}{1000 \text{ mL}} \times 50 \text{ mL} = 4,9862 \text{ mg}$$

b. Kristal sferis dimenhidrinat

Ditimbang 50,2 mg dimenhidrinat murni dimasukkan beker glass 50 mL yang sudah berisi dapar fosfat pH 6,8 diaduk dengan magnetik stirer selama 1 jam pada kecepatan 100 rpm. Filtrat diambil dan diencerkan 1 mL kedalam labu ukur 10 mL

	Absorbansi	Kadar (ppm)	Kadar (mg)
Dimenhidrinat murni	0,771	15,9610	7,9805

Perhitungan =

- Serapan 0,771

Kadar (ppm)

$$0,771 + 0,3351 = 0,0693x$$

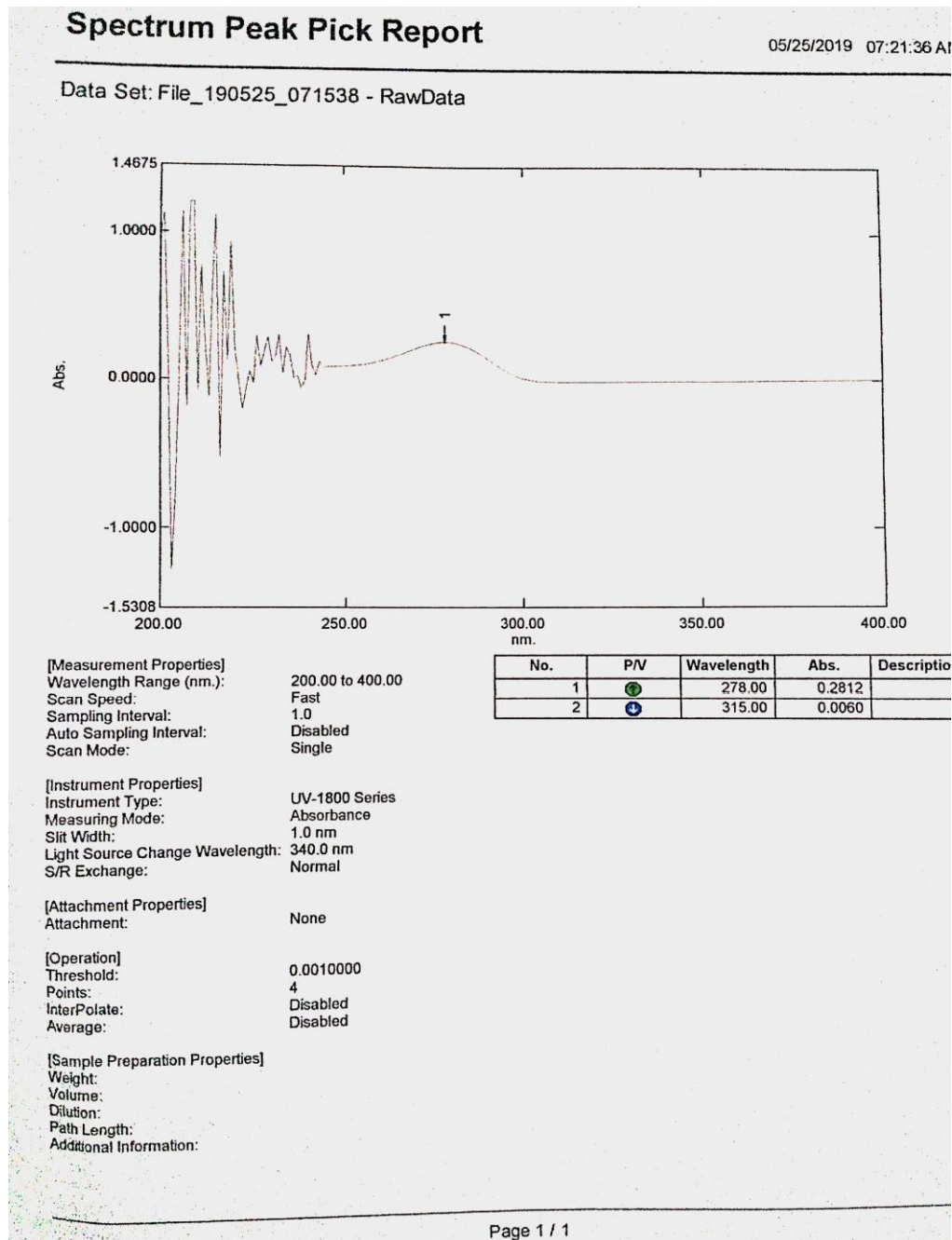
$$\frac{1,1061}{0,0693} = x$$

$$15,9610 = x$$

Kadar (mg)

$$\frac{\text{kadar (ppm)} \times \text{faktor pengenceran} \times \text{volume pembuatan}}{1000 \text{ mL}}$$

$$= \frac{15,9610 \times 10 \times 50}{1000 \text{ mL}} \times 50 \text{ mL} = 7,9805 \text{ mg}$$

Lampiran 13. Lamda maksimal

Lampiran 14. Operating Time

Kinetics Data Print Report	
05/25/2019 07:58:50 AM	
Time (Minute)	RawData ...
0.000	0.297
1.000	0.296
2.000	0.298
3.000	0.297
4.000	0.297
5.000	0.297
6.000	0.297
7.000	0.297
8.000	0.297
9.000	0.297
10.000	0.297
11.000	0.297
12.000	0.297
13.000	0.297
14.000	0.297
15.000	0.297
16.000	0.297
17.000	0.296
18.000	0.297
19.000	0.297
20.000	0.297
21.000	0.297
22.000	0.297
23.000	0.297
24.000	0.297
25.000	0.297
26.000	0.296
27.000	0.297
28.000	0.297
29.000	0.297
30.000	0.298

Lampiran 15. Pembuatan larutan induk

Ditimbang 10,1 mg dimenhidrinat murni kemudian dilarutkan dengan etanol, baru di ad kan dengan dapar phospat pH 6,8 di labu ukur 100 mL (100 ppm)

Lampiran 16. Pembuatan larutan stock 10 ppm

Dipipet 1 ml larutan induk di adkan dapar phospat pada labu ukur 10 mL.

$$V1.C1 = V2.C2$$

$$V1.100 \text{ ppm} = 10 \text{ mL. } 10 \text{ ppm}$$

$$V1 = 1 \text{ mL}$$

Lampiran 17. Perhitungan kurva kalibrasi**Konsentrasi 7 ppm**

$$V1.C1 = V2.C2$$

$$V1.100 \text{ ppm} = 10 \text{ mL. } 7 \text{ ppm}$$

$$V1 = 0,7 \text{ mL}$$

Konsentrasi 9 ppm

$$V1.C1 = V2.C2$$

$$V1.100 \text{ ppm} = 10 \text{ mL. } 9 \text{ ppm}$$

$$V1 = 0,9 \text{ mL}$$

Konsentrasi 11 ppm

$$V1.C1 = V2.C2$$

$$V1.100 \text{ ppm} = 10 \text{ mL. } 11 \text{ ppm}$$

$$V1 = 1,1 \text{ mL}$$

Konsentrasi 13 ppm

$$V1.C1 = V2.C2$$

$$V1.100 \text{ ppm} = 10 \text{ mL. } 13 \text{ ppm}$$

$$V1 = 1,3 \text{ mL}$$

Konsentrasi 15 ppm

$$V1.C1 = V2.C2$$

$$V1.100 \text{ ppm} = 10 \text{ mL. } 15 \text{ ppm}$$

$$V1 = 1,5 \text{ mL}$$

Konsentrasi 17 ppm

$$V1.C1 = V2.C2$$

$$V1.100 \text{ ppm} = 10 \text{ mL. } 17 \text{ ppm}$$

$$V1 = 1,7 \text{ mL}$$

Lampiran 18. Hasil perhitungan linearitas

Konsentrasi (ppm)	absorbansi
7	0,151
9	0,288
11	0,415
13	0,583
15	0,708
17	0,838
a	-0,33513
b	0,069386
r	0,999323

Lampiran 19. Hasil perhitungan LOD dan LOQ

X (ppm)	Y (abs)	Y'	Y-Y'	(Y-Y')²
7	0,151	0,150572	0,0004	0,00000018318400000
9	0,288	0,289344	-0,0013	0,00000180633600000
11	0,415	0,428116	-0,0131	0,00017202945600000
13	0,583	0,566888	0,0161	0,00025959654400000
15	0,708	0,70566	0,0023	0,00000547560000000
17	0,838	0,844432	-0,0064	0,00004137062400000
			TOTAL	0,0005
A	-0,33513		SY/X	0,0098
B	0,069386		LOD	0,4662
R	0,999323		LOQ	1,4128

$$Y' = a + b(x)$$

$$S_{y/x} = \frac{\sqrt{\sum(Y-Y')^2}}{n-2}$$

$$\text{LOD} = 3,3 \times \frac{SY/X}{b}$$

$$\text{Nilai serapan} = Y = a + bx$$

$$= -0,3351 + 0,0693 (0,4662)$$

$$= 0,12391$$

$$\text{LOQ} = 10 \times \frac{SY/X}{b}$$

$$\text{Nilai serapan} = Y = a + bx$$

$$= -0,3351 + 0,0693 (1,4128)$$

$$= 0,2371$$

Lampiran 20. Hasil perhitungan presisi

Konsentrasi	ABS	Konsentrasi
13	0,556	12,843
13	0,562	12,930
13	0,565	12,973
13	0,567	13,002
13	0,572	13,074
13	0,574	13,102
13	0,579	13,175
13	0,581	13,203
13	0,582	13,218
13	0,584	13,247
	Jumlah	130,80
	Rata - rata	13,077
	SD	0,137
	CV	1,04%

$$\text{Konsentrasi} = \frac{(\text{abs}-a)}{b}$$

$$\text{Cv} = \frac{\text{jumlah SD}}{\text{rata-rata}} \times 100\%$$

Lampiran 21. Hasil perhitungan akurasi

Konsentrasi	replikasi	abs	konsentrasi	sebenarnya	%		
80%	1	0,387	10,4074	10,4	100%	100,39%	
	2	0,39	10,4507	10,4	100%		
	3	0,391	10,4651	10,4	101%		
100%	1	0,583	13,2322	13	102%	101,71%	
	2	0,581	13,2034	13	102%		
	3	0,583	13,2322	13	102%		100,68%
120%	1	0,746	15,5814	15,6	100%	99,94%	
	2	0,746	15,5814	15,6	100%		
	3	0,748	15,6102	15,6	100%		