**Lampiran 1. Lembar Penjelasan Penelitian**

Nama Peneliti : Widya Dwi Astuti

NIM : P17334117087

Judul Penelitian : Hubungan kadar Nikotin Terhadap Glukosa Darah Pada Perokok Aktif

Peneliti adalah mahasiswa Program Diploma III Analis Kesehatan Poltekkes Kemenkes Bandung. Saudara telah diminta ikut berpartisipasi dalam penelitian ini. Responden dalam penelitian ini bersifat sukarela. Saudara berhak menolak berpartisispasi dalam penelitian ini. Penelitian ini dilakukan dengan cara mengambil sebanyak 3cc sampel darah yang selanjutnya dibuat plasma darah, kemudian dilakukan pengukuran kadar nikotin dan glukosa darah. Segala informasi yang saudara berikan akan digunakan sepenuhnya hanya dalam penelitian ini. Peneliti sepenuhnya akan menjaga kerahasiaan identitas saudara dan tidak dipublikasikan dalam bentuk apapun. Jika ada yang belum jelas, saudara boleh bertanya pada peneliti. Jika saudara sudah memahami penjelasan ini dan bersedia berpartisispasi dalam penelitian ini, silahkan saudara menandatangani lembar persetujuan yang akan dilampirkan.

Peneliti

Widya Dwi Astuti

**Lampiran 2. Salah satu Lembar Pernyataan Persetujuan *(Informed Consent)* Subjek Uji**

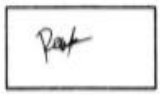
**Lampiran 2. Lembar Pernyataan Persetujuan *(Informed Consent)***

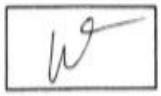
Yang bertandatangan di bawah ini,

| | |
|---|---|
| Nama | : Rakka Prathama F |
| Jenis Kelamin | : Laki-laki |
| No. Tlp/HP | : 082121980978 |
| Umur | : 22 |
| Alamat Rumah | : Jl. Gatot Subroto |

Semua penjelasan yang berkaitan dengan penelitian mengenai "Hubungan Kadar Nikotin Terhadap Glukosa Darah Pada Perokok Aktif", telah disampaikan kepada saya dan semua pertanyaan saya telah dijawab oleh peneliti. Saya mengerti bahwa bila memerlukan penjelasan, saya dapat menanyakan kepada Widya Dwi Astuti.

Dengan menandatangani lembar *informed consent* ini, saya setuju untuk ikut serta dalam penelitian ini.

Tandatangan subjek  Tanggal 27 Februari 2020

Tandatangan saksi 

**Lampiran 3. Salah satu Kuesioner Subjek Uji yang masuk dalam Kriteria Inklusi**

**Lampiran 3. Formulir Kuesioner Subjek Uji**

Nama : Rakka Prathama F

Umur : 22

Jenis Kelamin : Laki-laki

Pekerjaan : -

No. Tlp/HP : 082121980978

Waktu pengambilan darah : 27 Februari 2020 / 21.15 WIB

**Jawablah petanyaan berikut!**

1. Berapa lama anda menjadi perokok aktif?
   Jawab: 7 th
2. Berapa banyak batang rokok perhari yang anda hisap?
   a. <10 : ..... batang
   b. 11 – 20 : 12 batang
   c. 21 – 30 : ..... batang
3. Apakah anda memiliki riwayat penyakit berikut?
   a. Diabetes Melitus (DM)
   b. Hipertensi
   c. -
4. Pukul berapa terakhir kali anda merokok? 15.00
5. Berapa jumlah batang rokok yang anda konsumsi sehari sebelum pengambilan darah? 12
6. Pukul berapa terakhir kali anda makan? 13.00
7. Makanan/minuman apa yang anda konsumsi sehari sebelum pengambilan darah? Nasi

Bandung, 27 Februari 2020

## Lampiran 4. Kit Insert *Glucose* GOD-PAP

**BIOLABO**
**www.biolabo.fr**
**MANUFACTURER:**
**BIOLABO SA,**
Les Hautes Rives
02160, Maizy, France

# GLUCOSE GOD-PAP

Reagent for quantitative determination of glucose
in human plasma, serum, cerebrospinal fluid (CSF) or urines

| | | | | | | |
|---|---|---|---|---|---|---|
| REF 80009 | **R1** | 1 x 500 mL | **R2** | 1 x 7.5 mL | **R3** | 1 x 5 mL |
| REF 87109 | **R1** | 6 x 250 mL | **R2** | 6 x 3.75 mL | **R3** | 1 x 5 mL |
| REF 16GL8 | **R1** | 6 x 1000 mL | **R2** | 6 x 15 mL | **R3** | 1 x 10 mL |

**TECHNICAL SUPPORT AND ORDERS**
**Tel : (33) 03 23 25 15 50**
**Fax : (33) 03 23 256 256**

CE

**IVD IN VITRO DIAGNOSTIC USE**

## CLINICAL SIGNIFICANCE (1) (6)

The glucose level in blood is maintained within a fairly narrow range under diverse conditions (feeding, fasting, or severe exercise) by regulatory hormones such as insulin, glucagon, or epinephrin. Measurement of glucose is one of the most frequently performed procedures in clinical chemistry laboratories in conjunction with other tolerance testing (Glucose tolerance test, Glucose 2h post-prandial...).

The most frequently encountered disorder of carbohydrate metabolism in blood is hyperglycemia due to diabetes mellitus.

Hyperglycemia higher than 300 mg/dL (16.5 mmol/L) may induce keto-acidosis and hyperosmolar coma.

In prolonged hypoglycemia, lower than 30 mg/dL (1.7 mmol/L), severe irreversible encephalic damage may occurs.

## PRINCIPLE (4) (5)

Trinder Method. Glucose is oxidised by GOD to gluconic acid and hydrogen peroxide which in conjunction with POD, reacts with chloro-4-phenol and PAP to form a red quinoneimine. The absorbance of the coloured complexe, proportional to the concentration of glucose in the specimen is measured at 500 nm.

## REAGENTS COMPOSITION

**Vial R1** **ENZYMES-BUFFER**

| | | |
|---|---|---|
| Phosphate Buffer | 150 | mmol/L |
| Glucose oxidase (GOD) | ≥ 20 000 | UI/L |
| Peroxidase (POD) | ≥ 1000 | UI/L |
| 4-Amino-antipyrine (PAP) | 0.8 | mmol/L |

**Vial R2** **CHROMOGEN**

| | | |
|---|---|---|
| Chloro-4-phenol | 2 | mmol/L |

**Vial R3** **STANDARD**

Glucose 100 mg/dL (5.55 mmol/L)

## SAFETY CAUTIONS

BIOLABO reagents are designated for professional, in vitro diagnostic use.

- Verify the integrity of the contents before use
- Use adequate protections (overall, gloves, glasses).
- Do not pipette by mouth.
- In case of contact with skin or eyes, thoroughly wash affected areas with plenty of water and seek medical advice.
- Material Safety Data Sheet is available upon request.
- Waste disposal: Respect legislation in force in the country.

All specimens should be handled as potentially infectious, in accordance with good laboratory practices using appropriate precautions. Respect legislation in force in the country.

## REAGENTS PREPARATION

Vial R1 and R2: If appropriate, use a non-sharp instrument to remove aluminium cap.
Using a volumetric flask, measure the volume of demineralised water stated on the label of the vial R1 (Enzymes-Buffer).

Transfer the contents of vial R1 into the flask and mix gently until complete dissolution (approximately 2 minutes). Then, add the contents of vial R2 and mix gently. Store away from light in a plastic bottle free from contamination

## STABILITY AND STORAGE

**Store at 2-8°C, away from light.**

- Standard (vial R3): transfer requested quantity, well recap the vial and store at 2-8°C.
- Reagent R1 (unopened) and reagents R2 and R3 are stable until expiry date stated on the label of the kit when stored and used as described.
- Once reconstituted, working reagent is stable for at least 2 years when free from contamination.
- Discard reagent if cloudy or if reagent blank at 500 nm is > 0.400.
- Don't use working reagent after expiry date stated on the label of the kit.

## SPECIMEN COLLECTION AND HANDLING (2)

Serum or plasma:
Separate promptly from cells to prevent glycolysis. If fluoride is used as a preservative, a decrease of 9 mg/dL (0.5 mmol/L) is seen within the first 2 hours, then concentration stabilises.

Glucose is stable in serum or heparinised plasma :

- for 8 h at 25°C
- for 72 h at 2-8°C

Glucose is stable in plasma (Sodium fluoride or iodoacetate) :

- for 24 h at room temperature.

CSF:
Process immediately to avoid falsely low results. Store at –20°C.

Urines:
Collect in dark bottle and store at 2-8°C. Preserve 24 h urines with 5 mL glacial acetic acid or 5 g sodium benzoate or sodium fluoride.

## INTERFERENCES (3)

Ascorbic acid: No interference up to 10 mg/dL.
Total bilirubin : Negative interference above 20 mg/dL.
Direct bilirubin: No interference.
Hemolysis: No interference.
Lipemia: Positive interference above 626 mg/dL of triglycerides.

For a more comprehensive review of factors affecting this assay refer to the publication of Young D.S.

## MATERIAL REQUIRED BUT NOT PROVIDED

1.Basic medical analysis laboratory equipment.
2.Normal and pathological control sera.

Made in France Latest revision : www.biolabo.fr Revision : 26/07/2011

## CALIBRATION

- Standard enclosed in the Kit (vial R3) or BIOLABO-Multicalibrator REF 95015 traceable to SRM 965a.
- Or any calibrator traceable to a reference method or material.

The calibration frequency depends on proper instrument functions and on the preservation of the reagent.

It is recommended to calibrate in the following cases:

1. When changing batch of reagent.
2. After maintenance operations on the instrument.
3. If control values are out of range, even after using a new vial of fresh control.

## QUALITY CONTROL

- BIOLABO EXATROL-N (level I) REF 95010.
- BIOLABO EXATROL-P (level II) REF 95011.
- Assayed control referring to the same method.
- External quality control program.

It is recommended to control in the following cases:

- At least once a run.
- At least once within 24 hours.
- When changing vial of reagent.
- After maintenance operations on the instrument.

If control is out of range, apply following actions:

1. Repeat the test with the same control.
2. If control is still out of range, prepare a fresh control and repeat the test.
3. If control is still out of range, use a new vial of calibrator or a fresh calibrator and repeat the test.
4. If control is still out of range, calibrate with a new vial of reagent.
5. If control is still out of range, please contact BIOLABO technical support or your local Agent.

## EXPECTED VALUES (2)

| In serum or plasma : | mg/dL | [mmol/L] |
|---|---|---|
| Newborn, 1 day | 40-60 | [ 2.2-3.3 ] |
| Newborn > 1 day | 50-80 | [ 2.8-4.4 ] |
| Children | 60-100 | [ 3.3-5.6 ] |
| Adult | 74-106 | [ 4.1-5.9 ] |
| 60-90 years | 82-115 | [ 4.6-6.4 ] |
| > 90 years | 75-121 | [ 4.2-6.7 ] |
| **In CSF :** | **mg/dL** | **[mmol/L]** |
| Infant, Child | 60-80 | [ 3.3-4.4 ] |
| Adult | 40-70 | [ 2.2-3.9 ] |

**In 24 h urines :** 1-15 mg/dL [0.1-0.8 mmol/L]
< 0.5 g/24 hours [<2.78 mmol/24 hours]

Each laboratory should establish its own normal ranges for the population that it serves.

## PERFORMANCES

| *Within run N = 30* | *Normal level* | *High level* |
|---|---|---|
| **Mean mg/dL** | 81 | 269 |
| **S.D. mg/dL** | 1.05 | 1.80 |
| **C.V. %** | 1.3 | 0.67 |

| *Between run N = 60* | *Normal level* | *High level* |
|---|---|---|
| **Mean mg/dL** | 81 | 284 |
| **S.D. mg/dL** | 0.97 | 3.01 |
| **C.V. %** | 1.2 | 1.06 |

Detection limit: approximately 10 mg/dL.
Sensitivity for 100 mg/dL: approximately 0.420 Abs at 500 nm.
Comparison with a commercially available reagent :
$y = 0.969\ x + 1.33$ $r = 0.9984$

## LINEARITY

The reaction is linear up to at least 500 mg/dL (28 mmol/L).

Above, dilute the specimen with saline solution and re-assay taking into account dilution factor to calculate the result. Linearity limit depends on specimen/reagent ratio.

## MANUAL PROCEDURE

Let stand reagents and specimens at room temperature.

| Pipette into well identified test tubes : | Blank | Standard | Assay |
|---|---|---|---|
| **Reagent** | 1 mL | 1 mL | 1 mL |
| **Demineralised water** | 10 µL | | |
| **Standard** | | 10 µL | |
| **Specimen** | | | 10 µL |

Mix. Let stand for 10 minutes at 37°C or 20 minutes at room temperature.
Read absorbance at 500 nm (460-560) against reagent blank.
Coloration is stable for 15-20 minutes at 37°C, and then slowly decreases.

**Note**: Specific procedures are available upon request for automated instruments. Please contact BIOLABO technical support.

## CALCULATION

Calculate the result as follows:

$$\text{Result} = \frac{\text{Abs (Assay)}}{\text{Abs (Standard)}} \times \text{Standard concentration}$$

## REFERENCES


(1) *TIETZ Textbook of clinical chemistry. 3rd Ed. C.A. Burtis. E.R. Ashwood. W.B. Saunders (1999) p. 750-785.*
(2) *Clinical Guide to Laboratory Test, 4th Ed., N.W. Tietz (2006) p. 444-455*
(3) *YOUNG D.S.. Effect of Drugs on Clinical laboratory Tests. 4th Ed. (1995) p. 3-274 to 3-294.*
(4) *FARRANCE I. Clin. Biochem. reviews (1987). 8. p.55 to 68.*
(5) *TRINDER P.. Ann. Clin. Biochem.(1969). 6. p.24-27.*
(6) *BERNARD S., Biochimie clinique, 2ème éd.,Edition Maloine (1989), p.165-167*
(7) *SRM : Standard Reference Material ®*


Manufacturer | Use by | IVD In vitro diagnostic | Temperature limitation | REF Catalogue number | See insert | LOT Batch number | Store away from light | sufficient for | → dilute with

Made in France | Latest revision : www.biolabo.fr | Revision : 26/07/2011

**Lampiran 5. Hasil Pemeriksaan Kadar Nikotin dan Glukosa Darah**

| NO | Kode Sampel | Usia (Tahun) | Kadar Nikotin (mg/L) | Kadar Glukosa Darah (mg/dL) |
|---|---|---|---|---|
| 1 | Sp01 | 22 | Tidak Terdeteksi | 75 |
| 2 | Sp02 | 30 | Tidak Terdeteksi | 81 |
| 3 | Sp03 | 24 | 0,4644 | 107 |
| 4 | Sp04 | 30 | 0,4399 | 97 |
| 5 | Sp05 | 22 | 0,3347 | 93 |
| 6 | Sp06 | 21 | Tidak Terdeteksi | 80 |
| 7 | Sp07 | 21 | Tidak Terdeteksi | 73 |
| 8 | Sp08 | 22 | Tidak Terdeteksi | 100 |
| 9 | Sp09 | 29 | Tidak Terdeteksi | 77 |
| 10 | Sp10 | 22 | Tidak Terdeteksi | 91 |
| 11 | Sp11 | 30 | Tidak Terdeteksi | 93 |
| 12 | Sp12 | 24 | Tidak Terdeteksi | 73 |
| 13 | Sp13 | 23 | Tidak Terdeteksi | 76 |
| 14 | Sp14 | 21 | Tidak Terdeteksi | 76 |
| 15 | Sp15 | 23 | Tidak Terdeteksi | 88 |
| 16 | Sp16 | 30 | 0,2592 | 117 |
| 17 | Sp17 | 30 | 0,0945 | 74 |
| 18 | Sp18 | 29 | 0,2914 | 101 |
| 19 | Sp19 | 21 | 0,0724 | 91 |
| 20 | Sp20 | 30 | 0,1661 | 98 |
| 21 | Sp21 | 21 | Tidak Terdeteksi | 85 |

**Lampiran 6. Hasil Uji Statistik Data Penelitian**

Hasil Uji Statistik data penelitian menggunakan SPSS

**1. Uji Statistik Gambaran Kadar Nikotin dan Glukosa Darah Perokok Aktif**

## Frequencies

**Statistics**

| | | Kadar Nikotin | Kadar Glukosa Darah |
|---|---|---|---|
| N | Valid | 21 | 21 |
| | Missing | 0 | 0 |
| Mean | | ,101076 | 87,90 |
| Std. Error of Mean | | ,0345212 | 2,721 |
| Std. Deviation | | ,1581959 | 12,470 |
| Variance | | ,025 | 155,490 |
| Range | | ,4644 | 44 |
| Minimum | | ,0000 | 73 |
| Maximum | | ,4644 | 117 |

## Frequency Table

**Kadar Nikotin**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | ,0000 | 13 | 61,9 | 61,9 | 61,9 |
| | ,0724 | 1 | 4,8 | 4,8 | 66,7 |
| | ,0945 | 1 | 4,8 | 4,8 | 71,4 |
| | ,1661 | 1 | 4,8 | 4,8 | 76,2 |
| | ,2592 | 1 | 4,8 | 4,8 | 81,0 |
| | ,2914 | 1 | 4,8 | 4,8 | 85,7 |
| | ,3347 | 1 | 4,8 | 4,8 | 90,5 |
| | ,4399 | 1 | 4,8 | 4,8 | 95,2 |
| | ,4644 | 1 | 4,8 | 4,8 | 100,0 |
| | Total | 21 | 100,0 | 100,0 | |

**Kadar Glukosa Darah**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 73 | 2 | 9,5 | 9,5 | 9,5 |
| | 74 | 1 | 4,8 | 4,8 | 14,3 |
| | 75 | 1 | 4,8 | 4,8 | 19,0 |
| | 76 | 2 | 9,5 | 9,5 | 28,6 |
| | 77 | 1 | 4,8 | 4,8 | 33,3 |
| | 80 | 1 | 4,8 | 4,8 | 38,1 |
| | 81 | 1 | 4,8 | 4,8 | 42,9 |
| | 85 | 1 | 4,8 | 4,8 | 47,6 |
| | 88 | 1 | 4,8 | 4,8 | 52,4 |
| | 91 | 2 | 9,5 | 9,5 | 61,9 |
| | 93 | 2 | 9,5 | 9,5 | 71,4 |
| | 97 | 1 | 4,8 | 4,8 | 76,2 |
| | 98 | 1 | 4,8 | 4,8 | 81,0 |
| | 100 | 1 | 4,8 | 4,8 | 85,7 |
| | 101 | 1 | 4,8 | 4,8 | 90,5 |
| | 107 | 1 | 4,8 | 4,8 | 95,2 |
| | 117 | 1 | 4,8 | 4,8 | 100,0 |
| | Total | 21 | 100,0 | 100,0 | |

**Case Processing Summary**

| | Cases | | | | | |
|---|---|---|---|---|---|---|
| | Valid | | Missing | | Total | |
| | N | Percent | N | Percent | N | Percent |
| Kadar Nikotin * Kadar Glukosa Darah | 21 | 100,0% | 0 | 0,0% | 21 | 100,0% |

**Kadar Nikotin * Kadar Glukosa Crosstabulation**

Count

| | | Kadar Glukosa Darah | | | Total |
|---|---|---|---|---|---|
| | | Rendah | Normal | Tinggi | |
| Kadar Nikotin | Tidak Terdeteksi | 2 | 11 | 0 | 13 |
| | Terdeteksi | 0 | 6 | 2 | 8 |
| Total | | 2 | 17 | 2 | 21 |

## 2. Korelasi Kadar Nikotin dan Glukosa Darah Perokok Aktif

**Correlations**

| | | | Kadar Nikotin | Kadar Glukosa |
|---|---|---|---|---|
| Spearman's rho | Kadar Nikotin | Correlation Coefficient | 1,000 | ,557** |
| | | Sig. (2-tailed) | . | ,009 |
| | | N | 21 | 21 |
| | Kadar Glukosa | Correlation Coefficient | ,557** | 1,000 |
| | | Sig. (2-tailed) | ,009 | . |
| | | N | 21 | 21 |

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

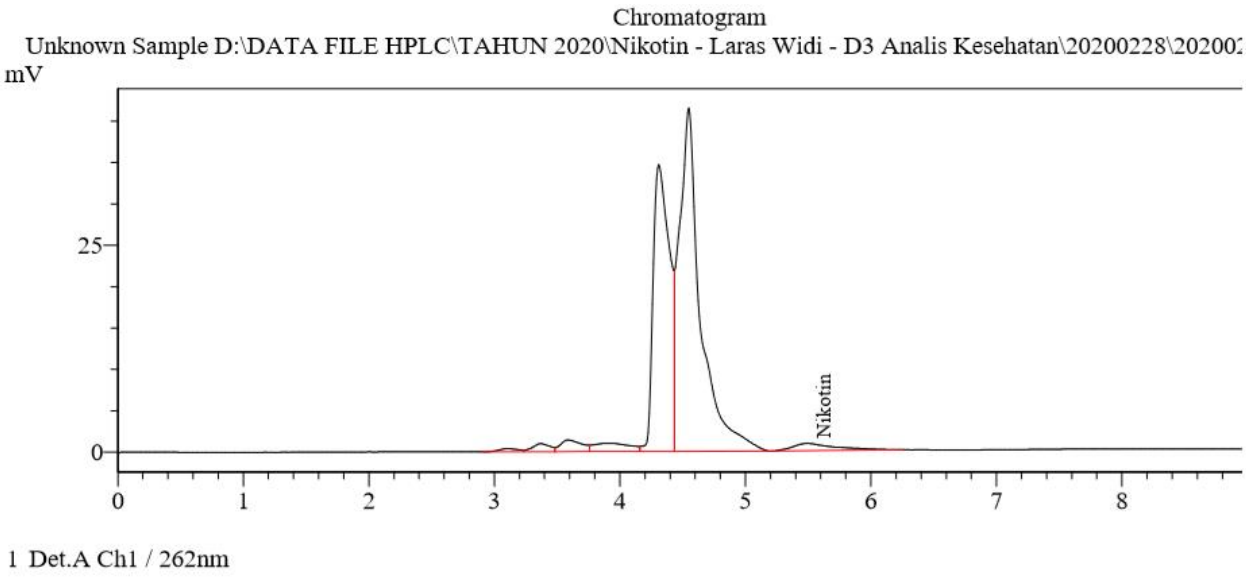
**Lampiran 7. Kromatogram Nikotin Sampel 01 Adisi 1 ppm dengan Fasa Gerak Air : Metanol : Buffer Asetat 0,1M pH4 : Asetonitril (65:13:20:2) Laju alir 1mL/menit**

## POLITEKNIK KESEHATAN BANDUNG
## UNIT LABORATORIUM - LABORATORIUM TERPADU

D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan

| | |
|---|---|
| Acquired by | : Widya |
| Sample Name | : Sampel |
| Sample ID | : 01 |
| Injection Volume | : 20 mikron |
| Data File Name | : 20200228-19.lcd |
| Method File Name | : OKA20200221.lcm |
| Batch File Name | : 20200228.lcb |
| Report File Name | : Default.lcr |

**<Chromatogram>**




Peak Table

| Name | Ret. Time | Area | Area % | Resolution | Tailing Factor | Theoretical Plate# | k' |
|---|---|---|---|---|---|---|---|
| Nikotin | 5.486 | 21654 | 2.337 | 2.198 | 1.842 | 1558.059 | 0.769 |

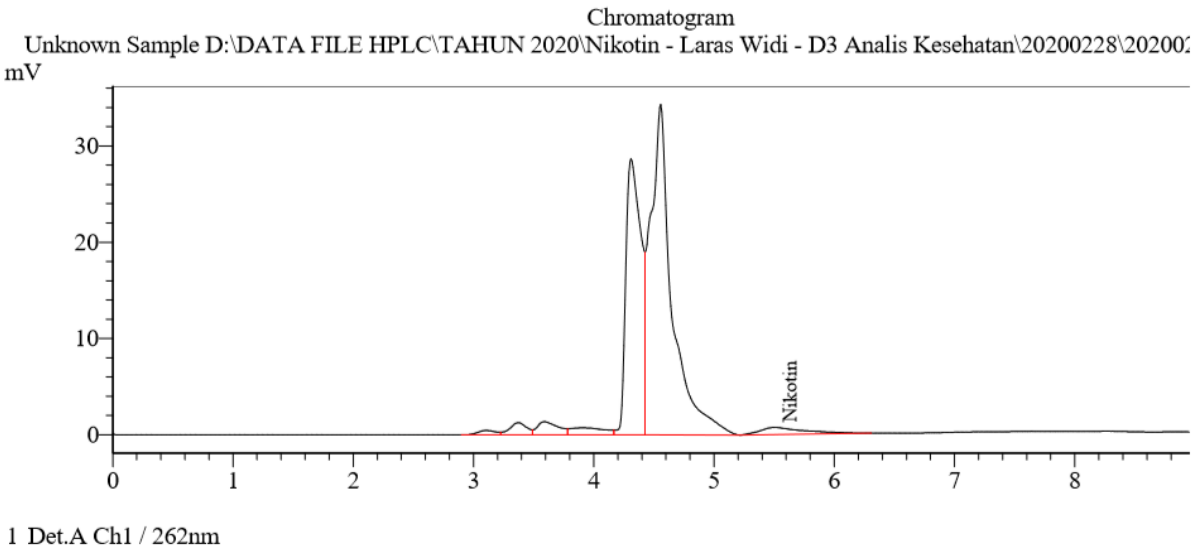
**Lampiran 8. Kromatogram Nikotin Sampel 02 Adisi 1 ppm dengan Fasa Gerak Air : Metanol : Buffer Asetat 0,1M pH4 : Asetonitril (65:13:20:2) Laju alir 1mL/menit**

## POLITEKNIK KESEHATAN BANDUNG
## UNIT LABORATORIUM - LABORATORIUM TERPADU

D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan

| | |
|---|---|
| Acquired by | : Widya |
| Sample Name | : Sampel |
| Sample ID | : 02 |
| Injection Volume | : 20 mikron |
| Data File Name | : 20200228-20.lcd |
| Method File Name | : OKA20200221.lcm |
| Batch File Name | : 20200228.lcb |
| Report File Name | : Default.lcr |

**<Chromatogram>**




Peak Table

| Name | Ret. Time | Area | Area % | Resolution | Tailing Factor | Theoretical Plate# | k' |
|---|---|---|---|---|---|---|---|
| Nikotin | 5.497 | 19074 | 2.249 | 1.745 | 1.871 | 1264.572 | 0.772 |

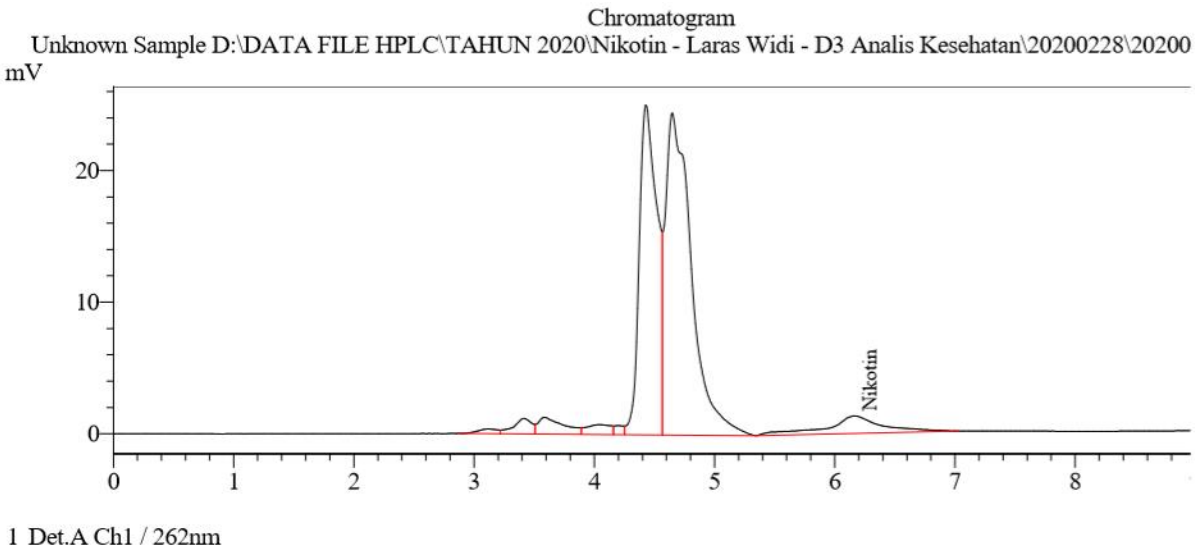
**Lampiran 9. Kromatogram Nikotin Sampel 03 Adisi 1 ppm dengan Fasa Gerak Air : Metanol : Buffer Asetat 0,1M pH4 : Asetonitril (65:13:20:2) Laju alir 1mL/menit**

## POLITEKNIK KESEHATAN BANDUNG
## UNIT LABORATORIUM - LABORATORIUM TERPADU

D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan

| | |
|---|---|
| Acquired by | : Widya |
| Sample Name | : Sampel |
| Sample ID | : 03 |
| Injection Volume | : 20 mikron |
| Data File Name | : 20200228-5.lcd |
| Method File Name | : OKA20200221.lcm |
| Batch File Name | : 20200228.lcb |
| Report File Name | : Default.lcr |

**<Chromatogram>**




Peak Table

| Name | Ret. Time | Area | Area % | Resolution | Tailing Factor | Theoretical Plate# | k' |
|---|---|---|---|---|---|---|---|
| Nikotin | 6.159 | 42338 | 5.283 | 3.074 | 0.973 | 1903.585 | 0.979 |

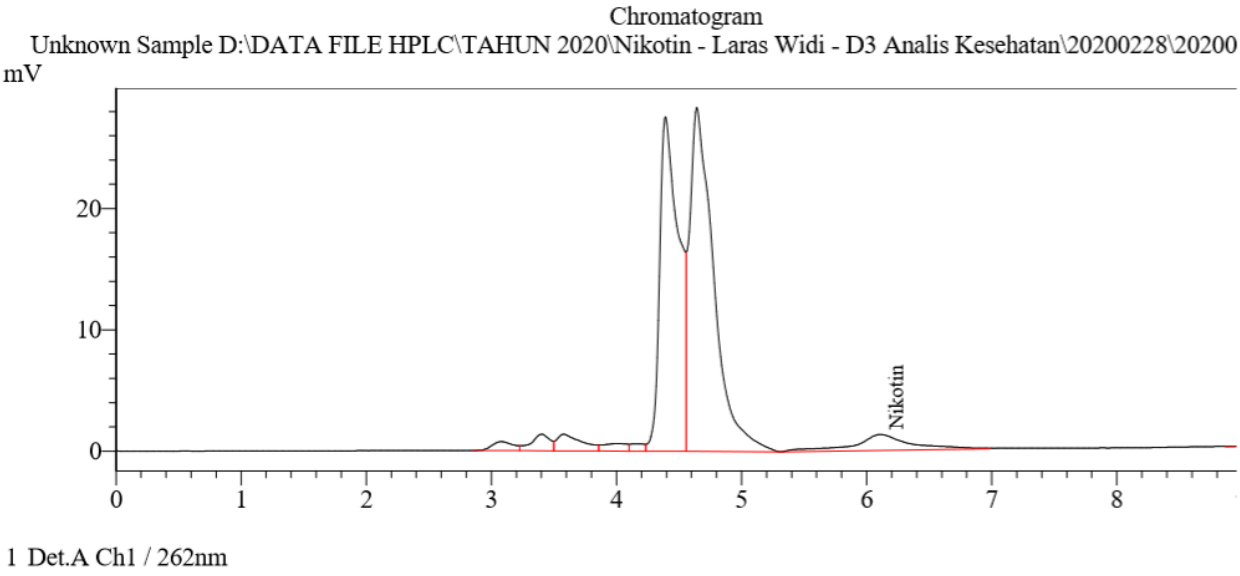
**Lampiran 10. Kromatogram Nikotin Sampel 04 Adisi 1 ppm dengan Fasa Gerak Air : Metanol : Buffer Asetat 0,1M pH4 : Asetonitril (65:13:20:2) Laju alir 1mL/menit**

## POLITEKNIK KESEHATAN BANDUNG
## UNIT LABORATORIUM - LABORATORIUM TERPADU

D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan

| | |
|---|---|
| Acquired by | : Widya |
| Sample Name | : Sampel |
| Sample ID | : 04 |
| Injection Volume | : 20 mikron |
| Data File Name | : 20200228-6.lcd |
| Method File Name | : OKA20200221.lcm |
| Batch File Name | : 20200228.lcb |
| Report File Name | : Default.lcr |

**<Chromatogram>**




Peak Table

| Name | Ret. Time | Area | Area % | Resolution | Tailing Factor | Theoretical Plate# | k' |
|---|---|---|---|---|---|---|---|
| Nikotin | 6.103 | 41540 | 4.957 | 3.023 | 1.050 | 1814.035 | 0.985 |

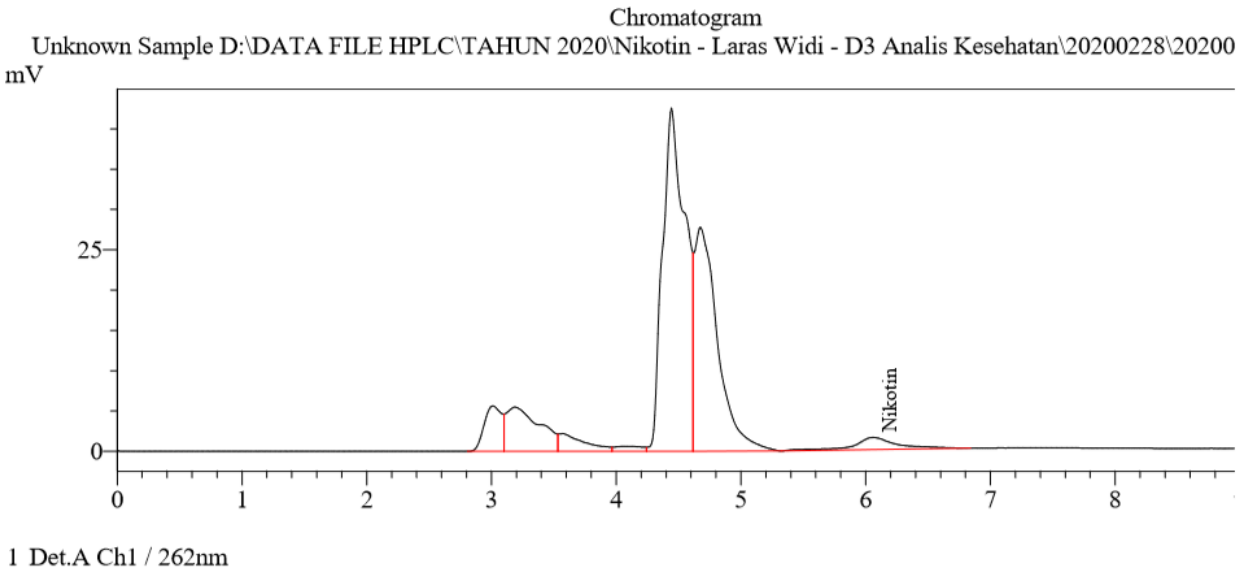
**Lampiran 11. Kromatogram Nikotin Sampel 05 Adisi 1 ppm dengan Fasa Gerak Air : Metanol : Buffer Asetat 0,1M pH4 : Asetonitril (65:13:20:2) Laju alir 1mL/menit**

## POLITEKNIK KESEHATAN BANDUNG
## UNIT LABORATORIUM - LABORATORIUM TERPADU

D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan

| | |
|---|---|
| Acquired by | : Widya |
| Sample Name | : Sampel |
| Sample ID | : 05 |
| Injection Volume | : 20 mikron |
| Data File Name | : 20200228-7.lcd |
| Method File Name | : OKA20200221.lcm |
| Batch File Name | : 20200228.lcb |
| Report File Name | : Default.lcr |

**<Chromatogram>**




Peak Table

| Name | Ret. Time | Area | Area % | Resolution | Tailing Factor | Theoretical Plate# | k' |
|---|---|---|---|---|---|---|---|
| Nikotin | 6.056 | 38104 | 3.127 | 2.435 | 0.974 | 2414.700 | 1.014 |

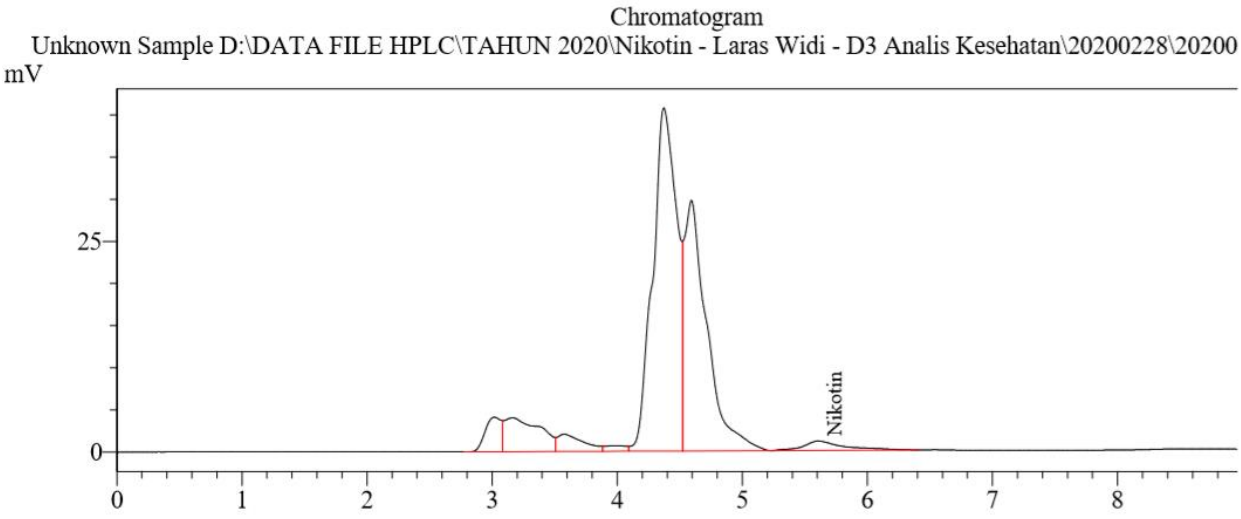
**Lampiran 12. Kromatogram Nikotin Sampel 06 Adisi 1 ppm dengan Fasa Gerak Air : Metanol : Buffer Asetat 0,1M pH4 : Asetonitril (65:13:20:2) Laju alir 1mL/menit**

## POLITEKNIK KESEHATAN BANDUNG
## UNIT LABORATORIUM - LABORATORIUM TERPADU

D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan

| | |
|---|---|
| Acquired by | : Widya |
| Sample Name | : Sampel |
| Sample ID | : 06 |
| Injection Volume | : 20 mikron |
| Data File Name | : 20200228-8.lcd |
| Method File Name | : OKA20200221.lcm |
| Batch File Name | : 20200228.lcb |
| Report File Name | : Default.lcr |

**<Chromatogram>**




Peak Table

| Name | Ret. Time | Area | Area % | Resolution | Tailing Factor | Theoretical Plate# | k' |
|---|---|---|---|---|---|---|---|
| Nikotin | 5.605 | 24966 | 2.120 | 1.945 | 1.476 | 2187.276 | 0.860 |

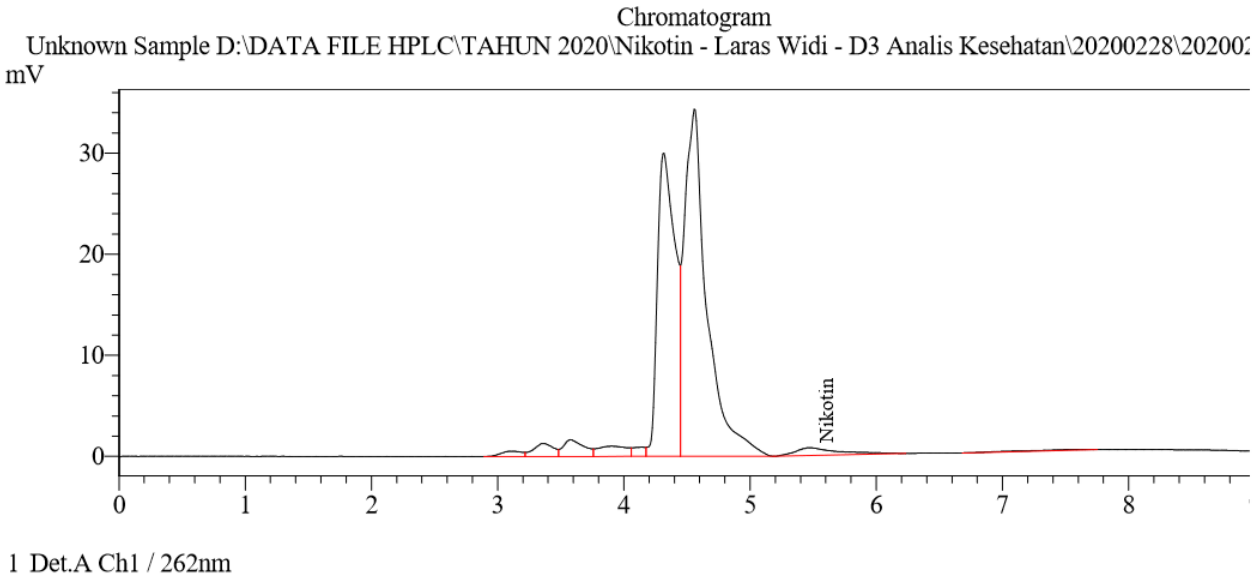
**Lampiran 13. Kromatogram Nikotin Sampel 07 Adisi 1 ppm dengan Fasa Gerak Air : Metanol : Buffer Asetat 0,1M pH4 : Asetonitril (65:13:20:2) Laju alir 1mL/menit**

## POLITEKNIK KESEHATAN BANDUNG
## UNIT LABORATORIUM - LABORATORIUM TERPADU

D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan

| | |
|---|---|
| Acquired by | : Widya |
| Sample Name | : Sampel |
| Sample ID | : 07 |
| Injection Volume | : 20 mikron |
| Data File Name | : 20200228-10.lcd |
| Method File Name | : OKA20200221.lcm |
| Batch File Name | : 20200228.lcb |
| Report File Name | : Default.lcr |

**<Chromatogram>**




Peak Table

| Name | Ret. Time | Area | Area % | Resolution | Tailing Factor | Theoretical Plate# | k' |
|---|---|---|---|---|---|---|---|
| Nikotin | 5.468 | 18264 | 2.021 | 2.091 | 1.887 | 1707.785 | 0.760 |

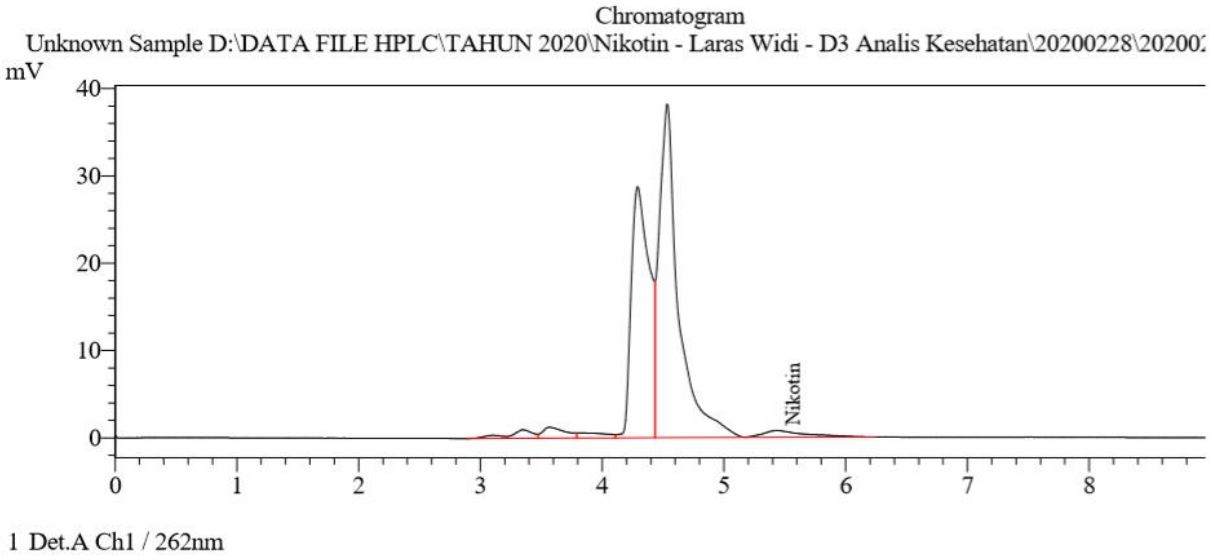
**Lampiran 14. Kromatogram Nikotin Sampel 08 Adisi 1 ppm dengan Fasa Gerak Air : Metanol : Buffer Asetat 0,1M pH4 : Asetonitril (65:13:20:2) Laju alir 1mL/menit**

## POLITEKNIK KESEHATAN BANDUNG
## UNIT LABORATORIUM - LABORATORIUM TERPADU

D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan

| | |
|---|---|
| Acquired by | : Widya |
| Sample Name | : Sampel |
| Sample ID | : 08 |
| Injection Volume | : 20 mikron |
| Data File Name | : 20200228-11.lcd |
| Method File Name | : OKA20200221.lcm |
| Batch File Name | : 20200228.lcb |
| Report File Name | : Default.lcr |

**<Chromatogram>**




Peak Table

| Name | Ret. Time | Area | Area % | Resolution | Tailing Factor | Theoretical Plate# | k' |
|---|---|---|---|---|---|---|---|
| Nikotin | 5.431 | 19157 | 2.360 | 2.149 | 1.890 | 1570.272 | 0.753 |

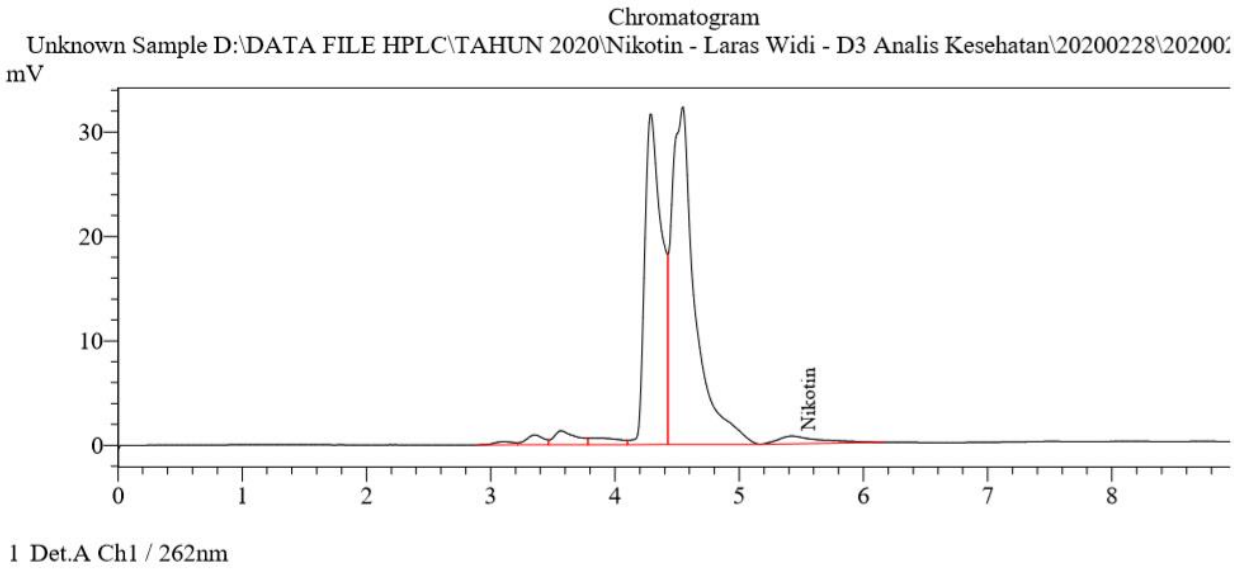
**Lampiran 15. Kromatogram Nikotin Sampel 09 Adisi 1 ppm dengan Fasa Gerak Air : Metanol : Buffer Asetat 0,1M pH4 : Asetonitril (65:13:20:2) Laju alir 1mL/menit**

## POLITEKNIK KESEHATAN BANDUNG
## UNIT LABORATORIUM - LABORATORIUM TERPADU

D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan

| | |
|---|---|
| Acquired by | : Widya |
| Sample Name | : Sampel |
| Sample ID | : 09 |
| Injection Volume | : 20 mikron |
| Data File Name | : 20200228-12.lcd |
| Method File Name | : OKA20200221.lcm |
| Batch File Name | : 20200228.lcb |
| Report File Name | : Default.lcr |

**<Chromatogram>**




Peak Table

| Name | Ret. Time | Area | Area % | Resolution | Tailing Factor | Theoretical Plate# | k' |
|---|---|---|---|---|---|---|---|
| Nikotin | 5.420 | 17174 | 2.037 | 2.030 | 1.997 | 1753.717 | 0.750 |

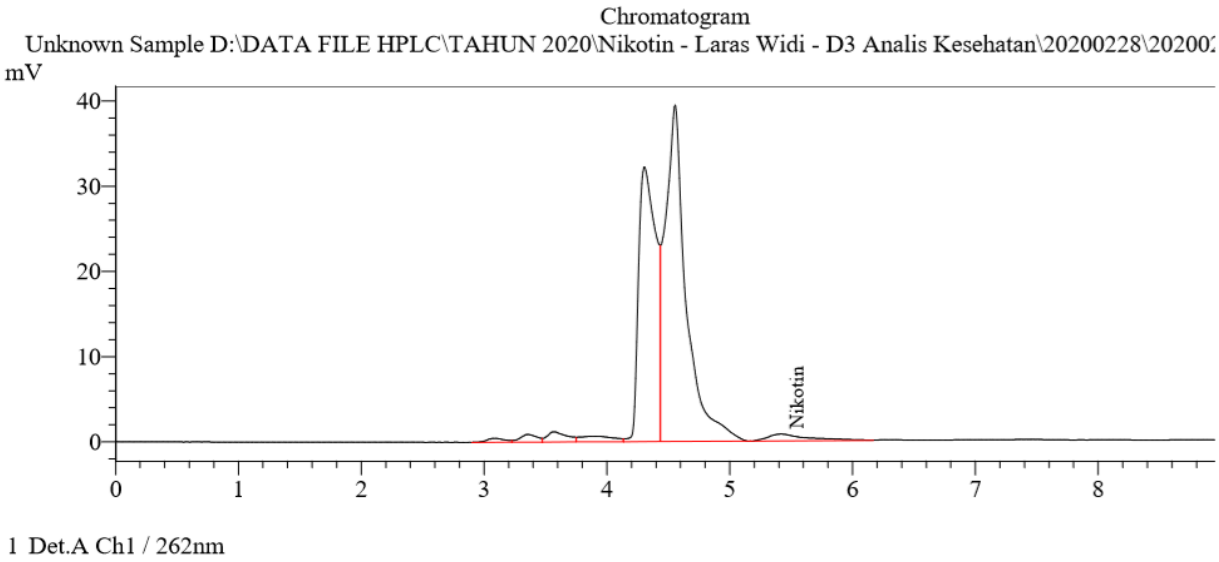
**Lampiran 16. Kromatogram Nikotin Sampel 10 Adisi 1 ppm dengan Fasa Gerak Air : Metanol : Buffer Asetat 0,1M pH4 : Asetonitril (65:13:20:2) Laju alir 1mL/menit**

## POLITEKNIK KESEHATAN BANDUNG
## UNIT LABORATORIUM - LABORATORIUM TERPADU

D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan

| | |
|---|---|
| Acquired by | : Widya |
| Sample Name | : Sampel |
| Sample ID | : 10 |
| Injection Volume | : 20 mikron |
| Data File Name | : 20200228-13.lcd |
| Method File Name | : OKA20200221.lcm |
| Batch File Name | : 20200228.lcb |
| Report File Name | : Default.lcr |

**<Chromatogram>**




Peak Table

| Name | Ret. Time | Area | Area % | Resolution | Tailing Factor | Theoretical Plate# | k' |
|---|---|---|---|---|---|---|---|
| Nikotin | 5.410 | 19308 | 2.097 | 2.128 | 0.000 | 2011.973 | 0.757 |

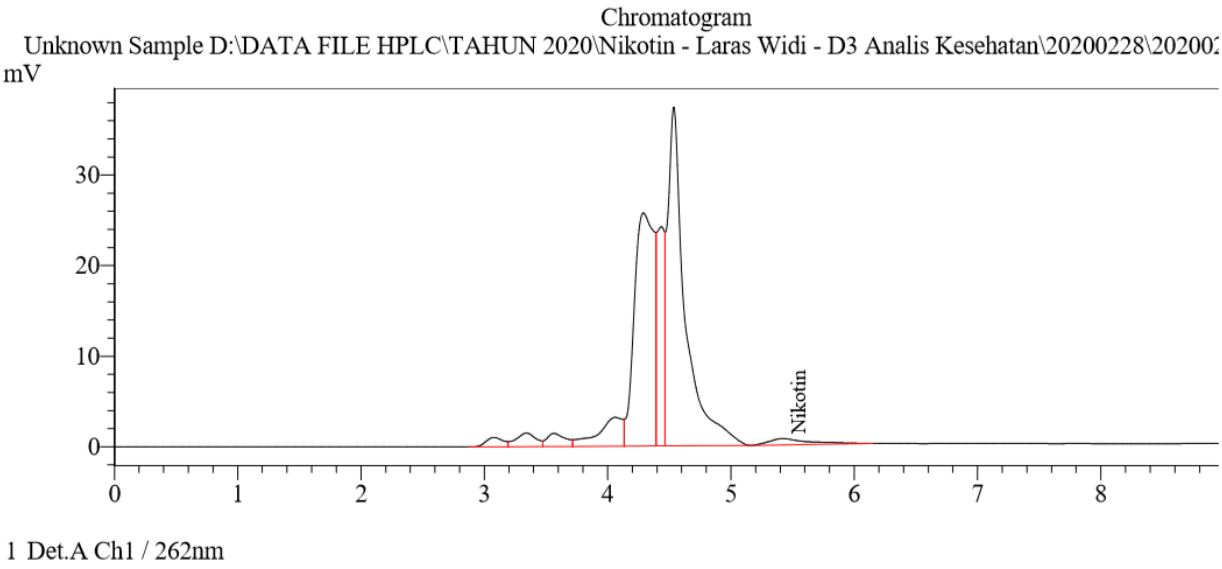
**Lampiran 17. Kromatogram Nikotin Sampel 11 Adisi 1 ppm dengan Fasa Gerak Air : Metanol : Buffer Asetat 0,1M pH4 : Asetonitril (65:13:20:2) Laju alir 1mL/menit**

## POLITEKNIK KESEHATAN BANDUNG
## UNIT LABORATORIUM - LABORATORIUM TERPADU

D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan

| | |
|---|---|
| Acquired by | : Widya |
| Sample Name | : Sampel |
| Sample ID | : 11 |
| Injection Volume | : 20 mikron |
| Data File Name | : 20200228-14.lcd |
| Method File Name | : OKA20200221.lcm |
| Batch File Name | : 20200228.lcb |
| Report File Name | : Default.lcr |

**<Chromatogram>**




Peak Table

| Name | Ret. Time | Area | Area % | Resolution | Tailing Factor | Theoretical Plate# | k' |
|---|---|---|---|---|---|---|---|
| Nikotin | 5.416 | 15884 | 1.718 | 2.326 | 1.940 | 1903.444 | 0.763 |

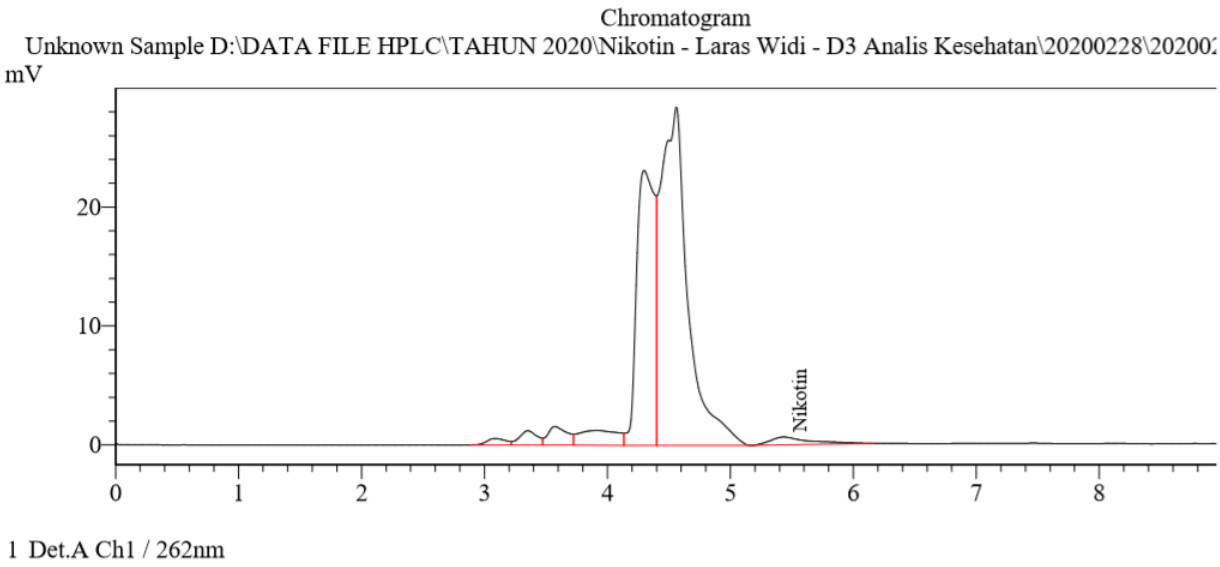
**Lampiran 18. Kromatogram Nikotin Sampel 12 Adisi 1 ppm dengan Fasa Gerak Air : Metanol : Buffer Asetat 0,1M pH4 : Asetonitril (65:13:20:2) Laju alir 1mL/menit**

## POLITEKNIK KESEHATAN BANDUNG
## UNIT LABORATORIUM - LABORATORIUM TERPADU

D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan

| | |
|---|---|
| Acquired by | : Widya |
| Sample Name | : Sampel |
| Sample ID | : 12 |
| Injection Volume | : 20 mikron |
| Data File Name | : 20200228-15.lcd |
| Method File Name | : OKA20200221.lcm |
| Batch File Name | : 20200228.lcb |
| Report File Name | : Default.lcr |

**<Chromatogram>**




Peak Table

| Name | Ret. Time | Area | Area % | Resolution | Tailing Factor | Theoretical Plate# | k' |
|---|---|---|---|---|---|---|---|
| Nikotin | 5.428 | 15624 | 1.930 | 1.541 | 1.943 | 1778.003 | 0.761 |

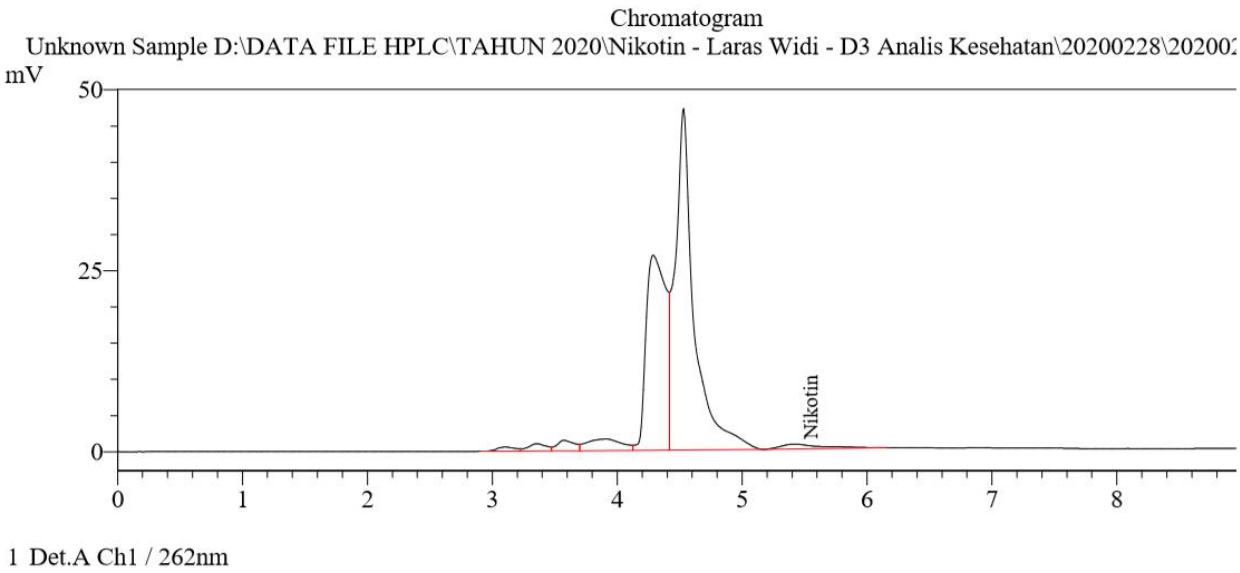
**Lampiran 19. Kromatogram Nikotin Sampel 13 Adisi 1 ppm dengan Fasa Gerak Air : Metanol : Buffer Asetat 0,1M pH4 : Asetonitril (65:13:20:2) Laju alir 1mL/menit**

## POLITEKNIK KESEHATAN BANDUNG
## UNIT LABORATORIUM - LABORATORIUM TERPADU

D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan

| | |
|---|---|
| Acquired by | : Widya |
| Sample Name | : Sampel |
| Sample ID | : 13 |
| Injection Volume | : 20 mikron |
| Data File Name | : 20200228-16.lcd |
| Method File Name | : OKA20200221.lcm |
| Batch File Name | : 20200228.lcb |
| Report File Name | : Default.lcr |

**<Chromatogram>**




Peak Table

| Name | Ret. Time | Area | Area % | Resolution | Tailing Factor | Theoretical Plate# | k' |
|---|---|---|---|---|---|---|---|
| Nikotin | 5.414 | 15874 | 1.701 | 2.411 | 2.041 | 1889.879 | 0.748 |

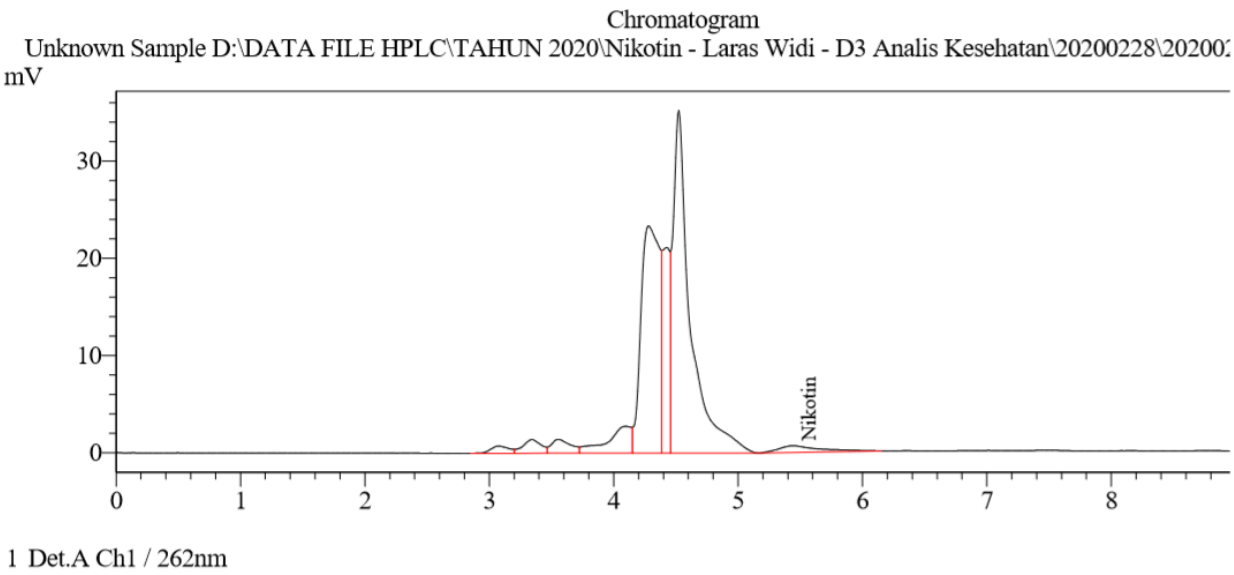
**Lampiran 20. Kromatogram Nikotin Sampel 14 Adisi 1 ppm dengan Fasa Gerak Air : Metanol : Buffer Asetat 0,1M pH4 : Asetonitril (65:13:20:2) Laju alir 1mL/menit**

## POLITEKNIK KESEHATAN BANDUNG
## UNIT LABORATORIUM - LABORATORIUM TERPADU

D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan

| | |
|---|---|
| Acquired by | : Widya |
| Sample Name | : Sampel |
| Sample ID | : 14 |
| Injection Volume | : 20 mikron |
| Data File Name | : 20200228-17.lcd |
| Method File Name | : OKA20200221.lcm |
| Batch File Name | : 20200228.lcb |
| Report File Name | : Default.lcr |

**<Chromatogram>**




Peak Table

| Name | Ret. Time | Area | Area % | Resolution | Tailing Factor | Theoretical Plate# | k' |
|---|---|---|---|---|---|---|---|
| Nikotin | 5.436 | 16140 | 1.945 | 2.364 | 1.807 | 1689.861 | 0.769 |

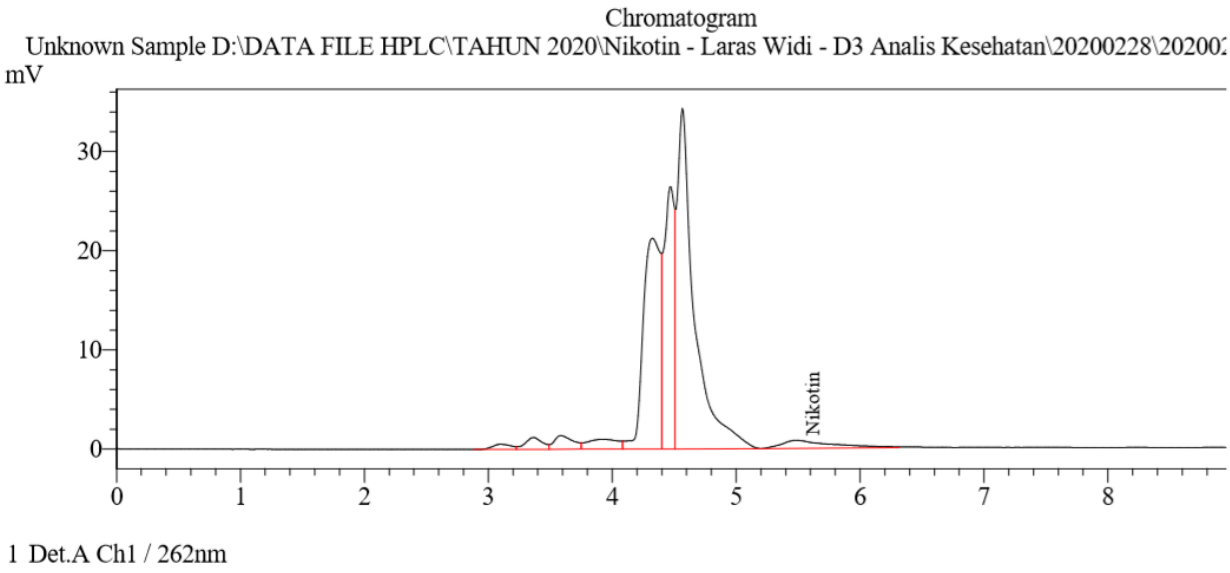
**Lampiran 21. Kromatogram Nikotin Sampel 15 Adisi 1 ppm dengan Fasa Gerak Air : Metanol : Buffer Asetat 0,1M pH4 : Asetonitril (65:13:20:2) Laju alir 1mL/menit**

## POLITEKNIK KESEHATAN BANDUNG
## UNIT LABORATORIUM - LABORATORIUM TERPADU

D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan

| | |
|---|---|
| Acquired by | : Widya |
| Sample Name | : Sampel |
| Sample ID | : 15 |
| Injection Volume | : 20 mikron |
| Data File Name | : 20200228-18.lcd |
| Method File Name | : OKA20200221.lcm |
| Batch File Name | : 20200228.lcb |
| Report File Name | : Default.lcr |

**<Chromatogram>**




Peak Table

| Name | Ret. Time | Area | Area % | Resolution | Tailing Factor | Theoretical Plate# | k' |
|---|---|---|---|---|---|---|---|
| Nikotin | 5.482 | 23052 | 2.863 | 1.676 | 0.000 | 750.127 | 0.770 |

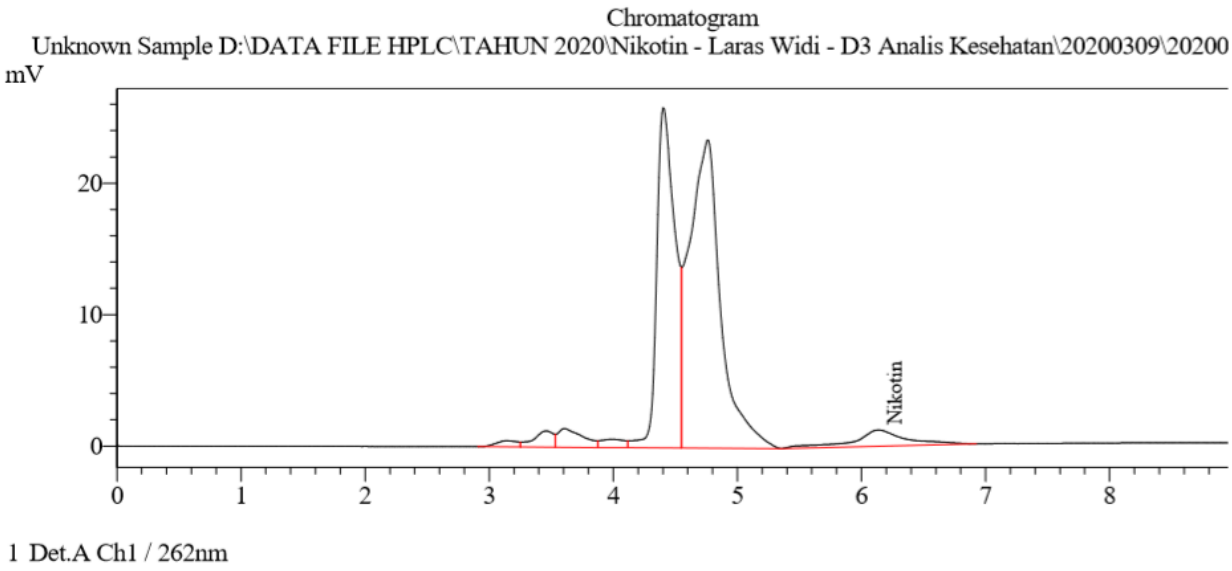
**Lampiran 22. Kromatogram Nikotin Sampel 16 Adisi 1 ppm dengan Fasa Gerak Air : Metanol : Buffer Asetat 0,1M pH4 : Asetonitril (65:13:20:2) Laju alir 1mL/menit**

## POLITEKNIK KESEHATAN BANDUNG
## UNIT LABORATORIUM - LABORATORIUM TERPADU

D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan

| | |
|---|---|
| Acquired by | : Widya |
| Sample Name | : Sampel |
| Sample ID | : 16 |
| Injection Volume | : 20 mikron |
| Data File Name | : 20200309-2.lcd |
| Method File Name | : OKA20200221.lcm |
| Batch File Name | : 20200309.lcb |
| Report File Name | : Default.lcr |

**<Chromatogram>**




Peak Table

| Name | Ret. Time | Area | Area % | Resolution | Tailing Factor | Theoretical Plate# | k' |
|---|---|---|---|---|---|---|---|
| Nikotin | 6.134 | 35640 | 4.484 | 2.572 | 0.956 | 1984.092 | 0.956 |

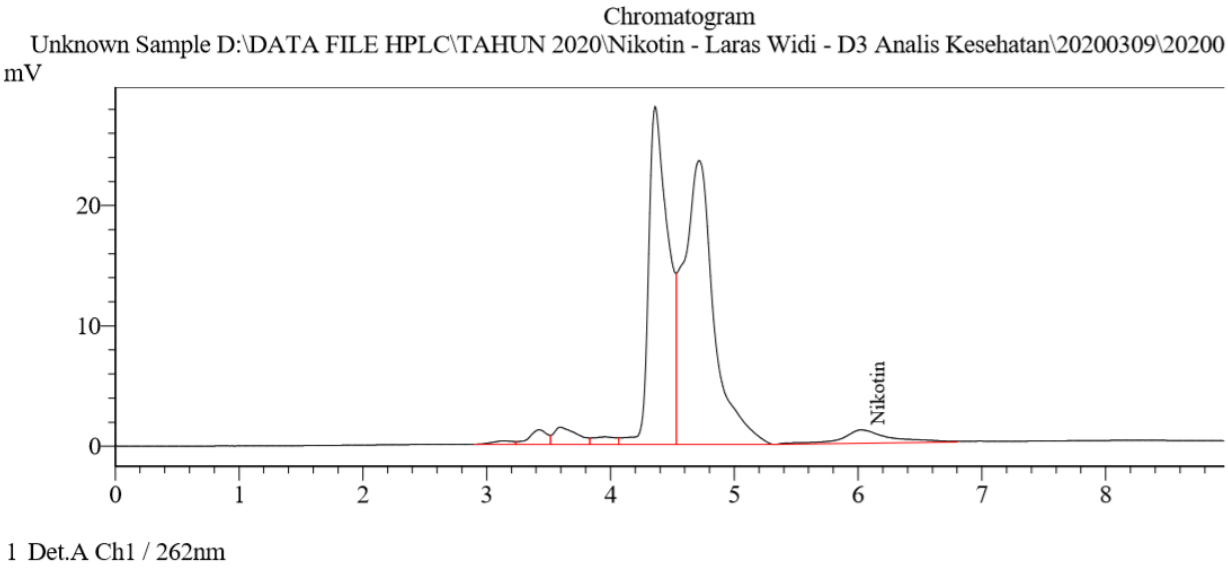
**Lampiran 23. Kromatogram Nikotin Sampel 17 Adisi 1 ppm dengan Fasa Gerak Air : Metanol : Buffer Asetat 0,1M pH4 : Asetonitril (65:13:20:2) Laju alir 1mL/menit**

## POLITEKNIK KESEHATAN BANDUNG
## UNIT LABORATORIUM - LABORATORIUM TERPADU

D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan

| | |
|---|---|
| Acquired by | : Widya |
| Sample Name | : Sampel |
| Sample ID | : 17 |
| Injection Volume | : 20 mikron |
| Data File Name | : 20200309-3.lcd |
| Method File Name | : OKA20200221.lcm |
| Batch File Name | : 20200309.lcb |
| Report File Name | : Default.lcr |

**<Chromatogram>**




Peak Table

| Name | Ret. Time | Area | Area % | Resolution | Tailing Factor | Theoretical Plate# | k' |
|---|---|---|---|---|---|---|---|
| Nikotin | 6.023 | 30262 | 3.720 | 1.504 | 1.079 | 1962.958 | 0.927 |

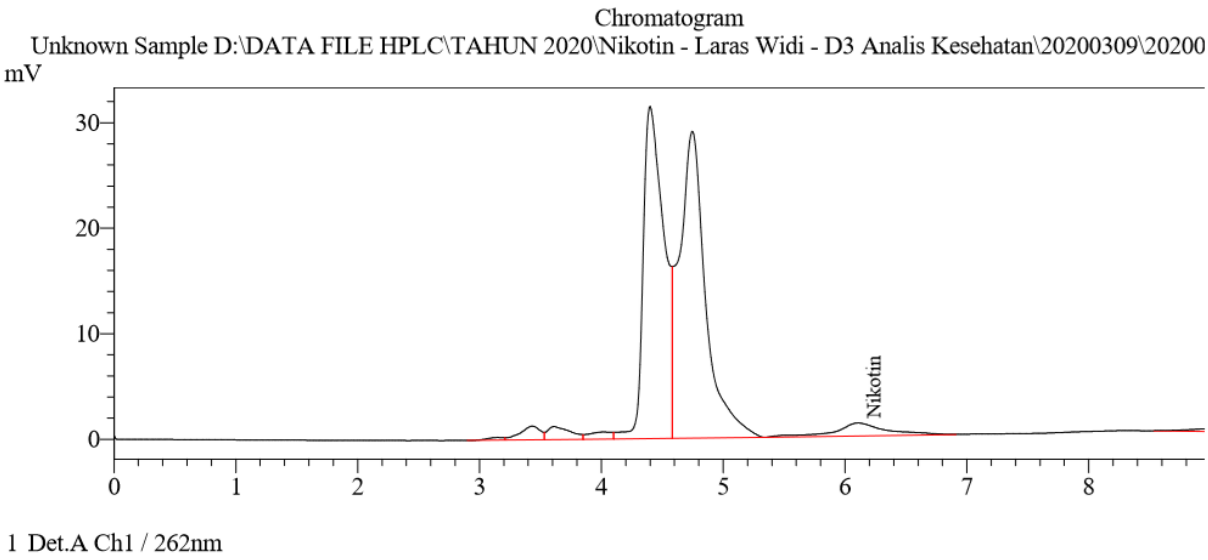
**Lampiran 24. Kromatogram Nikotin Sampel 18 Adisi 1 ppm dengan Fasa Gerak Air : Metanol : Buffer Asetat 0,1M pH4 : Asetonitril (65:13:20:2) Laju alir 1mL/menit**

## POLITEKNIK KESEHATAN BANDUNG
## UNIT LABORATORIUM - LABORATORIUM TERPADU

D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan

| | |
|---|---|
| Acquired by | : Widya |
| Sample Name | : Sampel |
| Sample ID | : 18 |
| Injection Volume | : 20 mikron |
| Data File Name | : 20200309-4.lcd |
| Method File Name | : OKA20200221.lcm |
| Batch File Name | : 20200309.lcb |
| Report File Name | : Default.lcr |

**<Chromatogram>**




Peak Table

| Name | Ret. Time | Area | Area % | Resolution | Tailing Factor | Theoretical Plate# | k' |
|---|---|---|---|---|---|---|---|
| Nikotin | 6.104 | 36691 | 3.804 | 2.862 | 0.991 | 1824.697 | 0.943 |

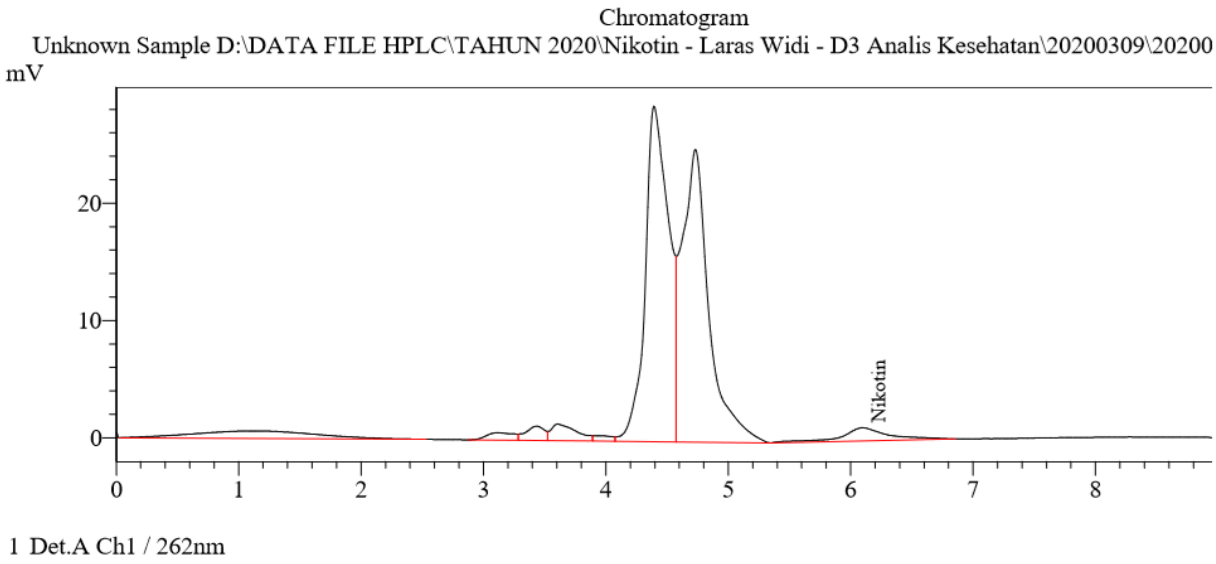
**Lampiran 25. Kromatogram Nikotin Sampel 19 Adisi 1 ppm dengan Fasa Gerak Air : Metanol : Buffer Asetat 0,1M pH4 : Asetonitril (65:13:20:2) Laju alir 1mL/menit**

## POLITEKNIK KESEHATAN BANDUNG
## UNIT LABORATORIUM - LABORATORIUM TERPADU

D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan

| | |
|---|---|
| Acquired by | : Widya |
| Sample Name | : Sampel |
| Sample ID | : 19 |
| Injection Volume | : 20 mikron |
| Data File Name | : 20200309-5.lcd |
| Method File Name | : OKA20200221.lcm |
| Batch File Name | : 20200309.lcb |
| Report File Name | : Default.lcr |

**<Chromatogram>**




Peak Table

| Name | Ret. Time | Area | Area % | Resolution | Tailing Factor | Theoretical Plate# | k' |
|---|---|---|---|---|---|---|---|
| Nikotin | 6.094 | 29542 | 3.216 | 2.803 | 0.969 | 2100.873 | 4.377 |

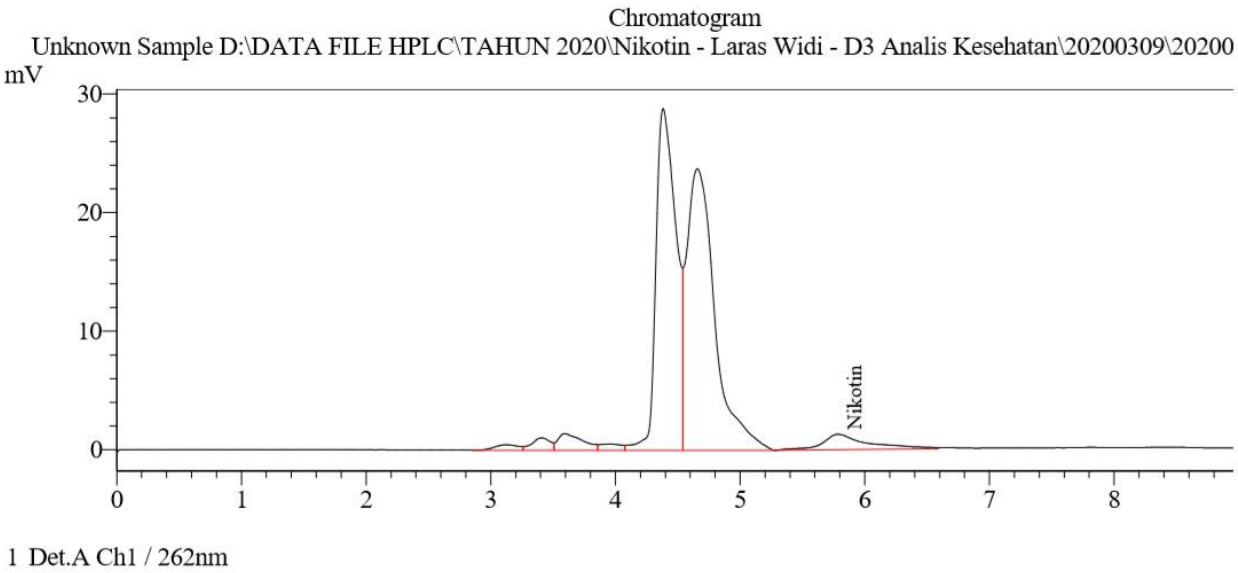
**Lampiran 26. Kromatogram Nikotin Sampel 20 Adisi 1 ppm dengan Fasa Gerak Air : Metanol : Buffer Asetat 0,1M pH4 : Asetonitril (65:13:20:2) Laju alir 1mL/menit**

## POLITEKNIK KESEHATAN BANDUNG
## UNIT LABORATORIUM - LABORATORIUM TERPADU

D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan

| | |
|---|---|
| Acquired by | : Widya |
| Sample Name | : Sampel |
| Sample ID | : 20 |
| Injection Volume | : 20 mikron |
| Data File Name | : 20200309-6.lcd |
| Method File Name | : OKA20200221.lcm |
| Batch File Name | : 20200309.lcb |
| Report File Name | : Default.lcr |

**<Chromatogram>**




Peak Table

| Name | Ret. Time | Area | Area % | Resolution | Tailing Factor | Theoretical Plate# | k' |
|---|---|---|---|---|---|---|---|
| Nikotin | 5.784 | 32600 | 3.936 | 2.383 | 0.000 | 2200.862 | 0.855 |

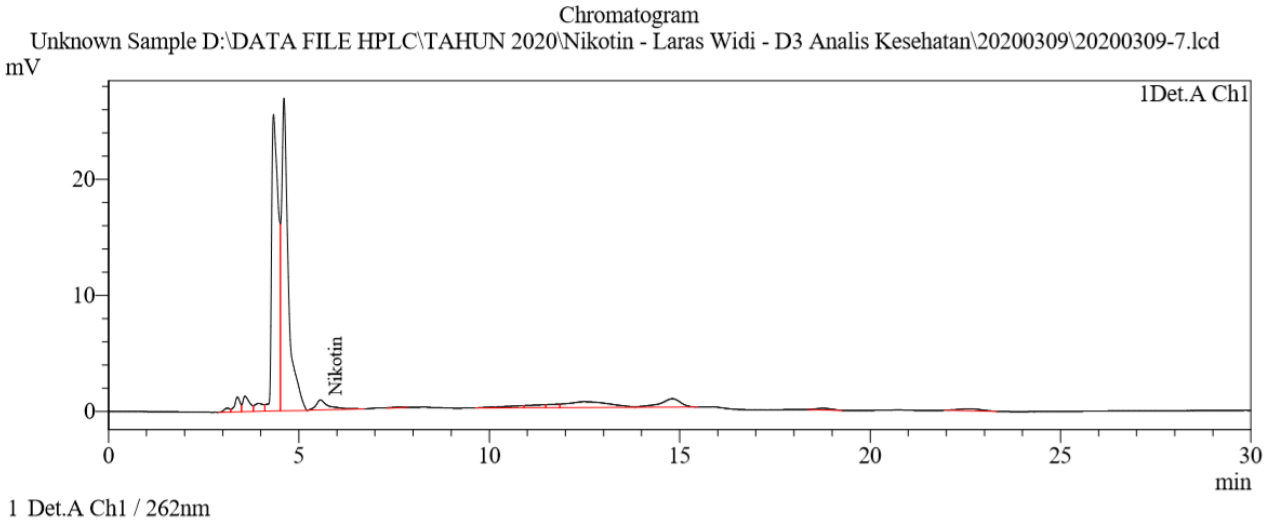
**Lampiran 27. Kromatogram Nikotin Sampel 21 Adisi 1 ppm dengan Fasa Gerak Air : Metanol : Buffer Asetat 0,1M pH4 : Asetonitril (65:13:20:2) Laju alir 1mL/menit**

## POLITEKNIK KESEHATAN BANDUNG
## UNIT LABORATORIUM - LABORATORIUM TERPADU

D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan

| | |
|---|---|
| Acquired by | : Widya |
| Sample Name | : Sampel |
| Sample ID | : 21 |
| Injection Volume | : 20 mikron |
| Data File Name | : 20200309-7.lcd |
| Method File Name | : OKA20200221.lcm |
| Batch File Name | : 20200309.lcb |
| Report File Name | : Default.lcr |

**<Chromatogram>**




Peak Table

| Name | Ret. Time | Area | Area % | Resolution | Tailing Factor | Theoretical Plate# | k' |
|---|---|---|---|---|---|---|---|
| Nikotin | 5.560 | 20681 | 2.537 | 2.293 | 2.168 | 2202.628 | 0.782 |

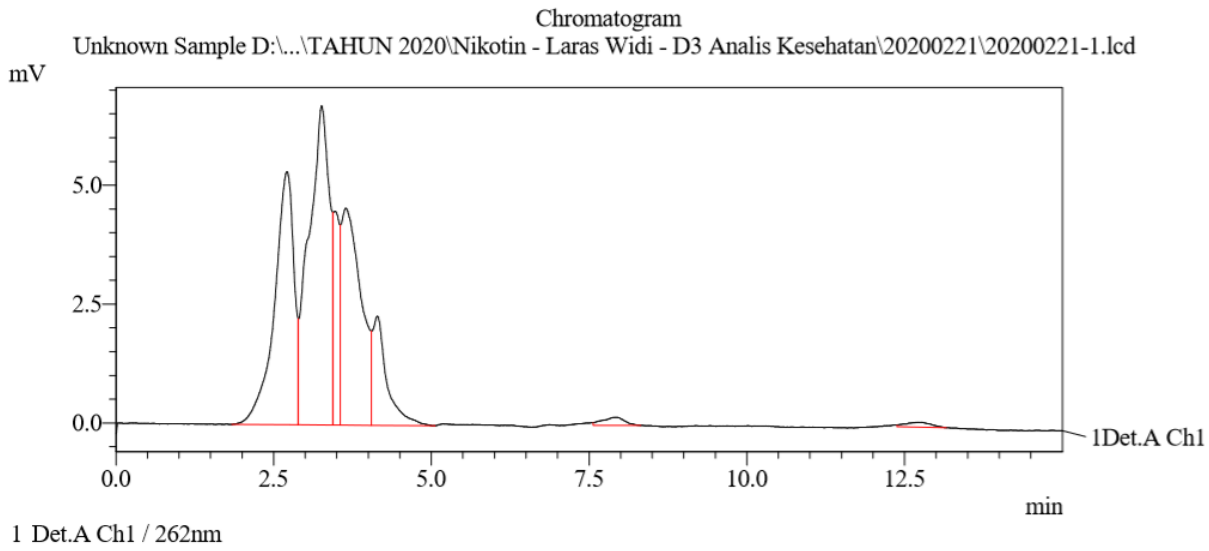
**Lampiran 28. Kromatogram Optimasi Metode dengan Fasa Gerak Metanol : Air (60:40) Laju alir 1mL/menit Injeksi Sampel**

**POLITEKNIK KESEHATAN BANDUNG**
**UNIT LABORATORIUM - LABORATORIUM TERPADU**

D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan\20200221\20200221-1.lcd

| | |
|---|---|
| Acquired by | : Widya |
| Sample Name | : Optimasi Metode |
| Sample ID | : Injeksi sampel dalam fasa gerak Methanol : Air (60:40) |
| Injection Volume | : 20 mikron |
| Data File Name | : 20200221-1.lcd |
| Method File Name | : OKA20200221.lcm |
| Batch File Name | : 20200221.lcb |
| Report File Name | : Default.lcr |

**<Chromatogram>**




D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan\20200221\20200221-1.lcd
Detector A

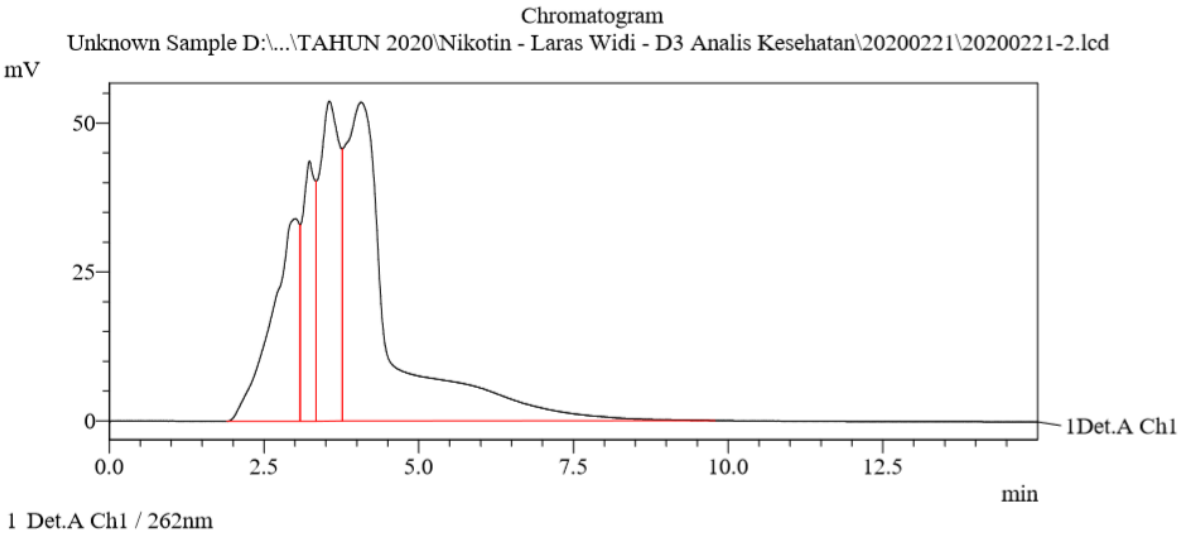
**Lampiran 29. Kromatogram Optimasi Metode dengan Fasa Gerak Metanol : Air (60:40) Laju alir 1mL/menit Injeksi Standar**

**POLITEKNIK KESEHATAN BANDUNG**
**UNIT LABORATORIUM - LABORATORIUM TERPADU**

D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan\20200221\20200221-2.lcd

| | |
|---|---|
| Acquired by | : Widya |
| Sample Name | : Optimasi Metode |
| Sample ID | : Injeksi standar pelarut Asetonitril dalam fasa gerak Methanol : Air (60:40) |
| Injection Volume | : 20 mikron |
| Data File Name | : 20200221-2.lcd |
| Method File Name | : OKA20200221.lcm |
| Batch File Name | : 20200221.lcb |
| Report File Name | : Default.lcr |

**<Chromatogram>**




D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan\20200221\20200221-2.lcd
Detector A

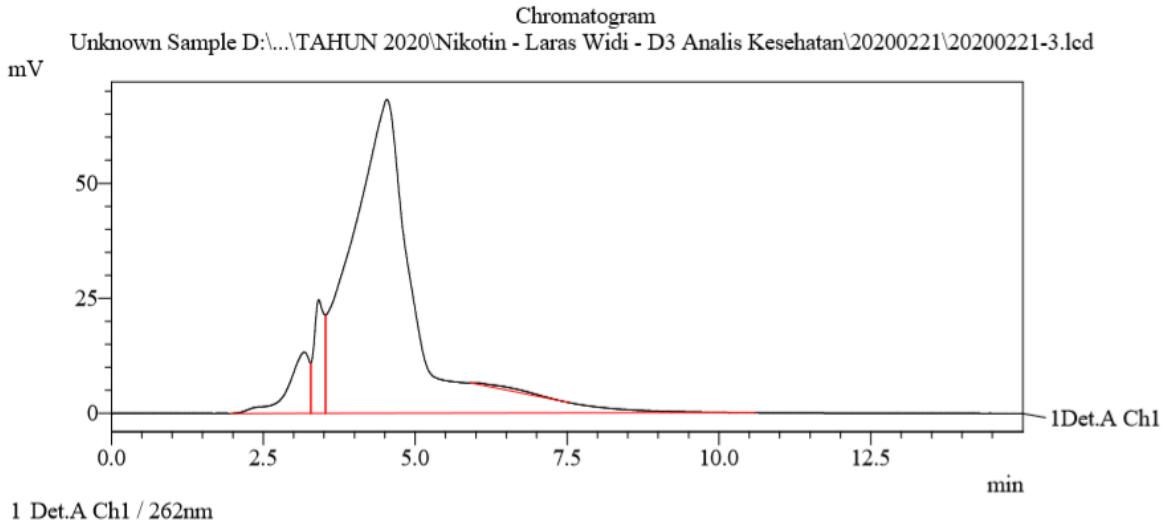
**Lampiran 30 . Kromatogram Optimasi Metode dengan Fasa Gerak Metanol : Air (60:40) Laju alir 1mL/menit Injeksi Standar**

**POLITEKNIK KESEHATAN BANDUNG**
**UNIT LABORATORIUM - LABORATORIUM TERPADU**

D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan\20200221\20200221-3.lcd

| | |
|---|---|
| Acquired by | : Widya |
| Sample Name | : Optimasi Metode |
| Sample ID | : Injeksi standar pelarut Aqua pro injection dalam fasa gerak Methanol : Air (60:40) |
| Injection Volume | : 20 mikron |
| Data File Name | : 20200221-3.lcd |
| Method File Name | : OKA20200221.lcm |
| Batch File Name | : 20200221.lcb |
| Report File Name | : Default.lcr |

**<Chromatogram>**




D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan\20200221\20200221-3.lcd
Detector A

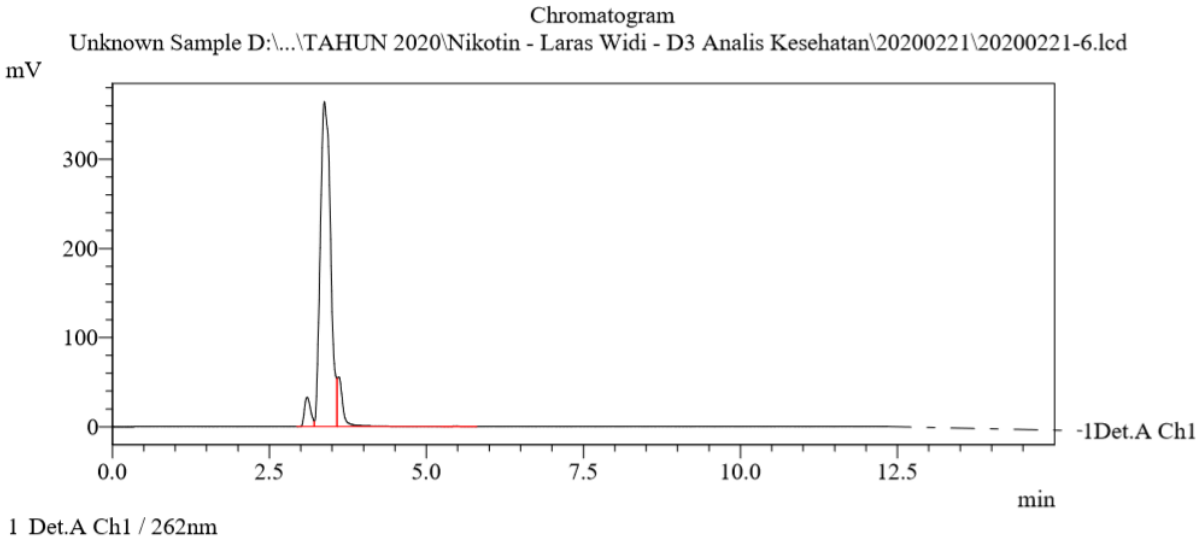
**Lampiran 31. Kromatogram Optimasi Metode dengan Fasa Gerak Air : Metanol : Buffer Asetat 0,1M pH 4 (10:60:30) Laju alir 1mL/menit**

**POLITEKNIK KESEHATAN BANDUNG**
**UNIT LABORATORIUM - LABORATORIUM TERPADU**

D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan\20200221\20200221-6.lcd

| | |
|---|---|
| Acquired by | : Widya |
| Sample Name | : Optimasi Metode |
| Sample ID | : Injeksi standar pelarut Asetonitril dalam fasa gerak Air : Methanol : Buffer (10:60:30) |
| Injection Volume | : 20 mikron |
| Data File Name | : 20200221-6.lcd |
| Method File Name | : OKA20200221.lcm |
| Batch File Name | : 20200221.lcb |
| Report File Name | : Default.lcr |

**<Chromatogram>**




D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan\20200221\20200221-6.lcd
Detector A

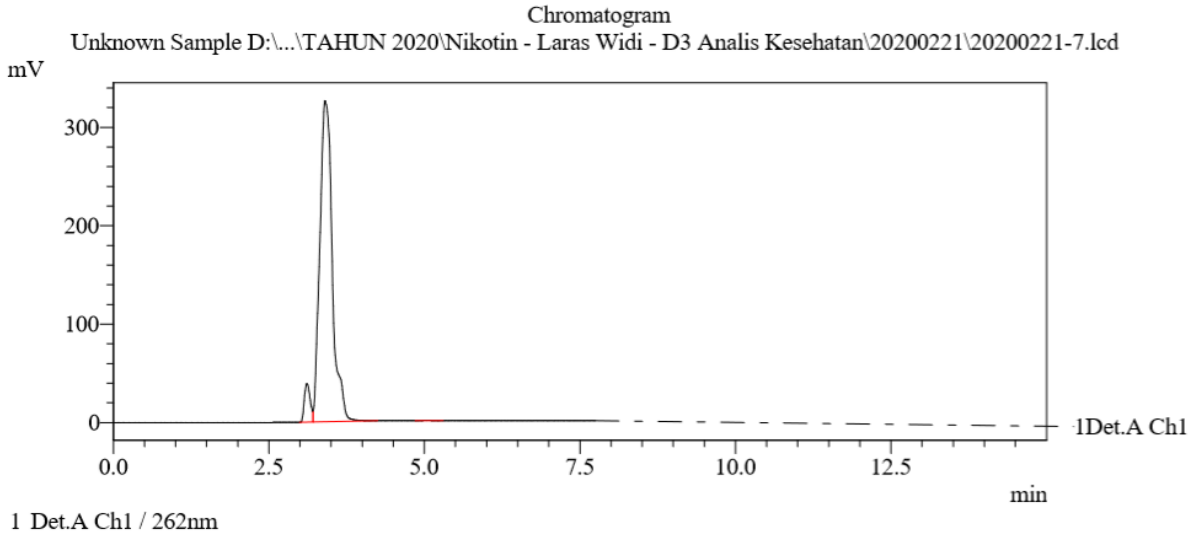
**Lampiran 32. Kromatogram Optimasi Metode dengan Fasa Gerak Metanol : Buffer (70:30) Laju alir 1mL/menit**

**POLITEKNIK KESEHATAN BANDUNG**
**UNIT LABORATORIUM - LABORATORIUM TERPADU**

D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan\20200221\20200221-7.lcd

| | |
|---|---|
| Acquired by | : Widya |
| Sample Name | : Optimasi Metode |
| Sample ID | : Injeksi standar pelarut Asetonitril dalam fasa gerak Methanol : Buffer (70:30) |
| Injection Volume | : 20 mikron |
| Data File Name | : 20200221-7.lcd |
| Method File Name | : OKA20200221.lcm |
| Batch File Name | : 20200221.lcb |
| Report File Name | : Default.lcr |

**<Chromatogram>**




D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan\20200221\20200221-7.lcd
Detector A

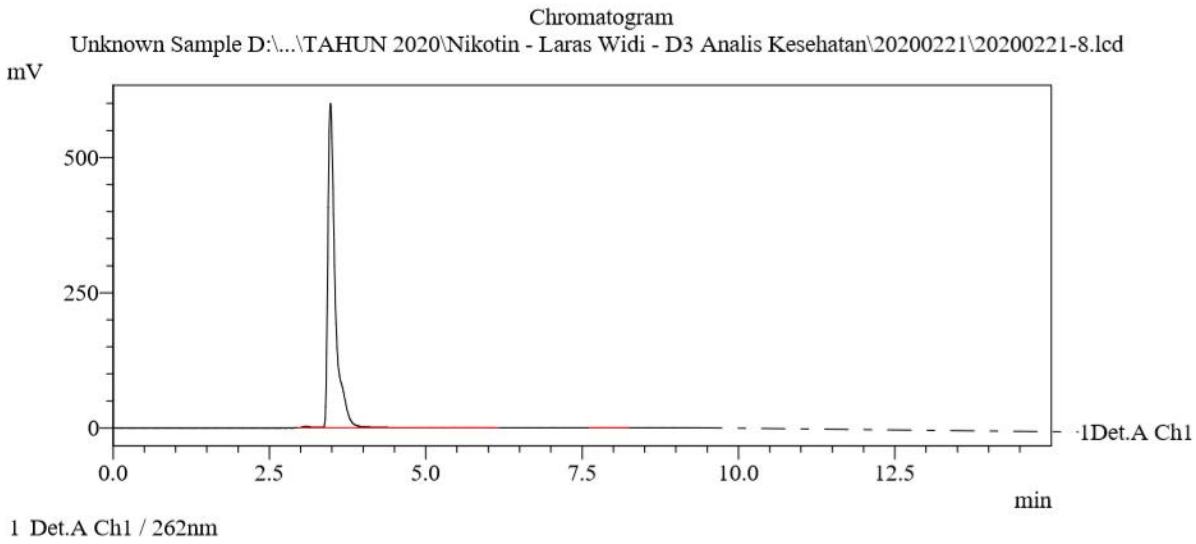
**Lampiran 33. Kromatogram Optimasi Metode dengan Fasa Gerak Air : Metanol : Buffer Asetat 0,1M pH4 (40:40:20) Laju alir 1mL/menit**

**POLITEKNIK KESEHATAN BANDUNG**
**UNIT LABORATORIUM - LABORATORIUM TERPADU**

D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan\20200221\20200221-8.lcd

| | |
|---|---|
| Acquired by | : Widya |
| Sample Name | : Optimasi Metode |
| Sample ID | : Injeksi standar pelarut Asetonitril dalam fasa gerak Air : Methanol : Buffer (40:40:20) |
| Injection Volume | : 20 mikron |
| Data File Name | : 20200221-8.lcd |
| Method File Name | : OKA20200221.lcm |
| Batch File Name | : 20200221.lcb |
| Report File Name | : Default.lcr |

**<Chromatogram>**




D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan\20200221\20200221-8.lcd
Detector A

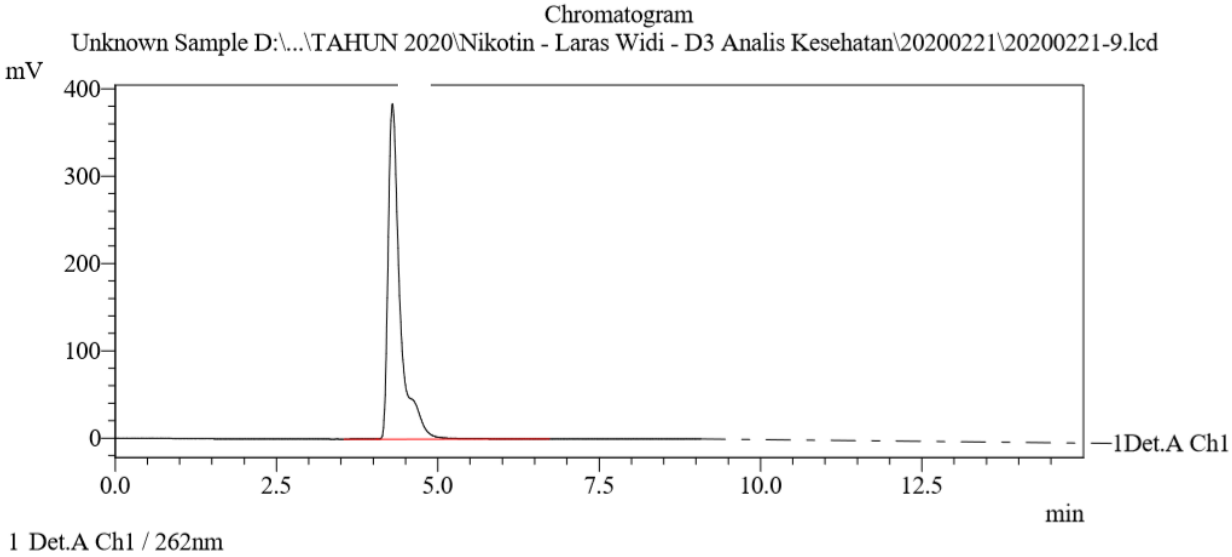
**Lampiran 34. Kromatogram Optimasi Metode dengan Fasa Gerak Air : Metanol : Buffer Asetat 0,1M pH4 (60:20:20) Laju alir 1mL/menit**

**POLITEKNIK KESEHATAN BANDUNG**
**UNIT LABORATORIUM - LABORATORIUM TERPADU**

D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan\20200221\20200221-9.lcd

| | |
|---|---|
| Acquired by | : Widya |
| Sample Name | : Optimasi Metode |
| Sample ID | : Injeksi standar pelarut Asetonitril dalam fasa gerak Air : Methanol : Buffer (60:20:20) |
| Injection Volume | : 20 mikron |
| Data File Name | : 20200221-9.lcd |
| Method File Name | : OKA20200221.lcm |
| Batch File Name | : 20200221.lcb |
| Report File Name | : Default.lcr |

**<Chromatogram>**




1 Det.A Ch1 / 262nm

D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan\20200221\20200221-9.lcd
Detector A

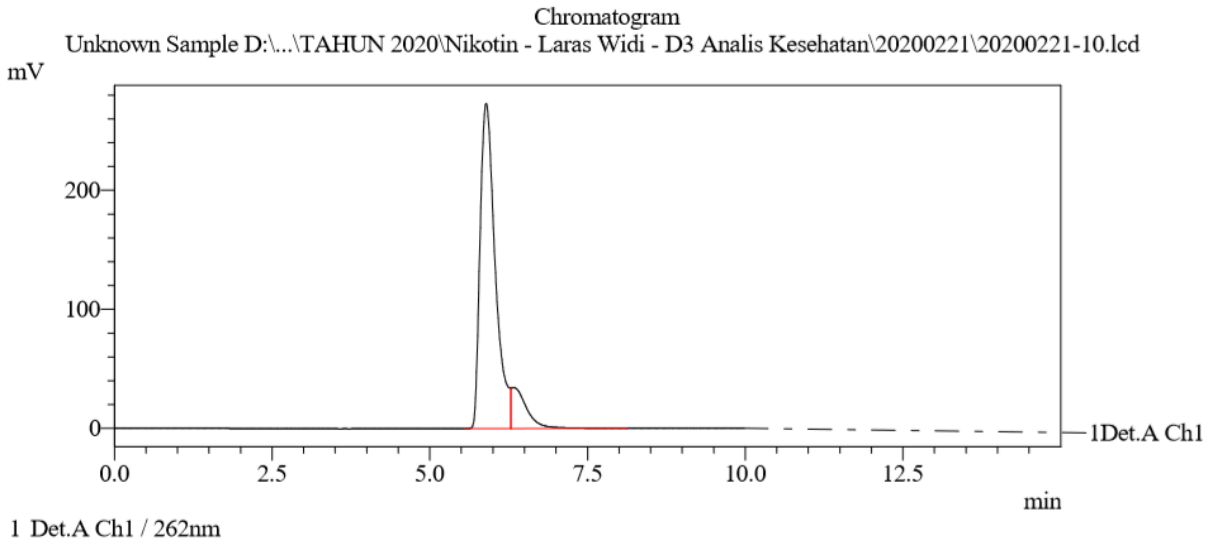
**Lampiran 35. Kromatogram Optimasi Metode Kondisi Optimum dengan Fasa Gerak Air : Metanol : Buffer Asetat 0,1M pH4 : Asetonitril (65:13:20:2) Laju alir 1mL/menit**

**POLITEKNIK KESEHATAN BANDUNG**
**UNIT LABORATORIUM - LABORATORIUM TERPADU**

D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan\20200221\20200221-10.lcd

| | |
|---|---|
| Acquired by | : Widya |
| Sample Name | : Optimasi Metode |
| Sample ID | : Injeksi standar pelarut Asetonitril dalam fasa gerak Air : Methanol : Buffer : ACN (65:13:20:2) |
| Injection Volume | : 20 mikron |
| Data File Name | : 20200221-10.lcd |
| Method File Name | : OKA20200221.lcm |
| Batch File Name | : 20200221.lcb |
| Report File Name | : Default.lcr |

**<Chromatogram>**




D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan\20200221\20200221-10.lcd
Detector A

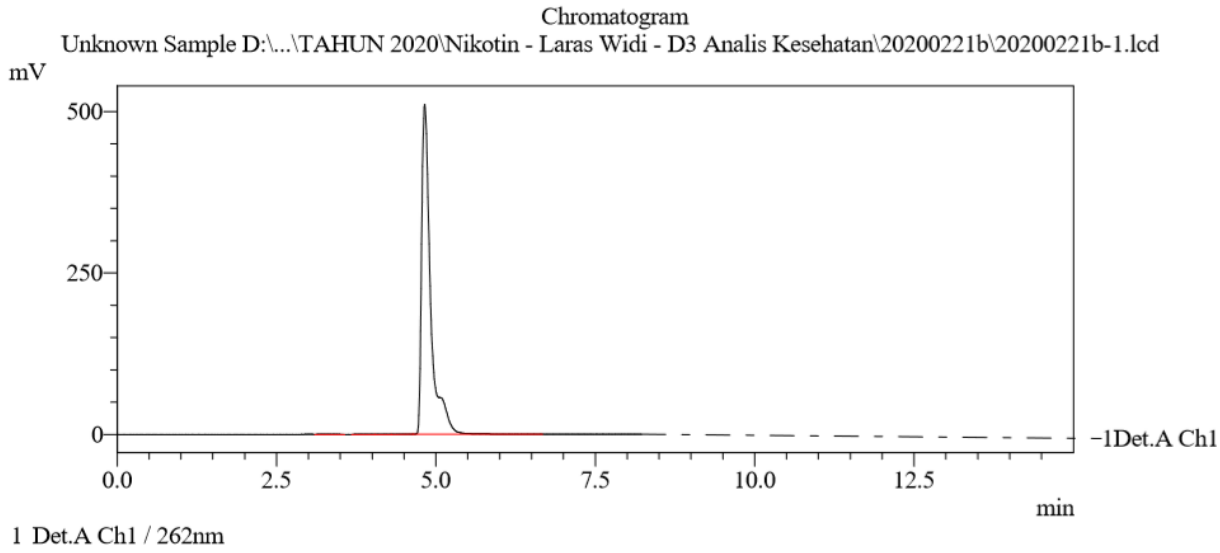
**Lampiran 36. Kromatogram Optimasi Metode dengan Fasa Gerak Air : Metanol : Buffer Asetat 0,1M pH4 : Asetonitril (62:13:20:5) Laju alir 1mL/menit**

**POLITEKNIK KESEHATAN BANDUNG**
**UNIT LABORATORIUM - LABORATORIUM TERPADU**

D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan\20200221\20200221b-1.lcd

| | |
|---|---|
| Acquired by | : Widya |
| Sample Name | : Optimasi Metode |
| Sample ID | : Injeksi standar pelarut Asetonitril dalam fasa gerak Air : Methanol : Buffer : ACN (62:13:20:5) |
| Injection Volume | : 20 mikron |
| Data File Name | : 20200221b-1 |
| Method File Name | : OKA20200221.lcm |
| Batch File Name | : 20200221.lcb |
| Report File Name | : Default.lcr |

**<Chromatogram>**




D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan\20200221b\20200221b-1.lcd
Detector A

**Lampiran 37. Kromatogram Optimasi Metode dengan Fasa Gerak Air : Metanol : Buffer Asetat 0,1M pH4 : Asetonitril (65:10:20:5) Laju alir 1mL/menit**

**POLITEKNIK KESEHATAN BANDUNG**
**UNIT LABORATORIUM - LABORATORIUM TERPADU**

D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan\20200221\20200221b-2.lcd

| | |
|---|---|
| Acquired by | : Widya |
| Sample Name | : Optimasi Metode |
| Sample ID | : Injeksi standar pelarut Asetonitril dalam fasa gerak Air : Methanol : Buffer : ACN (65:10:20:5) |
| Injection Volume | : 20 mikron |
| Data File Name | : 20200221b-2 |
| Method File Name | : OKA20200221.lcm |
| Batch File Name | : 20200221.lcb |
| Report File Name | : Default.lcr |

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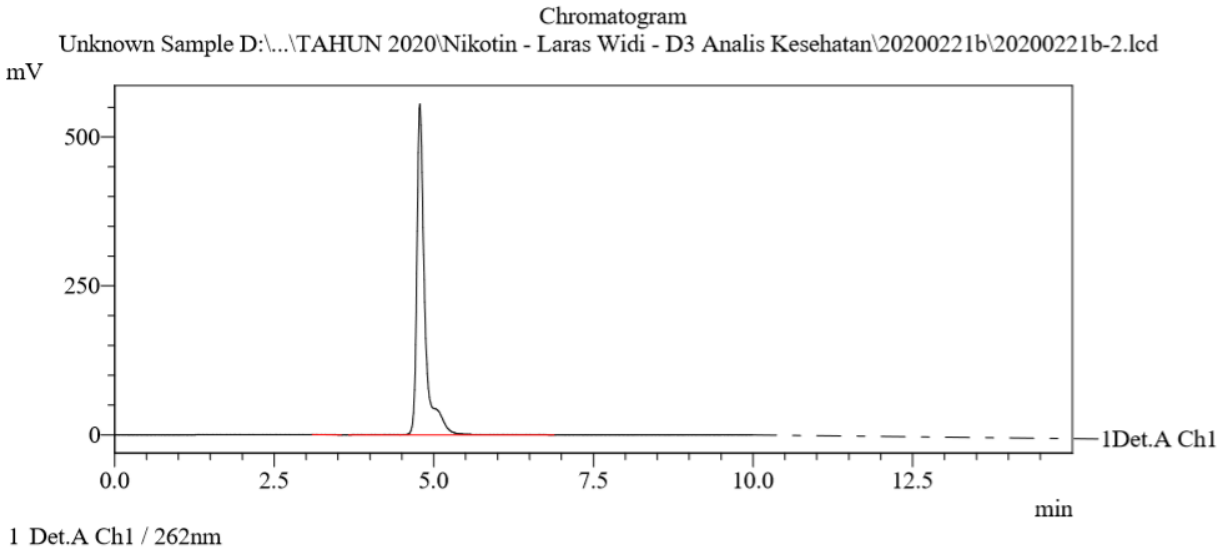



D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan\20200221b\20200221b-2.lcd
Detector A

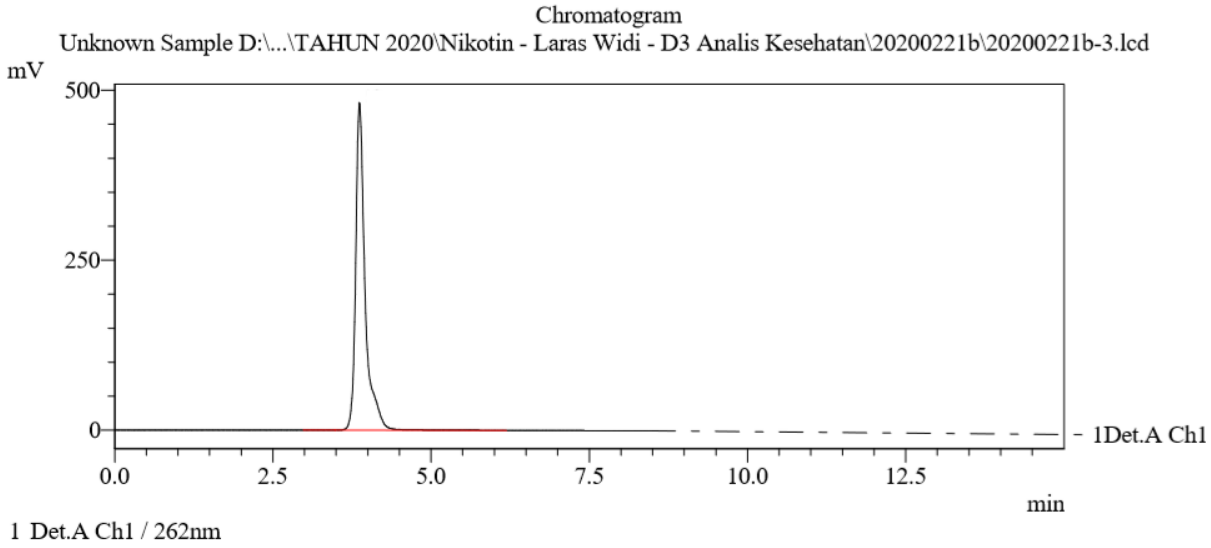
**Lampiran 38. Kromatogram Optimasi Metode dengan Fasa Gerak Air : Metanol : Buffer Asetat 0,1M pH4 : Asetonitril (60:10:20:10) Laju alir 1mL/menit**

**POLITEKNIK KESEHATAN BANDUNG**
**UNIT LABORATORIUM - LABORATORIUM TERPADU**

D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan\20200221\20200221b-3.lcd

| | |
|---|---|
| Acquired by | : Widya |
| Sample Name | : Optimasi Metode |
| Sample ID | : Injeksi standar pelarut Asetonitril dalam fasa gerak Air : Methanol : Buffer : ACN (60:10:20:10) |
| Injection Volume | : 20 mikron |
| Data File Name | : 20200221b-3 |
| Method File Name | : OKA20200221.lcm |
| Batch File Name | : 20200221.lcb |
| Report File Name | : Default.lcr |

**<Chromatogram>**




D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan\20200221b\20200221b-3.lcd
Detector A

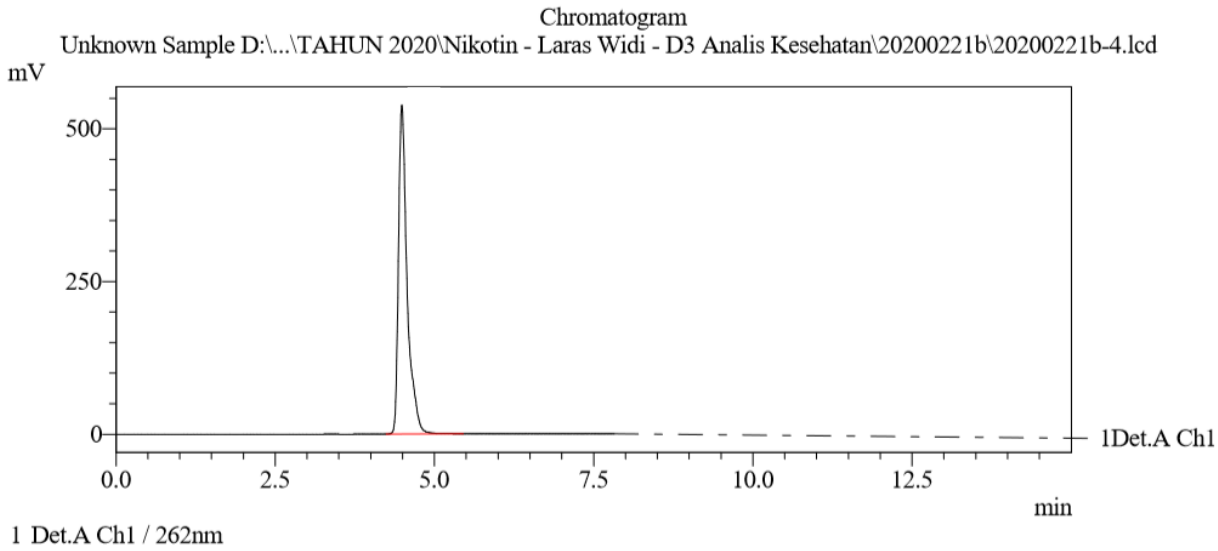
**Lampiran 39. Kromatogram Optimasi Metode dengan Fasa Gerak Air : Metanol : Buffer Asetat 0,1M pH4 : Asetonitril (60:20:15:5) Laju alir 1mL/menit**

**POLITEKNIK KESEHATAN BANDUNG**
**UNIT LABORATORIUM - LABORATORIUM TERPADU**

D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan\20200221\20200221b-4.lcd

| | |
|---|---|
| Acquired by | : Widya |
| Sample Name | : Optimasi Metode |
| Sample ID | : Injeksi standar pelarut Asetonitril dalam fasa gerak Air : Methanol : Buffer : ACN (60:20:15:5) |
| Injection Volume | : 20 mikron |
| Data File Name | : 20200221b-4 |
| Method File Name | : OKA20200221.lcm |
| Batch File Name | : 20200221.lcb |
| Report File Name | : Default.lcr |

**<Chromatogram>**




D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan\20200221b\20200221b-4.lcd
Detector A

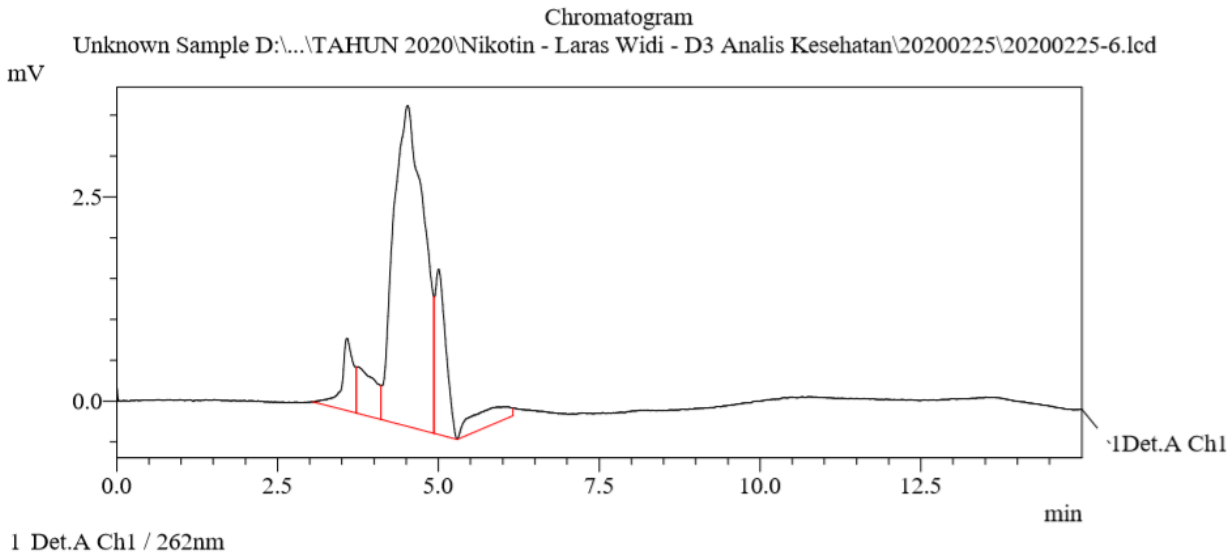
**Lampiran 40. Kromatogram Blanko Pelarut Asetonitril**

**POLITEKNIK KESEHATAN BANDUNG**
**UNIT LABORATORIUM - LABORATORIUM TERPADU**

D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan

| | |
|---|---|
| Acquired by | : Widya |
| Sample Name | : Blanko |
| Sample ID | : Blanko ACN |
| Injection Volume | : 20 mikron |
| Data File Name | : 20200225-6.lcd |
| Method File Name | : OKA20200221.lcm |
| Batch File Name | : 20200225b.lcb |
| Report File Name | : Default.lcr |

**<Chromatogram>**




D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan\20200225\20200225-6.lcd
Detector A

**Lampiran 41. Kromatogram Standar Baku Nikotin 1,0 mg/L**

## POLITEKNIK KESEHATAN BANDUNG
## UNIT LABORATORIUM - LABORATORIUM TERPADU

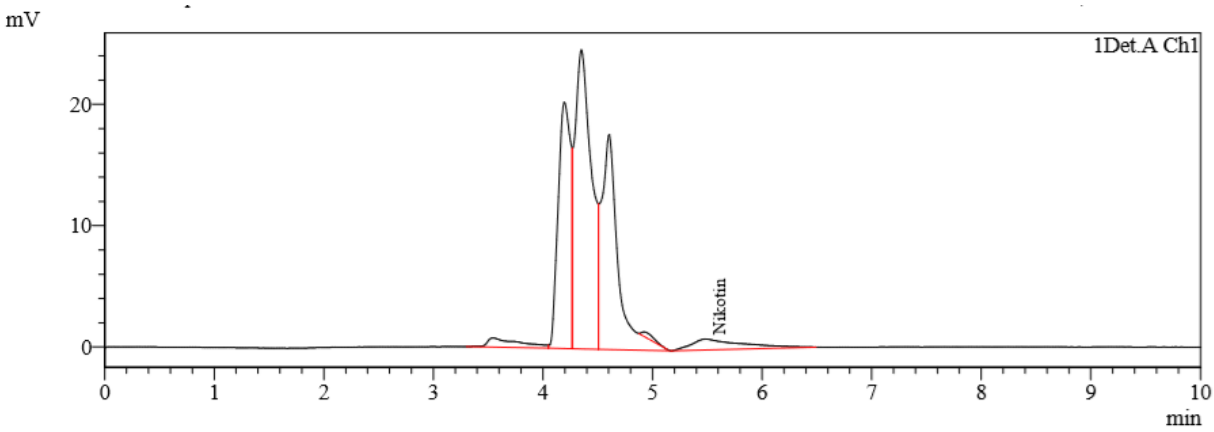
D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan

| | |
|---|---|
| Acquired by | : Widya |
| Sample Name | : Standar |
| Sample ID | : Nikotin 1 ppm |
| Injection Volume | : 20 mikron |
| Data File Name | : Std 1ppm.lcd |
| Method File Name | : OKA20200221.lcm |
| Batch File Name | : 20200225c.lcb |
| Report File Name | : Default.lcr |

---

## <Chromatogram>

Chromatogram
Unknown Sample D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan\Standar\Std 1ppm.lcd




1 Det.A Ch1 / 262nm

Peak Table

| Name | Ret. Time | Area | Area % | Resolution | Tailing Factor | Theoretical Plate# | k' |
|---|---|---|---|---|---|---|---|
| Nikotin | 5.476 | 28364 | 4.316 | 0.884 | 2.188 | 439.132 | 0.546 |

**Lampiran 42. Kromatogram Standar Baku Nikotin 2,0 mg/L**

## POLITEKNIK KESEHATAN BANDUNG
## UNIT LABORATORIUM - LABORATORIUM TERPADU

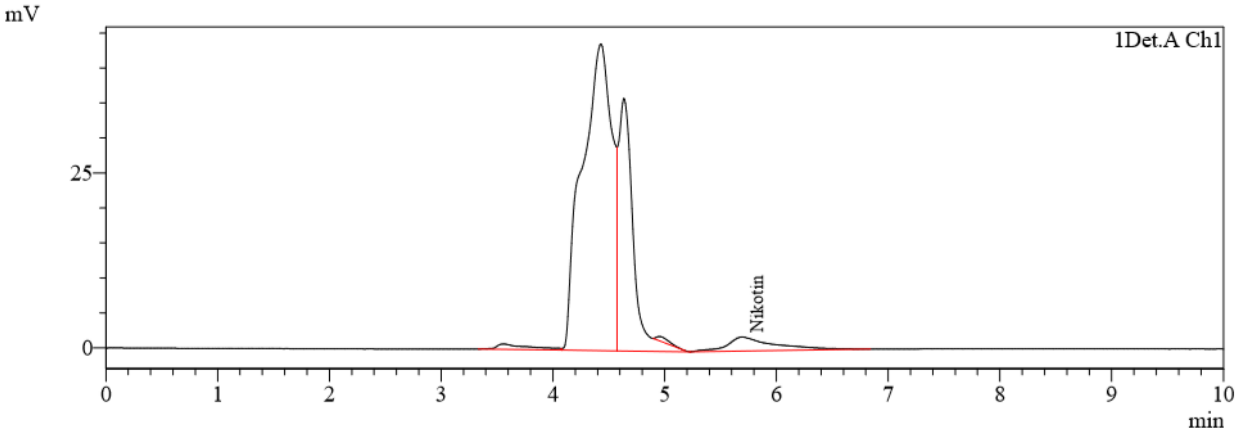
D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan

| | |
|---|---|
| Acquired by | : Widya |
| Sample Name | : Standar |
| Sample ID | : Nikotin 2 ppm |
| Injection Volume | : 20 mikron |
| Data File Name | : Std 2ppm.lcd |
| Method File Name | : OKA20200221.lcm |
| Batch File Name | : 20200225b.lcb |
| Report File Name | : Default.lcr |

---

## <Chromatogram>

Chromatogram
Unknown Sample D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan\Standar\Std 2ppm.lcd




1 Det.A Ch1 / 262nm

Peak Table

| Name | Ret. Time | Area | Area % | Resolution | Tailing Factor | Theoretical Plate# | k' |
|---|---|---|---|---|---|---|---|
| Nikotin | 5.691 | 58549 | 4.765 | 1.841 | 1.610 | 1490.507 | 0.603 |

**Lampiran 43. Kromatogram Standar Baku Nikotin 3,0 mg/L**

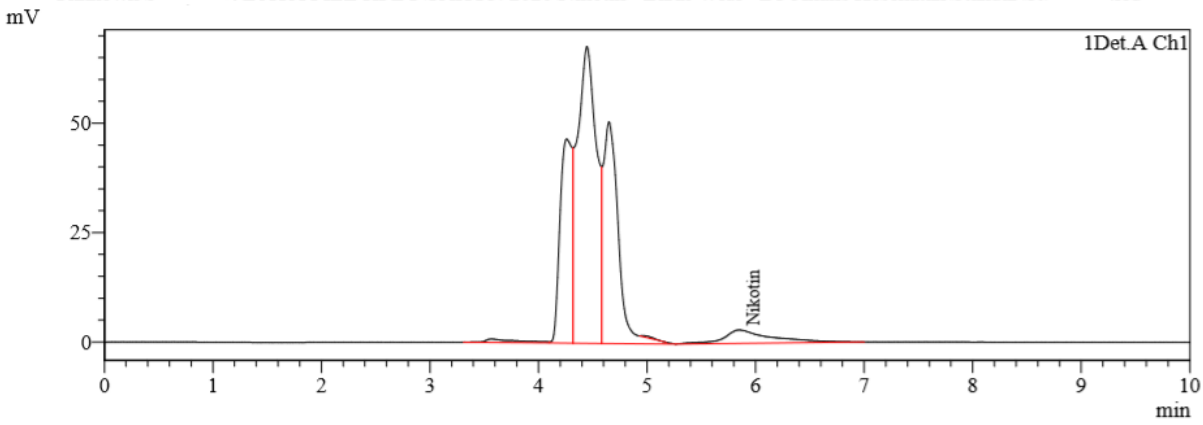
## POLITEKNIK KESEHATAN BANDUNG
## UNIT LABORATORIUM - LABORATORIUM TERPADU

D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan

| | |
|---|---|
| Acquired by | : Widya |
| Sample Name | : Standar |
| Sample ID | : Nikotin 3 ppm |
| Injection Volume | : 20 mikron |
| Data File Name | : Std 3 ppm.lcd |
| Method File Name | : OKA20200221.lcm |
| Batch File Name | : 20200225c.lcb |
| Report File Name | : Default.lcr |

**<Chromatogram>**

Chromatogram
Unknown Sample D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan\Standar\Std 3ppm.lcd




1 Det.A Ch1 / 262nm

Peak Table

| Name | Ret. Time | Area | Area % | Resolution | Tailing Factor | Theoretical Plate# | k' |
|---|---|---|---|---|---|---|---|
| Nikotin | 5.848 | 91446 | 5.064 | 2.208 | 1.390 | 1518.993 | 0.641 |

**Lampiran 44. Kromatogram Standar Baku Nikotin 4,0 mg/L**

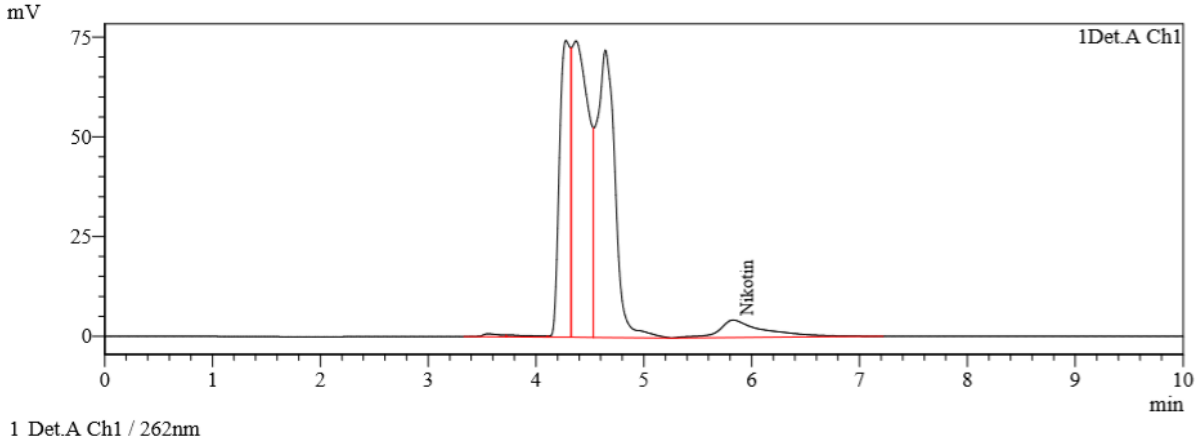
POLITEKNIK KESEHATAN BANDUNG
UNIT LABORATORIUM - LABORATORIUM TERPADU

D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan

| | |
|---|---|
| Acquired by | : Widya |
| Sample Name | : Standar |
| Sample ID | : Nikotin 4 ppm |
| Injection Volume | : 20 mikron |
| Data File Name | : Std 4 ppm.lcd |
| Method File Name | : OKA20200221.lcm |
| Batch File Name | : 20200225c.lcb |
| Report File Name | : Default.lcr |

**<Chromatogram>**

Chromatogram
Unknown Sample D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan\Standar\Std 4ppm.lcd




1 Det.A Ch1 / 262nm

Peak Table

| Name | Ret. Time | Area | Area % | Resolution | Tailing Factor | Theoretical Plate# | k' |
|---|---|---|---|---|---|---|---|
| Nikotin | 5.825 | 126202 | 5.388 | 2.419 | 1.479 | 1713.772 | 0.639 |

**Lampiran 45. Kromatogram Ekstrak Rokok Filter**

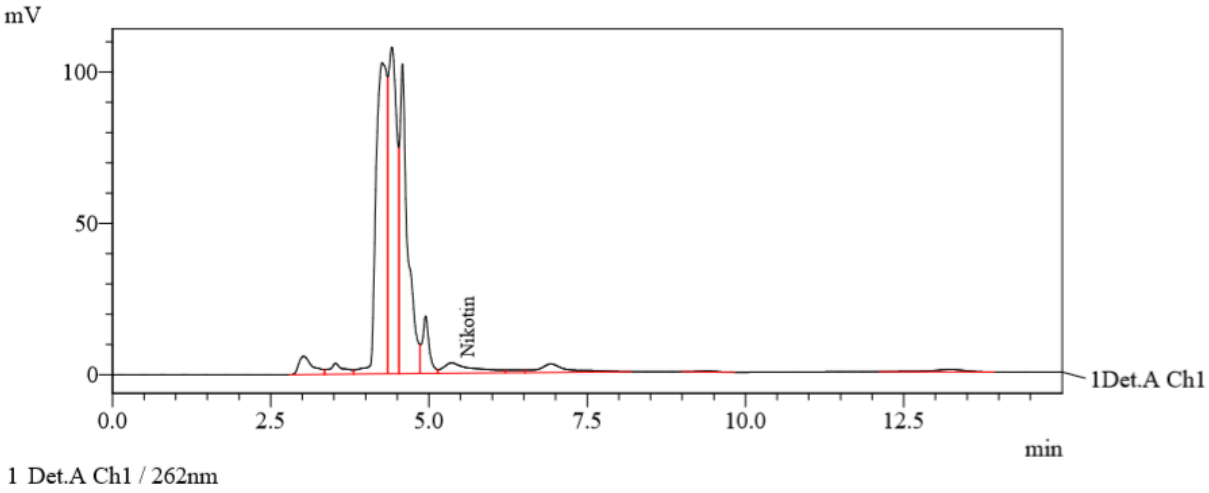
POLITEKNIK KESEHATAN BANDUNG
UNIT LABORATORIUM - LABORATORIUM TERPADU

D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan

| | |
|---|---|
| Acquired by | : Widya |
| Sample Name | : Ekstrak rokok filter |
| Sample ID | : Ekstrak rokok filter |
| Injection Volume | : 20 mikron |
| Data File Name | : 20200226-1.lcd |
| Method File Name | : OKA20200221.lcm |
| Batch File Name | : 20200226.lcb |
| Report File Name | : Default.lcr |

**<Chromatogram>**

Chromatogram
Unknown Sample D:\DATA FILE HPLC\TAHUN 2020\Nikotin - Laras Widi - D3 Analis Kesehatan\20200226\20200226-1.lcd




Peak Table

| Name | Ret. Time | Area | Area % | Resolution | Tailing Factor | Theoretical Plate# | k' |
|---|---|---|---|---|---|---|---|
| Nikotin | 5.354 | 112795 | 3.042 | 0.956 | 0.000 | 1086.614 | 0.775 |

**Lampiran 46. Perhitungan Batas Deteksi dan Kuantitasi**

| No | Konsentrasi Baku Nikotin (mg/L) | Area | Yi | $(Yi-Yi)^2$ |
|---|---|---|---|---|
| 1 | 1,0 | 28.364 | 27177,5 | 1407782,25 |
| 2 | 2,0 | 58.549 | 59818,5 | 1611630,25 |
| 3 | 3,0 | 91.446 | 92459,5 | 1027182,25 |
| 4 | 4,0 | 126.202 | 125100,5 | 1213302,25 |

$\Sigma$ = 5259897

Persamaan regresi: y = 32641x – 5462,5

Yi didapat dari persamaan regresi, misalnya x = 1,0 maka

Yi = 32641 (1,0) – 5462,5

= 27177,5

$S (y/x)^2$ = Variasi variabel respon (y), didapat dari data-data yang dekat dengan garis regresi

$$= \frac{\Sigma(yi - yi)^2}{N}$$

$$= \frac{5259897}{4} = 1314974,25$$

S (y/x) = V 1314974,25 = 1146,723267

Batas deteksi (LOD) = 3.SD/625292

$$= \frac{3.\ 1146,723267}{625292}$$

= 0,0055 mg/L

Batas kuantitasi (LOQ) = 10.SD/625292

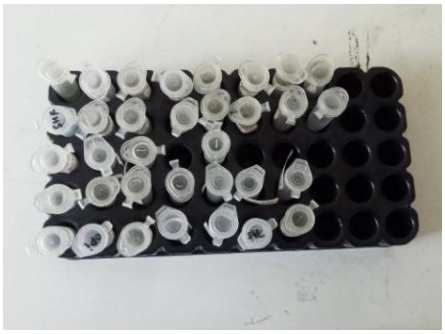
$$= \frac{10.1146,723267}{625292}$$

= 0,0183 mg/L

**Lampiran 47. Dokumentasi Penelitian**

**Pemeriksaan Kadar Nikotin Perokok Aktif**

Seperangkat Alat HPLC



Sampel Plasma Perokok Aktif


Fasa Gerak

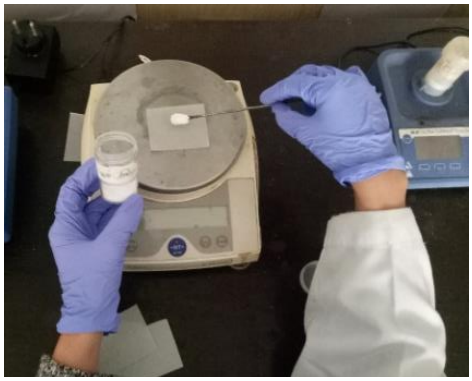
Deret Standar Nikotin


Standar Nikotin 10000 ppm

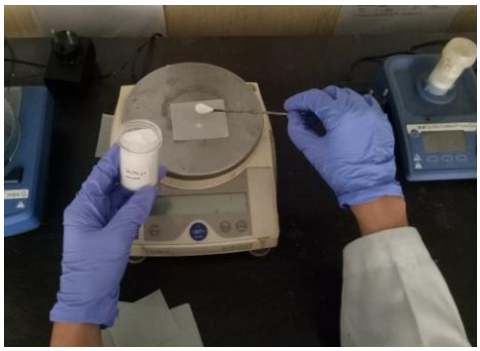
pH meter

Pemipetan plasma+Asetonitril

Adisi Standar



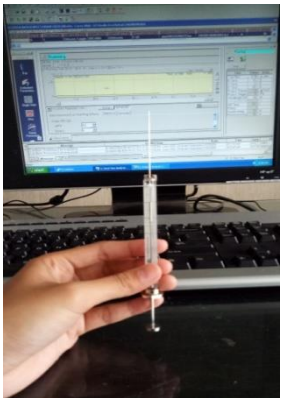
Penimbangan $Na_2CO_3$



Penimbangan $Na_2SO_4$ anhidrat

Vortex

Mikro Centrifuge



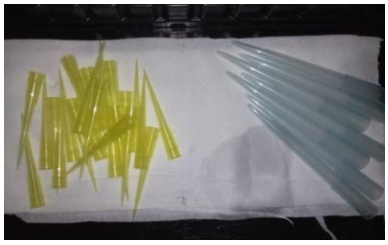
Injeksi Sampel

**Pemeriksaan Glukosa Darah Perokok Aktif**


Fotometer Kenzamax


Reagen dan Standar Glukosa GOD-PAP

Mikropipet



Tip kuning Tip biru

Plasma Perokok Aktif


Inkubasi sampel dan Pembacaan Hasil