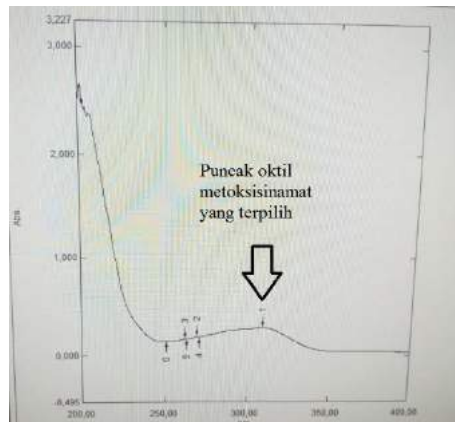


# LAMPIRAN 1

## HASIL SPEKTRUM PANJANG GELOMBANG

| No | P/V | Wavelength | Abs   |
|----|-----|------------|-------|
| 1  | ↑   | 309.40     | 0.284 |
| 2  | ↑   | 269.00     | 0.192 |
| 3  | ↑   | 262.20     | 0.168 |
| 4  | ↓   | 270.80     | 0.188 |
| 5  | ↓   | 263.00     | 0.167 |
| 6  | ↓   | 250.80     | 0.139 |



## LAMPIRAN 2

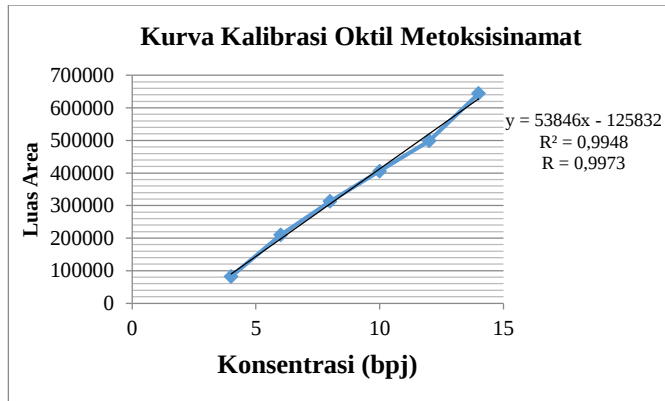
### HASIL UJI KESESUAIAN SISTEM

| <b>Pengulangan</b> | <b>RT</b>     | <b>Area</b>   | <b>TF</b>      | <b>K'</b>    | <b>N Plates</b>  | <b>Rs</b>      |
|--------------------|---------------|---------------|----------------|--------------|------------------|----------------|
| 1                  | 5,983         | 131431        | 1,044          | 4,528        | 33032,123        | 1,880          |
| 2                  | 5,966         | 138293        | 1,045          | 4,464        | 33197,315        | 1,872          |
| 3                  | 5,975         | 136299        | 1,043          | 5,731        | 33351,493        | 1,906          |
| 4                  | 5,951         | 136547        | 1,044          | 5,795        | 33295,893        | 1,903          |
| 5                  | 5,951         | 134517        | 1,045          | 5,702        | 33331,481        | 1,890          |
| 6                  | 5,963         | 135927        | 1,044          | 5,709        | 33201,037        | 1,880          |
| <b>Rata-rata</b>   | 5,965         | 135502        | 1,044          | 5,322        | 33234,890        | 1,889          |
| <b>SD</b>          | <b>0,013</b>  | <b>2334</b>   |                |              |                  |                |
| <b>Hasil</b>       | <b>0,215</b>  | <b>1,723</b>  | <b>1,044</b>   | <b>5,652</b> | <b>33282,959</b> | <b>1,789</b>   |
| <b>SYARAT</b>      | <b>&lt;2%</b> | <b>&lt;2%</b> | <b>&lt;1,5</b> | <b>&gt;2</b> | <b>&gt;2000</b>  | <b>&gt;1,5</b> |
| <b>Kesimpulan</b>  | <b>MS</b>     | <b>MS</b>     | <b>MS</b>      | <b>MS</b>    | <b>MS</b>        | <b>MS</b>      |

Keterangan : Sistem kolom C18, Fase gerak metanol-air (90:10), laju alir 1,5mL/menit, detektor UV 309nm

### LAMPIRAN 3 KURVA KALIBRASI

| Konsentrasi | Luas Area |
|-------------|-----------|
| 4 bpj       | 81758     |
| 6 bpj       | 209831    |
| 8 bpj       | 312956    |
| 10 bpj      | 405824    |
| 12 bpj      | 498492    |
| 14 bpj      | 643833    |



Gambar VI.2 : Grafik Kurva Kalibrasi Oktil Metoksisinamat

## LAMPIRAN 4

### BATAS DETEKSI DAN BATAS KUANTISASI

Regresi linier : ( $y = 53846x - 125832$ )

| Konsentrasi | Area (Y) | Yi     | (Y-Yi) <sup>2</sup> |
|-------------|----------|--------|---------------------|
| 4           | 81758    | 89552  | 60746436            |
| 6           | 209831   | 197244 | 158432569           |
| 8           | 312956   | 304936 | 64320400            |
| 10          | 405824   | 412628 | 46294416            |
| 12          | 498492   | 520320 | 476461584           |
| 14          | 643833   | 628012 | 250304041           |
|             |          |        | 1056559446          |

|            |              |
|------------|--------------|
| $s(y/x)^2$ | 264.139.862  |
| $s(y/x)$   | 16252,380    |
| <b>LOD</b> | <b>0,905</b> |
| <b>LOQ</b> | <b>3,018</b> |
| <b>SxO</b> | <b>0,302</b> |
| <b>VxO</b> | <b>3,354</b> |

Penentuan Batas Deteksi dan Batas Kuantifikasi

Dapat dihitung dengan menggunakan rumus :

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

$$\text{Batas Deteksi} = \frac{3 S_{y/x}}{b}$$

$$\text{Batas Kuantitasi} = \frac{10 S_{y/x}}{b}$$

**Keterangan :**

$$y = 53846x - 125832$$

n = Jumlah data

b = slope

$$y' = (\text{Konsentrasi} \times 53846) - 125832$$

## LAMPIRAN 5

### PEMBUATAN SIMULASI SAMPEL LOTION

**Kadar OMS tidak boleh lebih dari 10%.**

Perhitungan bahan

1. Sampel simulasi 80%

$$\text{OMS} = \frac{8}{100} \times 50\text{ml} = 4\text{gram}$$

$$\text{Basis lotion} = \frac{82}{100} \times 50\text{ml} = 46\text{gram}$$

2. Sampel simulasi 100%

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

$$\text{Basis lotion} = \frac{90}{100} \times 50\text{ml} = 45\text{gram}$$

3. Sampel simulasi 120%

$$\text{OMS} = \frac{12}{100} \times 50\text{ml} = 6\text{gram}$$

$$\text{Basis lotion} = \frac{88}{100} \times 50\text{ml} = 44\text{gram}$$

## LAMPIRAN 6 AKURASI

| Kadar baku teoritis      | Area (y) | C (x) | % Recovery | Rata-Rata % Recovery |
|--------------------------|----------|-------|------------|----------------------|
| Simulasi 5,6bpj 80% - 1  | 240346   | 6,800 | 97,150%    |                      |
| Simulasi 5,6bpj 80% - 2  | 240618   | 6,806 | 97,222%    | 97,12%               |
| Simulasi 5,6bpj 80% - 3  | 239684   | 6,788 | 96,974%    |                      |
| Simulasi 7bpj 100% - 4   | 256430   | 7,099 | 101,417%   |                      |
| Simulasi 7bpj 100% - 5   | 253008   | 7,036 | 100,509%   | 101,29%              |
| Simulasi 7bpj 100% - 6   | 258377   | 7,135 | 101,933%   |                      |
| Simulasi 8,4bpj 120% - 1 | 286709   | 7,661 | 91,208%    |                      |
| Simulasi 8,4bpj 120% - 2 | 287760   | 7,681 | 91,441%    | 91,38%               |
| Simulasi 8,4bpj 120% - 3 | 288055   | 7,686 | 91,506%    |                      |

Penentuan Akurasi dapat dihitung dengan menggunakan rumus :

$$\% \text{ perolehan kembali} = \frac{\text{konsentrasi pengukuran}}{\text{konsentrasi teoritis}} \times 100 \%$$

## LAMPIRAN 7 PRESISI

| Pengulangan      | Area          | C (x)         |
|------------------|---------------|---------------|
| 1                | 231159        | 6,630         |
| 2                | 236950        | 6,737         |
| 3                | 238980        | 6,775         |
| 4                | 240346        | 6,800         |
| 5                | 240618        | 6,806         |
| 6                | 239684        | 6,788         |
| <b>Rata-rata</b> | <b>237956</b> | <b>6,756</b>  |
| <b>SD</b>        |               | <b>0,066</b>  |
| <b>RSD</b>       |               | <b>0,984%</b> |

Penentuan Presisi dapat dihitung dengan menggunakan rumus :

$$SD = \frac{\sum \sqrt{(x-xi)^2}}{n-1}$$

$$KV (\%) = \frac{SD \times 100}{\bar{x}}$$

Keterangan :

x = Nilai konsentrasi analit

xi = Nilai rata-rata konsentrasi

n = Jumlah data konsentrasi analit

## LAMPIRAN 8 SAMPEL

| Nama Sampel     | Area   | C      | Massa (mg) | Faktor Koreksi |
|-----------------|--------|--------|------------|----------------|
| Sampel Lotion A | 101471 | 50,999 | 5,100      | 5,279          |
| Sample Lotion B | 87622  | 39,615 | 3,961      | 4,101          |
| Sampel Lotion C | 102349 | 48,410 | 4,841      | 5,011          |

Penentuan Kadar Sampel dapat dihitung dengan menggunakan rumus :

$$c = \frac{(y - a)}{b}$$

$$\% \text{ Kadar} = \frac{c \times Fp \times V \text{ Lu}}{1000}$$

Keterangan :

C = Kadar analit dalam sampel

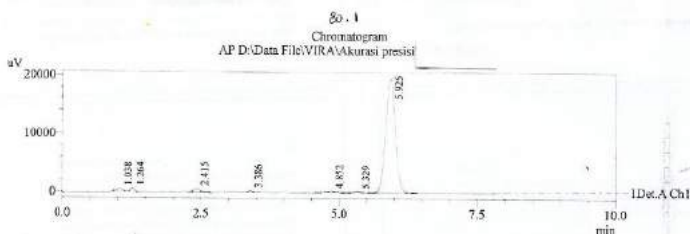
Fp = Faktor pengenceran

V Lu = Volume labu ukur

y = 53846x-125832

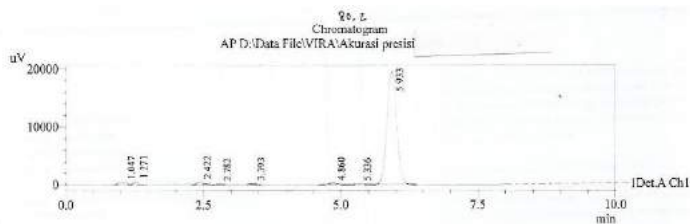
## LAMPIRAN 9 KROMATOGRAM OKTIL METOKSISINAMAT

### AKURASI Sampel simulasi 80%



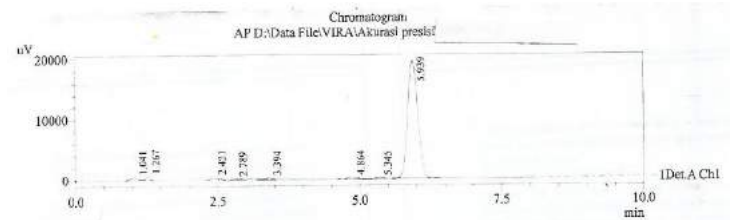
PeakTable

| Ret. Time | Area   | theoretical Plates/meter | Tailing Factor | Resolution | k'    |
|-----------|--------|--------------------------|----------------|------------|-------|
| 1.038     | 4515   | 1713.703                 | 0.000          | 0.000      | 0.000 |
| 1.264     | 2726   | 9582.758                 | 0.000          | 1.150      | 0.217 |
| 2.415     | 5014   | 15680.125                | 0.000          | 6.927      | 1.327 |
| 3.386     | 2552   | 19176.129                | 0.000          | 4.297      | 2.262 |
| 4.832     | 2770   | 24830.797                | 0.930          | 5.140      | 3.674 |
| 5.329     | 1344   | 30958.401                | 0.000          | 1.511      | 4.134 |
| 5.925     | 240146 | 33623.264                | 1.053          | 1.844      | 4.708 |
|           | 259266 |                          |                |            |       |



PeakTable

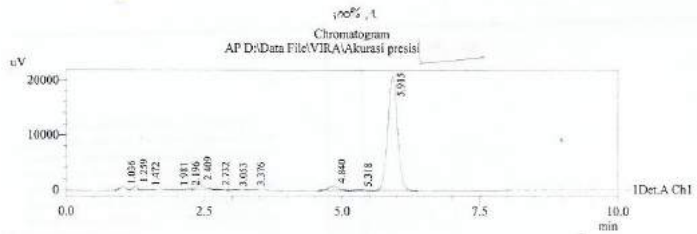
| Ret. Time | Area   | theoretical Plates/meter | Tailing Factor | Resolution | k'    |
|-----------|--------|--------------------------|----------------|------------|-------|
| 1.047     | 4621   | 1701.462                 | 0.000          | 0.000      | 0.000 |
| 1.271     | 2790   | 9017.767                 | 0.000          | 1.121      | 0.214 |
| 2.422     | 4139   | 17873.086                | 0.000          | 7.071      | 1.313 |
| 2.782     | 1037   | 7585.710                 | 0.000          | 1.393      | 1.657 |
| 3.393     | 1899   | 21831.071                | 0.000          | 2.156      | 2.241 |
| 4.860     | 2915   | 23849.450                | 0.000          | 5.219      | 3.642 |
| 5.336     | 1343   | 31965.212                | 0.000          | 1.501      | 4.096 |
| 5.933     | 240618 | 33705.684                | 1.051          | 1.861      | 4.666 |
|           | 259263 |                          |                |            |       |



PeakTable

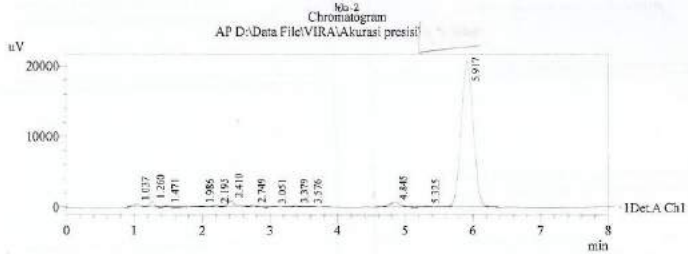
| Ret. Time | Area   | Theoretical Plates/mets | Tailing Factor | Resolution | k'    |
|-----------|--------|-------------------------|----------------|------------|-------|
| 1.041     | 4365   | 1784.958                | 0.000          | 0.000      | 0.000 |
| 1.267     | 2670   | 10112.776               | 0.000          | 1.176      | 0.217 |
| 2.421     | 3325   | 15886.195               | 0.000          | 7.026      | 1.326 |
| 2.789     | 1240   | 938.158                 | 0.000          | 0.647      | 1.680 |
| 3.394     | 2067   | 20691.889               | 0.000          | 1.021      | 2.260 |
| 4.864     | 2447   | 24857.273               | 0.986          | 5.231      | 3.673 |
| 5.345     | 1350   | 27973.361               | 0.000          | 1.483      | 4.135 |
| 5.939     | 230684 | 33784.167               | 1.052          | 1.787      | 4.705 |
|           | 257148 |                         |                |            |       |

## Sampel Simulasi 100%



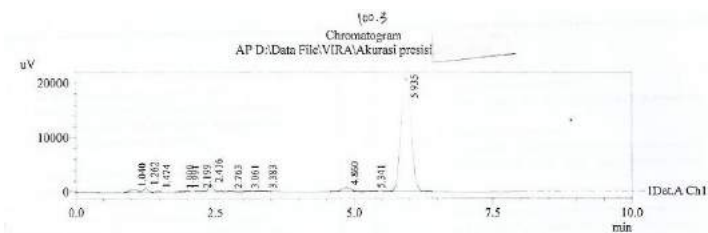
PeakTable

| Ret. Time | Area   | theoretical Plates/mrtg | Tailing Factor | Resolution | k'    |
|-----------|--------|-------------------------|----------------|------------|-------|
| 1.036     | 4743   | 1623.481                | 0.000          | 0.000      | 0.000 |
| 1.259     | 4368   | 7611.874                | 0.000          | 1.076      | 0.215 |
| 1.472     | 1412   | 9254.150                | 0.000          | 1.383      | 0.420 |
| 1.981     | 4194   | 1066.367                | 0.000          | 1.298      | 0.911 |
| 2.196     | 2876   | 3359.563                | 0.000          | 0.423      | 1.119 |
| 2.469     | 12521  | 13818.009               | 0.000          | 0.707      | 1.325 |
| 2.732     | 2093   | 2294.159                | 0.000          | 0.808      | 1.637 |
| 3.053     | 1294   | 8435.852                | 0.000          | 0.587      | 1.946 |
| 3.376     | 3102   | 2066.707                | 0.000          | 0.583      | 2.258 |
| 4.840     | 8927   | 23655.354               | 0.996          | 2.681      | 3.671 |
| 5.318     | 1425   | 20565.194               | 0.000          | 1.496      | 4.132 |
| 5.915     | 256430 | 33455.993               | 1.053          | 1.841      | 4.708 |
|           | 303386 |                         |                |            |       |



PeakTable

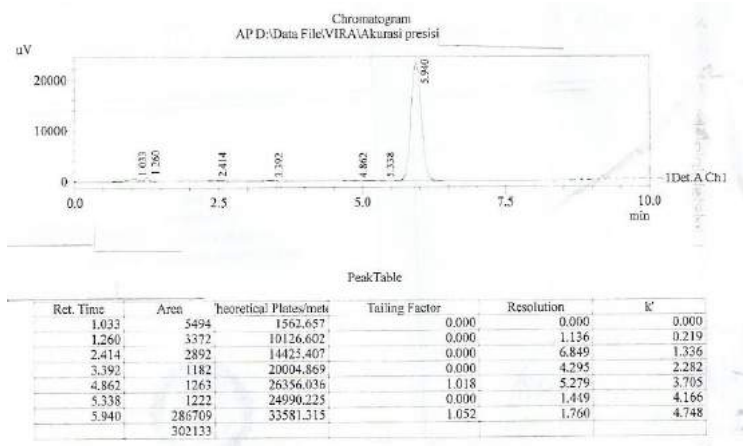
| Ret. Time | Area   | theoretical Plates/mrtg | Tailing Factor | Resolution | k'    |
|-----------|--------|-------------------------|----------------|------------|-------|
| 1.037     | 4776   | 1666.628                | 0.000          | 0.000      | 0.000 |
| 1.260     | 4212   | 8371.151                | 0.000          | 1.100      | 0.215 |
| 1.471     | 1344   | 9160.471                | 0.000          | 1.405      | 0.418 |
| 1.985     | 3644   | 1612.008                | 0.000          | 1.539      | 0.915 |
| 2.195     | 2289   | 5093.450                | 0.000          | 0.504      | 1.116 |
| 2.410     | 9245   | 13970.979               | 0.000          | 0.815      | 1.324 |
| 2.749     | 2622   | 4698.782                | 0.000          | 1.084      | 1.650 |
| 3.051     | 1258   | 11169.837               | 0.000          | 0.548      | 1.941 |
| 3.379     | 2725   | 2615.951                | 0.000          | 0.669      | 2.258 |
| 3.776     | 1204   | 3061.171                | 0.000          | 0.292      | 2.448 |
| 4.845     | 8172   | 23549.871               | 0.958          | 2.555      | 3.672 |
| 5.325     | 1256   | 32111.901               | 0.000          | 1.517      | 4.135 |
| 5.917     | 253008 | 33556.363               | 1.053          | 1.849      | 4.705 |
|           | 295823 |                         |                |            |       |

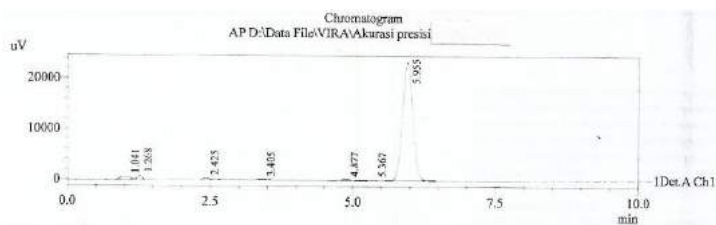


PeakTable

| Ret. Time | Area   | theoretical Plates/men | Tailing Factor | Resolution | k'    |
|-----------|--------|------------------------|----------------|------------|-------|
| 1.040     | 4701   | 1469.438               | 0.000          | 0.090      | 0.000 |
| 1.262     | 4368   | 8690.425               | 0.000          | 1.056      | 0.213 |
| 1.474     | 1498   | 9383.988               | 0.000          | 1.430      | 0.417 |
| 1.900     | 1816   | 160.730                | 0.000          | 0.499      | 0.826 |
| 1.991     | 1077   | 1123.185               | 0.000          | 0.084      | 0.914 |
| 2.199     | 1812   | 8245.364               | 0.000          | 0.483      | 1.114 |
| 2.416     | 9783   | 18817.368              | 0.000          | 1.092      | 1.322 |
| 2.763     | 1093   | 14562.346              | 0.000          | 1.681      | 1.656 |
| 3.061     | 1152   | 12430.145              | 0.000          | 1.145      | 1.942 |
| 3.383     | 2190   | 1914.114               | 0.000          | 0.596      | 2.252 |
| 4.860     | 9413   | 25470.300              | 0.985          | 2.622      | 3.671 |
| 5.341     | 1901   | 26630.128              | 0.000          | 1.446      | 4.134 |
| 5.935     | 258377 | 33586.809              | 1.052          | 1.766      | 4.705 |
|           | 299185 |                        |                |            |       |

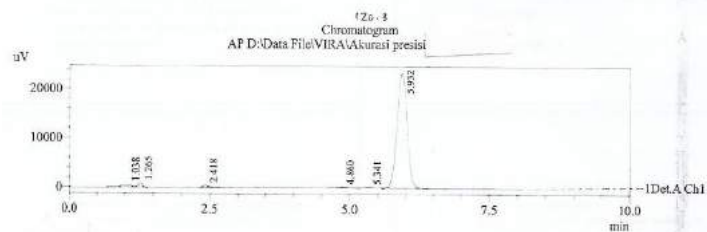
## Sampel Simulasi 120%





PeakTable

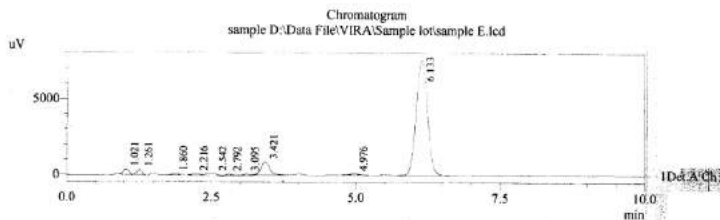
| Ret. Time | Area   | heoretical Plates/met | Tailing Factor | Resolution | k'    |
|-----------|--------|-----------------------|----------------|------------|-------|
| 1.041     | 5556   | 1568.562              | 0.000          | 0.000      | 0.000 |
| 1.268     | 3404   | 10203.788             | 0.000          | 1.133      | 0.218 |
| 2.425     | 3065   | 15812.810             | 0.000          | 7.032      | 1.329 |
| 3.405     | 1117   | 22076.932             | 0.000          | 4.500      | 2.271 |
| 4.877     | 1780   | 23043.520             | 0.880          | 5.177      | 3.684 |
| 5.367     | 1232   | 25578.352             | 0.000          | 1.446      | 4.155 |
| 5.955     | 287760 | 33702.480             | 1.052          | 1.725      | 4.720 |
|           | 303914 |                       |                |            |       |



PeakTable

| Ret. Time | Area   | heoretical Plates/met | Tailing Factor | Resolution | k'    |
|-----------|--------|-----------------------|----------------|------------|-------|
| 1.038     | 5553   | 1557.367              | 0.000          | 0.000      | 0.000 |
| 1.265     | 3391   | 10080.564             | 0.000          | 1.130      | 0.219 |
| 2.418     | 3075   | 15929.008             | 0.000          | 7.028      | 1.329 |
| 4.860     | 1713   | 24213.608             | 0.973          | 5.383      | 3.680 |
| 5.341     | 1201   | 26514.253             | 0.000          | 1.454      | 4.143 |
| 5.932     | 288055 | 33773.604             | 1.053          | 1.761      | 4.713 |
|           | 302988 |                       |                |            |       |

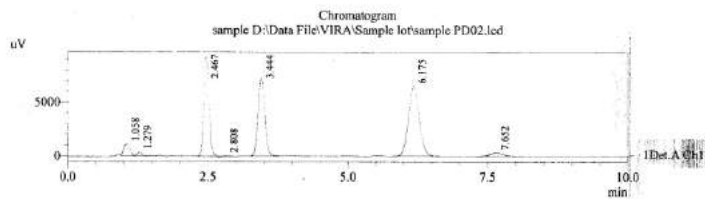
## SAMPEL A



Peak Table

| Ret. Time | Area   | Tailing Factor | heoretical Plates/mete | Resolution | Separation |
|-----------|--------|----------------|------------------------|------------|------------|
| 1.021     | 2271   | 0.000          | 3222.826               | 0.000      | 0.000      |
| 1.261     | 1819   | 0.866          | 7645.007               | 1.433      | 0.000      |
| 1.860     | 1162   | 0.000          | 1344.964               | 1.781      | 3.499      |
| 2.216     | 1220   | 0.000          | 3048.576               | 0.759      | 1.425      |
| 2.542     | 1889   | 0.000          | 3435.329               | 0.755      | 1.272      |
| 2.792     | 1143   | 0.000          | 5506.578               | 0.598      | 1.164      |
| 3.095     | 1082   | 0.000          | 4888.287               | 0.716      | 1.171      |
| 3.421     | 9403   | 0.000          | 17874.286              | 0.904      | 1.157      |
| 4.976     | 1037   | 0.967          | 25573.278              | 5.312      | 1.648      |
| 6.133     | 101471 | 1.089          | 30960.804              | 3.395      | 1.292      |

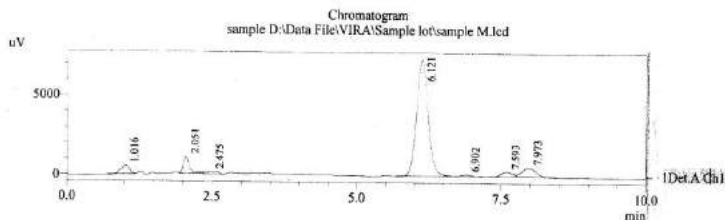
## SAMPEL B



Peak Table

| Ret. Time | Area  | Tailing Factor | heoretical Plates/mete | Resolution | Separation |
|-----------|-------|----------------|------------------------|------------|------------|
| 1.058     | 8098  | 0.000          | 3077.847               | 0.000      | 0.000      |
| 1.279     | 1769  | 0.000          | 8568.158               | 1.301      | 0.000      |
| 2.467     | 56350 | 1.196          | 21904.504              | 7.549      | 6.381      |
| 2.808     | 1140  | 0.000          | 1920.951               | 0.818      | 1.242      |
| 3.444     | 59413 | 1.125          | 25260.237              | 1.436      | 1.363      |
| 6.175     | 87622 | 1.089          | 30842.314              | 9.305      | 2.144      |
| 7.652     | 4552  | 1.083          | 39154.137              | 3.874      | 1.289      |

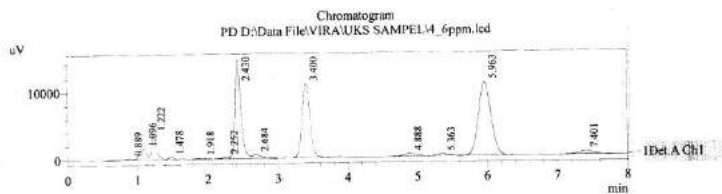
## SAMPEL C



PeakTable

| Ret. Time | Area   | Tailing Factor | theoretical Plates/m | Resolution | Separation |
|-----------|--------|----------------|----------------------|------------|------------|
| 1.016     | 5456   | 0.000          | 1570.430             | 0.000      | 0.000      |
| 2.051     | 7689   | 0.000          | 14187.241            | 4.681      | 0.000      |
| 2.475     | 1959   | 0.000          | 4243.132             | 1.487      | 1.409      |
| 6.121     | 102349 | 1.117          | 29309.025            | 9.573      | 3.498      |
| 6.902     | 1675   | 0.000          | 26451.344            | 1.933      | 1.153      |
| 7.593     | 4116   | 0.000          | 37011.374            | 1.635      | 1.117      |
| 7.973     | 9175   | 0.000          | 37211.424            | 0.909      | 1.058      |
|           | 132419 |                |                      |            |            |

## KROMATOGRAM UKS



PeakTable

| Ret. Time | Area   | Tailing Factor | theoretical Plates/m | Resolution | Separation |
|-----------|--------|----------------|----------------------|------------|------------|
| 0.889     | 1941   | 0.000          | 1084.914             | 0.000      | 0.000      |
| 1.096     | 11656  | 0.000          | 3021.654             | 0.855      | 0.000      |
| 1.222     | 16961  | 0.000          | 11049.136            | 0.773      | 1.608      |
| 1.478     | 1941   | 0.000          | 7895.407             | 1.752      | 1.768      |
| 1.918     | 2260   | 0.000          | 1547.801             | 1.304      | 1.748      |
| 2.252     | 2214   | 0.000          | 9324.025             | 0.898      | 1.325      |
| 2.430     | 86613  | 1.235          | 22674.063            | 0.872      | 1.130      |
| 2.684     | 5322   | 0.000          | 8674.335             | 1.094      | 1.165      |
| 3.400     | 84950  | 1.090          | 27127.383            | 2.804      | 1.399      |
| 4.888     | 5248   | 1.110          | 23483.479            | 1.505      | 1.593      |
| 5.363     | 3390   | 1.020          | 33884.584            | 1.880      | 1.134      |
| 5.963     | 135927 | 1.044          | 33201.037            | 4.047      | 1.283      |
| 7.401     | 6881   | 1.026          | 42115.531            |            |            |
|           | 365304 |                |                      |            |            |