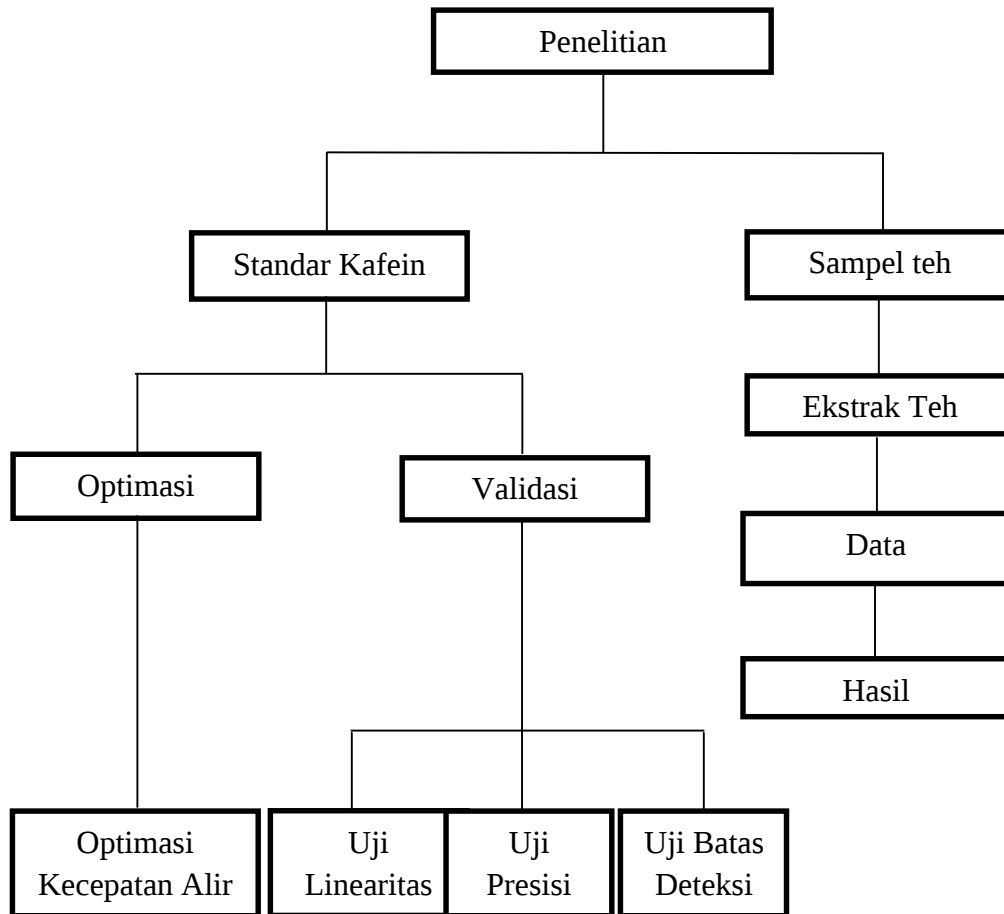


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LAMPIRAN 1
ALUR PENELITIAN



Gambar II.1 Alur penelitian

LAMPIRAN 2

SAMPEL TEH HITAM



Gambar IV.1 Sampel teh hitam

LAMPIRAN 3

PERHITUNGAN

Dari pembuatan larutan 1000 ppm larutan induk

1. Standar 20 ppm

$$V1.C1 = V2.C2$$

$$V1.1000 \text{ mg/mL} = 25 \text{ mL} \cdot 20 \text{ mg/mL}$$

$$V1.1000 = 500 \text{ mL}$$

$$V1 = 0,5 \text{ mL}$$

2. Standar 40 ppm

$$V1.C1 = V2.C2$$

$$V1.1000 \text{ mg/mL} = 25 \text{ mL} \cdot 40 \text{ mg/mL}$$

$$V1.1000 = 1000 \text{ mL}$$

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

3. Standar 60 ppm

$$V1.C1 = V2.C2$$

$$V1.1000 \text{ mg/mL} = 25 \text{ mL} \cdot 60 \text{ mg/mL}$$

$$V1.1000 = 1500 \text{ mL}$$

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

4. Standar 80 ppm

$$V1.C1 = V2.C2$$

$$V1.1000 \text{ mg/mL} = 25 \text{ mL} \cdot 80 \text{ mg/mL}$$

$$V1.1000 = 2000 \text{ mL}$$

$$V1 = 2 \text{ mL}$$

5. Standar 100 ppm

$$V1.C1 = V2.C2$$

$$V1.1000 \text{ mg/mL} = 25 \text{ mL} \cdot 100 \text{ mg/mL}$$

$$V1.1000 = 2500 \text{ mL}$$

$$V1 = 2,5 \text{ mL}$$

LAMPIRAN 3

(LANJUTAN)

Uji Batas Deteksi

$$\sum(Y_i - \bar{Y})^2 = 13003939218$$

$$n = 5$$

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

$$= \sqrt{\frac{13003939218}{3}}$$

$$= 65838,0316$$

$$YBD = 3S_{y/x} + a$$

$$= 3 \cdot 65838,0316 + 47101$$

$$= 244615,0984 \quad (\text{Respon batas deteksi})$$

$$XBD = YBD = bx + a$$

$$244615,0948 = 35560 \cdot x + 47101$$

$$X = 5,8854 \text{ ppm} \quad (\text{Batas deteksi})$$

LAMPIRAN 3

(LANJUTAN)

Uji Presisi

Konsentrasi Rata-rata

$$= \frac{x_1+x_2+x_3+x_4+x_5+x_6+x_7}{7}$$

Konsentrasi Rata-rata

$$= \frac{76,5622 + 75,3317 + 76,1662 + 74,7547 + 76,4508 + 76,7886 + 78,2281}{7}$$

$$= 76,3260$$

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

$$= 1,2306$$

$$\%RSD = \frac{SD}{rata-rata} \times 100\%$$

$$= \frac{1,2306}{76,3260} \times 100\%$$

$$= 1,6122\%$$

LAMPIRAN 3

(LANJUTAN)

1. Ekstrak teh hitam curah 2.5 gram/500 ml(1:1)

Menit ke 5

$$-4.864 \text{ ppm} = -4.864 \text{ mg/l}$$

$$\frac{500 \text{ mL}}{1000 \text{ mL}} \times -4.864 = -2.432 \times 2 = -4,864 \frac{\text{mg}}{2.5 \text{ g}}$$

Menit ke 10

$$\frac{500 \text{ mL}}{1000 \text{ mL}} \times 1.146 = 573 \times 2 = 1,146 \text{ mg/2.5 g}$$

2. Ekstrak teh hitam 2.5 gram/500 ml

$$\frac{500 \text{ mL}}{1000 \text{ mL}} \times -0.423 = -0.2115 \times 2 = 0,423 \text{ mg/2,5 gram}$$

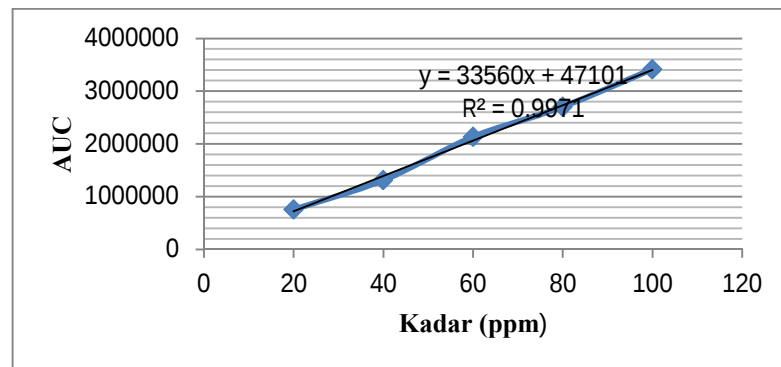
LAMPIRAN 4

UJI LINEARITAS

Tabel 5.1

Data AUC Kurva Baku Kafein

Kadar (ppm)	AUC
20	752035
40	1309818
60	2127892
80	2701567
100	3412145



Gambar V.1 Persamaan regresi linier standar kafein

LAMPIRAN 5

UJI PRESISI

Tabel 5.2

Hasil Uji Presisi Larutan Baku Kafein

No	Kadar Baku Kafein(ppm)	Y	X	X ²
1	80	2616527	76,5622	5861,7639
2	80	2575232	75,3317	5674,8612
3	80	2603237	76,1662	5810,2824
4	80	2555868	74,7547	5588,2619
5	80	2612789	76,4508	5844,7210
6	80	2624127	76,7886	5896,4918
7	80	2672437	78,2281	6119,6401
Jumlah		18260217	534,2522	40787,0223

$$\text{Konsentrasi rata-rata} = 76,3260$$

$$\text{SD} = 1,2306$$

$$\% \text{RSD} = 1,6123 \%$$

$$\text{Ketelitian Alat} = 99,9839\%$$

Keterangan :

Y = nilai AUC pada panjang gelombang 270 nm

X = konsentrasi baku kafein

LAMPIRAN 6

UJI BATAS DETEKSI

Tabel 5.3

Hasil Uji Batas Deteksi

X(ppm)	Yi	Y	(Yi-Y)	$\Sigma(Yi-Y)^2$
20	75203	718301	33734	1137982756
40	1309818	1389501	-79683	6349380489
60	2127892	2060701	67191	4514630481
80	2701567	2731901	-30334	920151556
100	3412145	3403101	9044	81793936
Jumlah				13003939218

$$\Sigma(Yi-Y)^2 = 13003939218$$

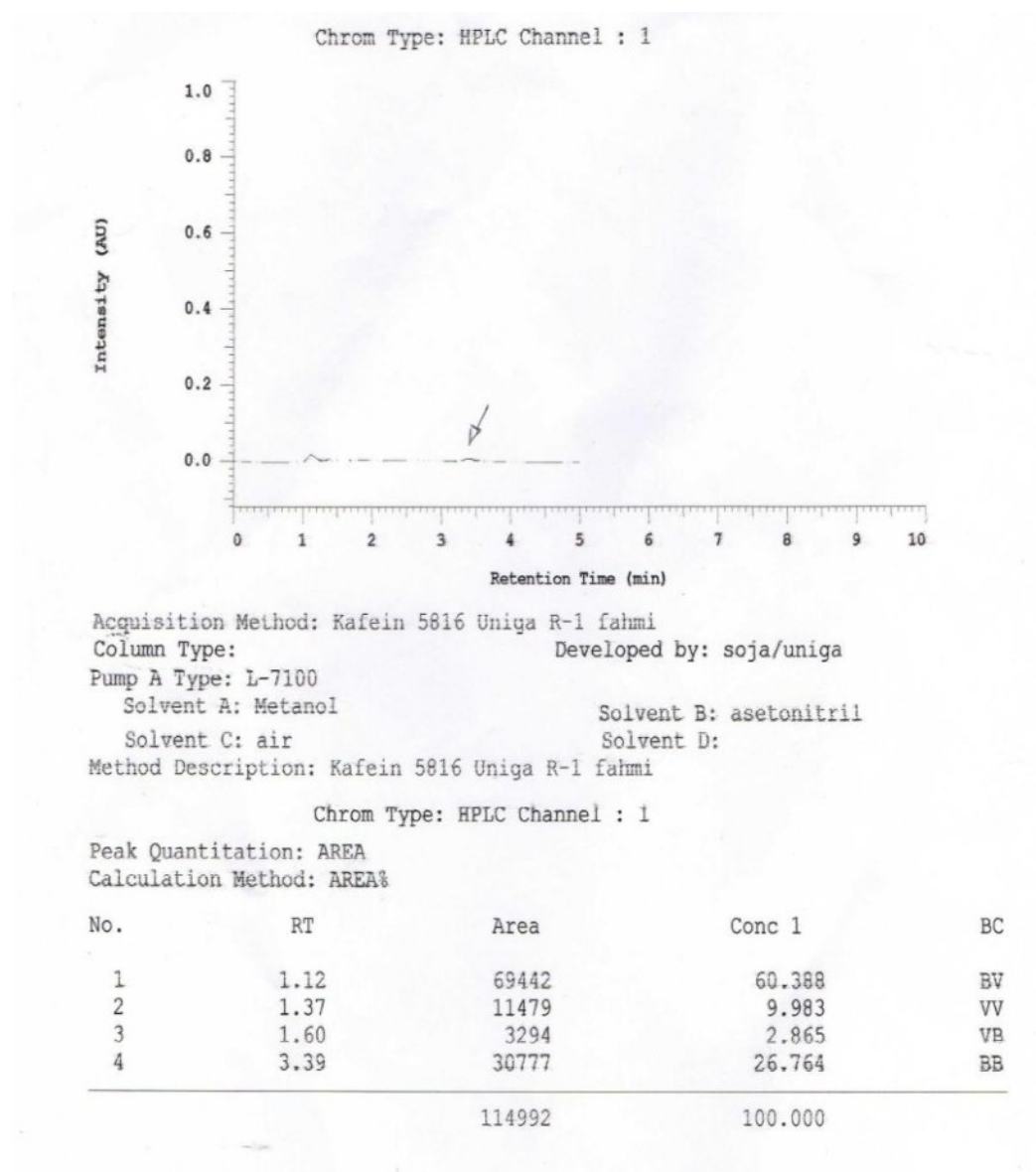
$$S_{y/x} = 65838,0316$$

$$Y_{BD} = 244615,0948 \text{ ppm}$$

$$X_{BD} = 5,8854 \text{ ppm}$$

LAMPIRAN 7

DATA KROMATOGRAM PENGUJIAN KADAR KAFEIN

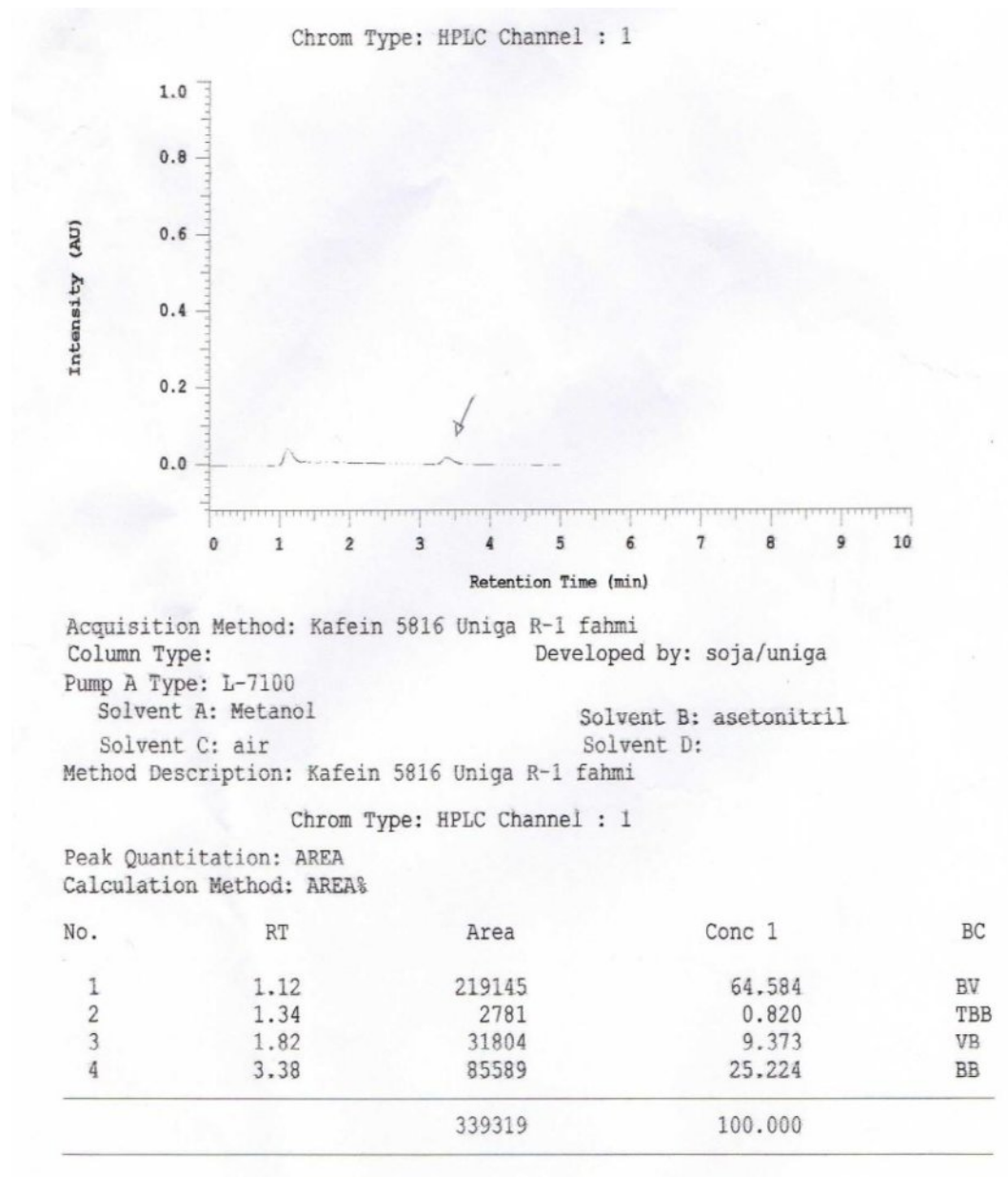


Gambar V.2 Data kromatogram pengujian kafein sampel teh hitam

ekstrak sampel teh hitam 2,5 g/500 mL(1:1) menit ke 5

LAMPIRAN 7

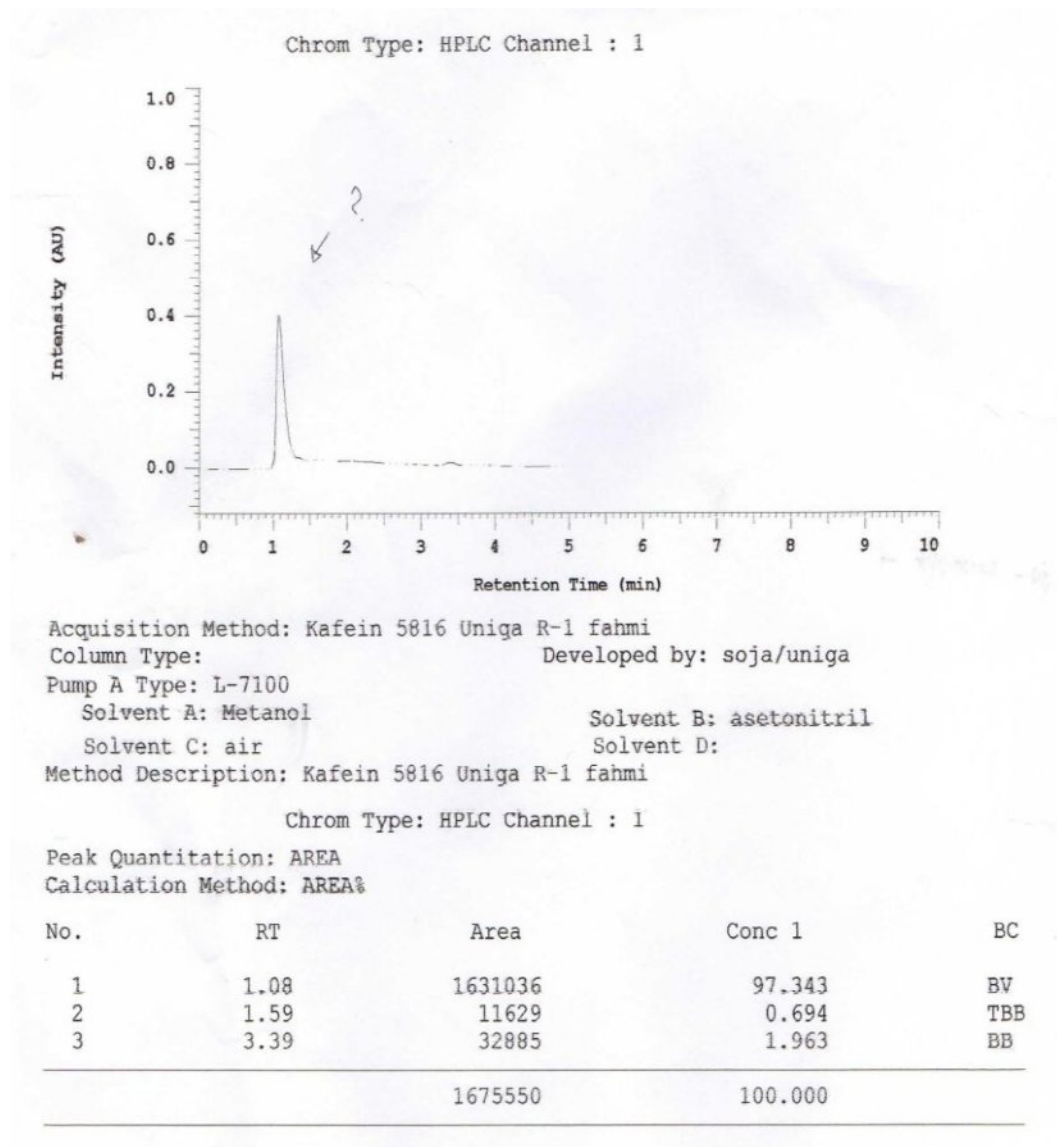
(LANJUTAN)



Gambar V.3 Data kromatogram pengujian kafein sampel teh hitam ekstrak sampel teh hitam 2,5 g/500 mL(1:1) menit ke 10

LAMPIRAN 7

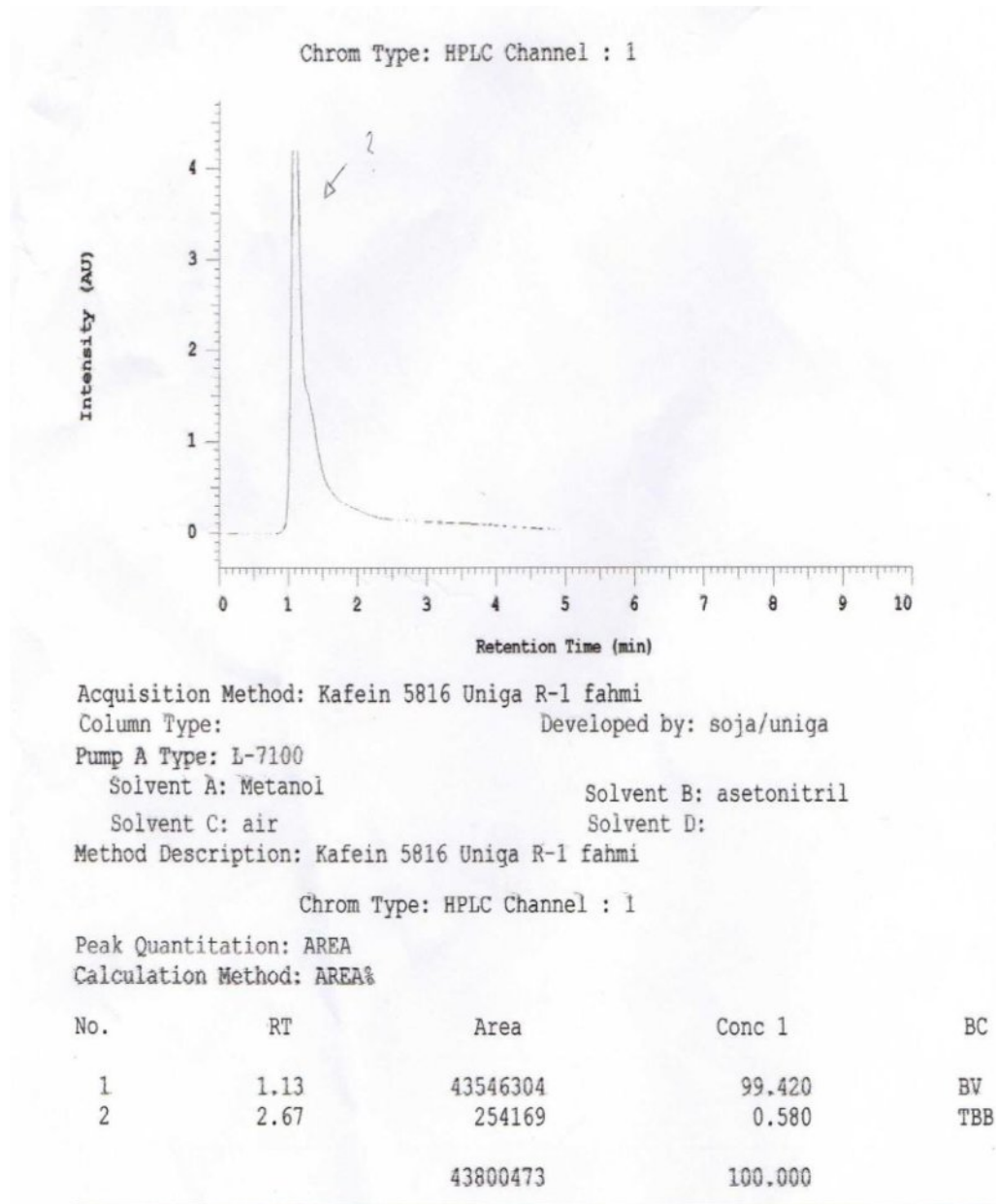
(LANJUTAN)



Gambar V.4 Data kromatogram pengujian kafein sampel teh hitam ekstrak sampel teh hitam 2,5 g/500 mL menit ke 5

LAMPIRAN 7

(LANJUTAN)



Gambar V.5 Data kromatogram pengujian kafein sampel teh hitam ekstrak sampel teh hitam 25 g/500 mL menit ke 5

LAMPIRAN 8

UJI KUANTITATIF

Tabel 5.4

Hasil Uji Kuantitatif pada Ekstrak Sampel Teh Hitam 2,5 g/500 mL(1:1)

Suhu	Menit ke	AUC	Konsentrasi(mg/g)
95°C	5	30777	-4,864
	10	85589	1,146

Tabel 5.5

Hasil Uji Kuantitatif pada Ekstrak Sampel Teh Hitam 2,5 g/500 mL

Suhu	Menit Ke	AUC	Konsentrasi(mg/mL)
95°C	5	32885	0,423