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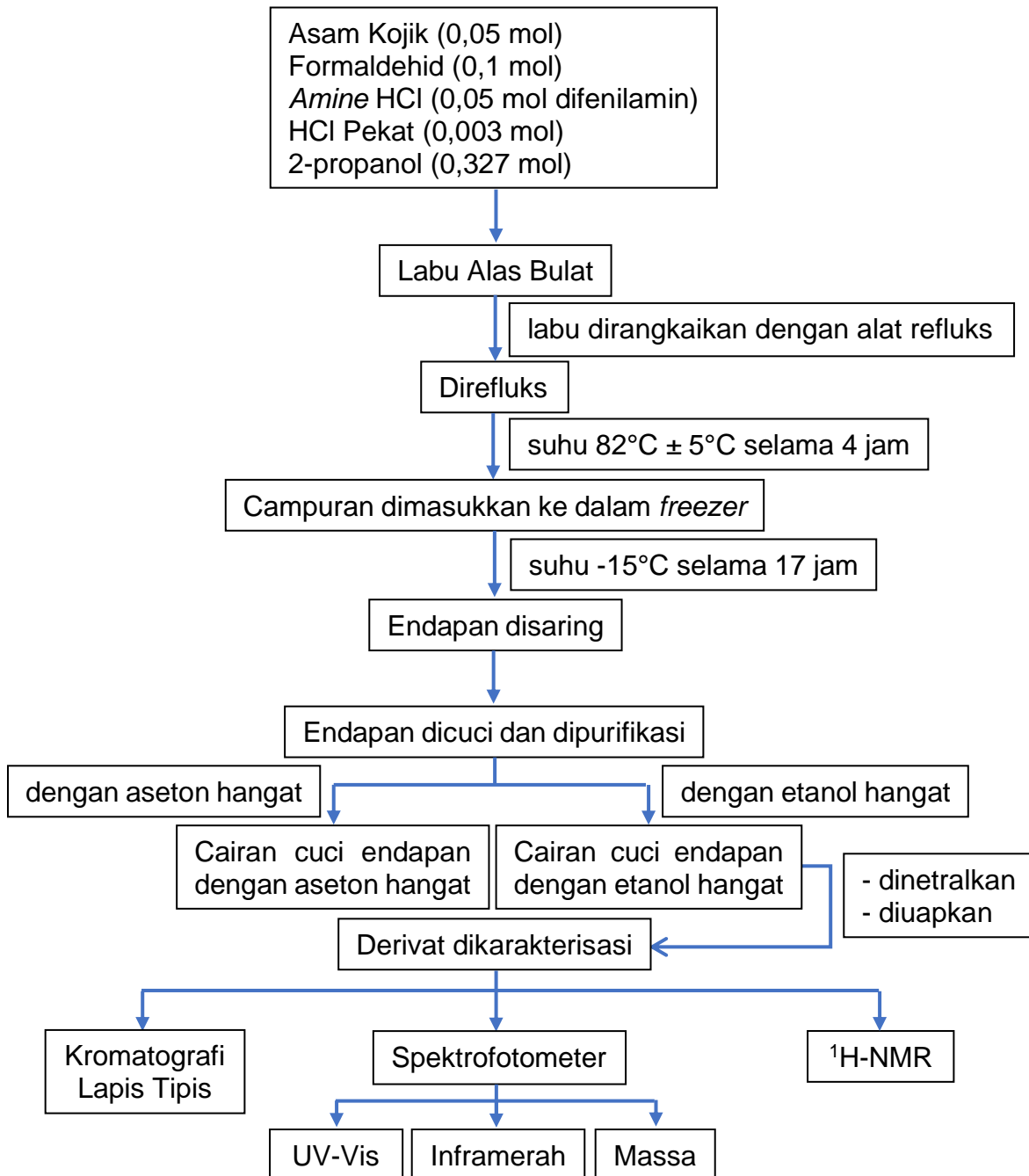
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LAMPIRAN 1

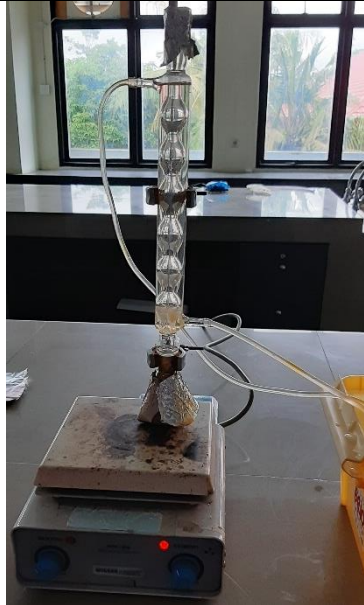
SKEMA KERJA

Sintesis dan Karakterisasi Derivat Asam Kojik



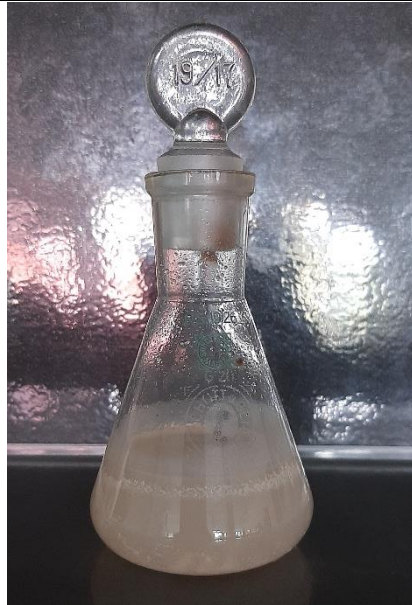
LAMPIRAN 2

GAMBAR PENELITIAN



Gambar 16

Proses refluks derivat asam kojik



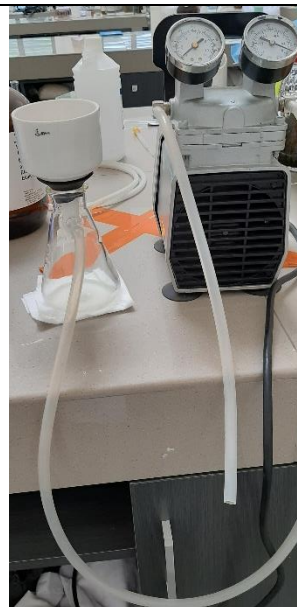
Gambar 17

Hasil refluks derivat asam kojik



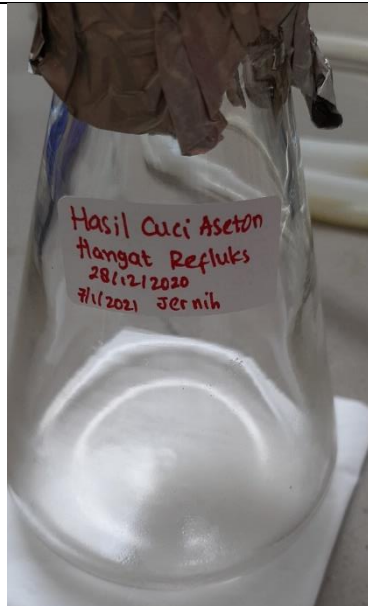
Gambar 18

Hasil refluks derivat asam kojik setelah disimpan di dalam freezer pada suhu -15°C selama 17 jam



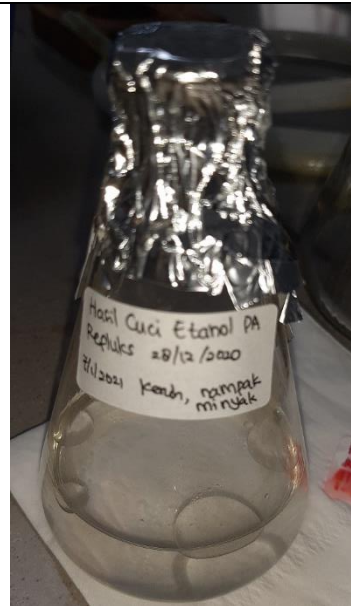
Gambar 19

Proses filtrasi vakum derivat asam kojik



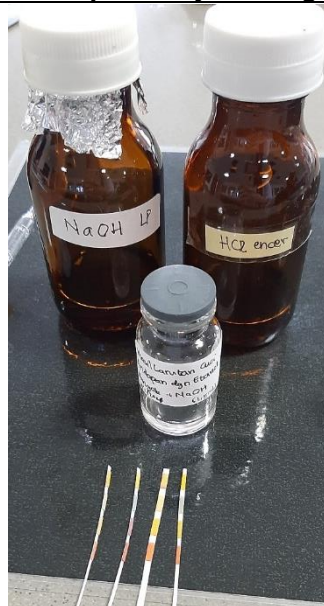
Gambar 20

Cairan cuci derivat asam kojik dengan aseton *pro analysis* hangat



Gambar 21

Cairan cuci derivat asam kojik dengan etanol *pro analysis* hangat



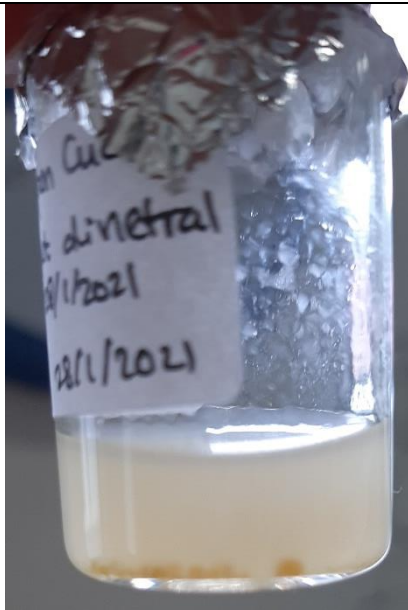
Gambar 22

Penetralkan cairan cuci derivat asam kojik dengan etanol *pro analysis* hangat



Gambar 23

Proses rotavapor cairan cuci derivat asam kojik dengan etanol *pro analysis* hangat (dinetralkan)



Gambar 24

Hasil rotavapor cairan cuci derivat asam kojik dengan etanol *pro analysis* hangat (dinetralkan)



Gambar 25

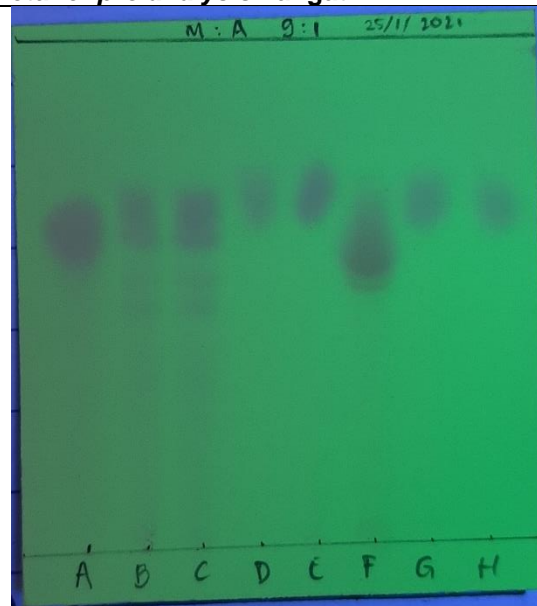
Monitoring purifikasi dengan fase gerak aseton:heksan (3:1)

A: asam kojik
B: hasil refluks
C: filtrat refluks
D: cairan cuci derivat asam kojik dengan aseton *pro analysis* hangat
E: Cairan cuci derivat asam kojik dengan etanol *pro analysis* hangat



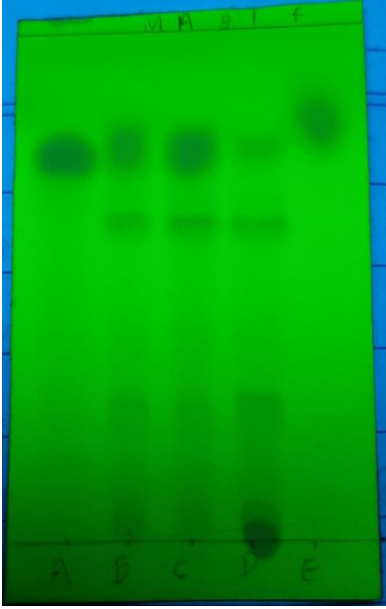
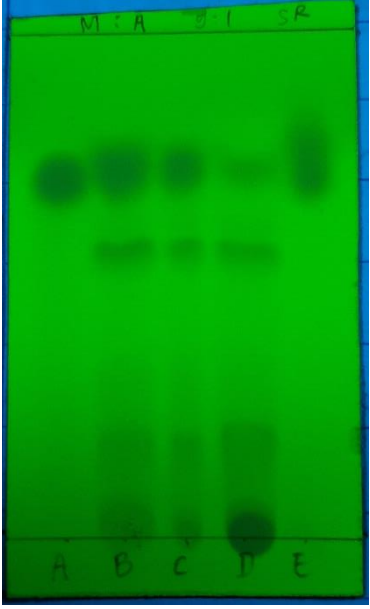
Gambar 26

Monitoring purifikasi dengan fase gerak metanol:air (9: 1)



Gambar 27

Monitoring purifikasi dengan fase gerak metanol:air (9:1)

<p>A: asam kojik B: Cairan cuci derivat asam kojik dengan etanol <i>pro analysis</i> hangat</p>	<p>A: asam kojik B: hasil refluks C: filtrat refluks D: cairan cuci derivat asam kojik dengan etanol <i>pro analysis</i> hangat E: cairan cuci derivat asam kojik dengan etanol <i>pro analysis</i> hangat (diuapkan) F: cairan cuci derivat asam kojik dengan etanol <i>pro analysis</i> hangat (dinetralkan dan diuapkan) G: cairan cuci derivat asam kojik dengan etanol <i>pro analysis</i> hangat dinetralkan (suhu ruang) H: cairan cuci derivat asam kojik dengan etanol <i>pro analysis</i> hangat dinetralkan (freezer)</p>
	
<p>Gambar 28 Monitoring purifikasi dengan fase gerak metanol:air (9:1) A: asam kojik B: hasil refluks C: filtrat refluks (freezer) D: cairan cuci derivat asam kojik dengan aseton <i>pro analysis</i> (freezer) E: cairan cuci derivat asam kojik dengan etanol <i>pro analysis</i> (dinetralkan)</p>	<p>Gambar 29 Monitoring purifikasi dengan fase gerak metanol:air (9:1) A: asam kojik B: hasil refluks C: filtrat refluks (suhu ruang) D: cairan cuci derivat asam kojik dengan aseton <i>pro analysis</i> (suhu ruang) E: cairan cuci derivat asam kojik dengan etanol <i>pro analysis</i> (dinetralkan)</p>



Gambar 30
Derivat asam kojik (sebelum diuapkan)



Gambar 31
Cairan cuci derivat asam kojik dengan etanol *pro analysis* hangat (yang telah dinetralkan)

LAMPIRAN 3

PERHITUNGAN *YIELD*

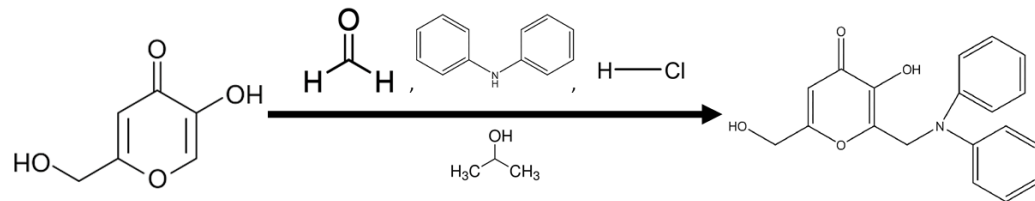
Bobot asam kojik: 142,11 mg

Bobot derivat hasil sintesis: 66,9 mg

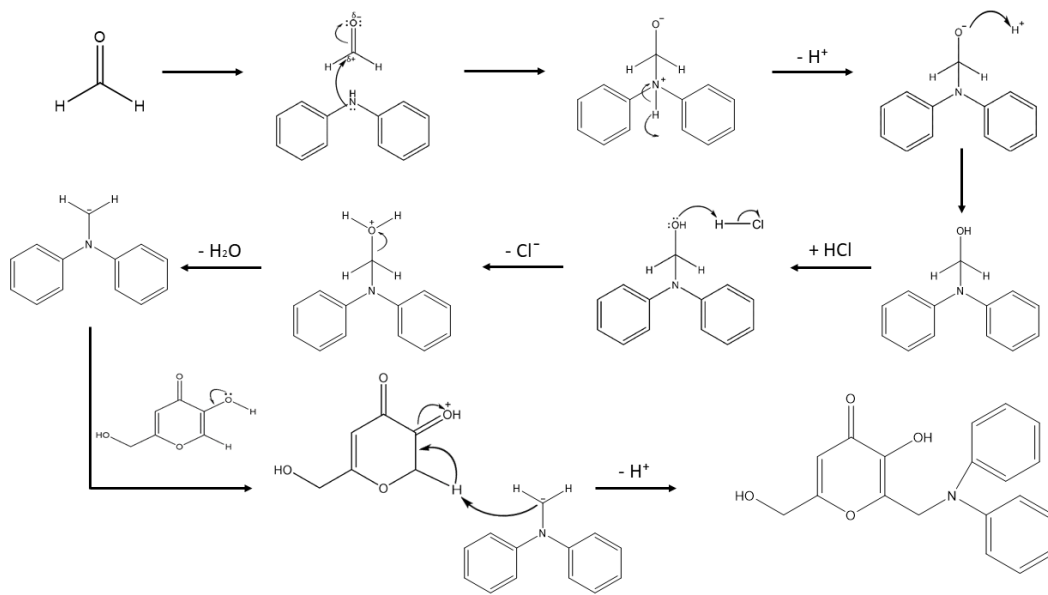
$$\% \text{ Yield} = \frac{66,9 \text{ mg}}{142,11 \text{ mg}} \times 100\% = 47,08\%$$

LAMPIRAN 4

SKEMA PROPOSED REACTION MECHANISM



(a)

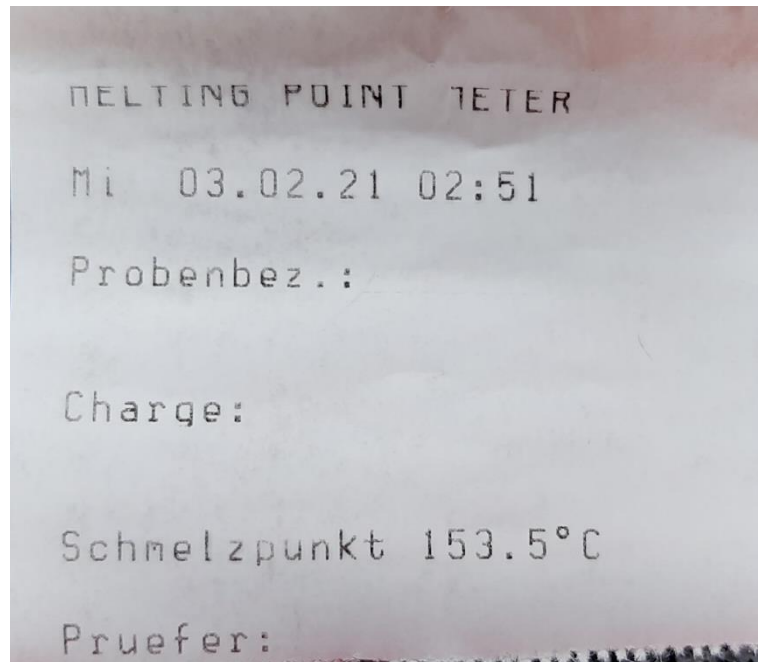


(b)

Gambar 32. Skema *Proposed Reaction Mechanism* Sintesis Derivat Asam Kojik dengan Mannich Base

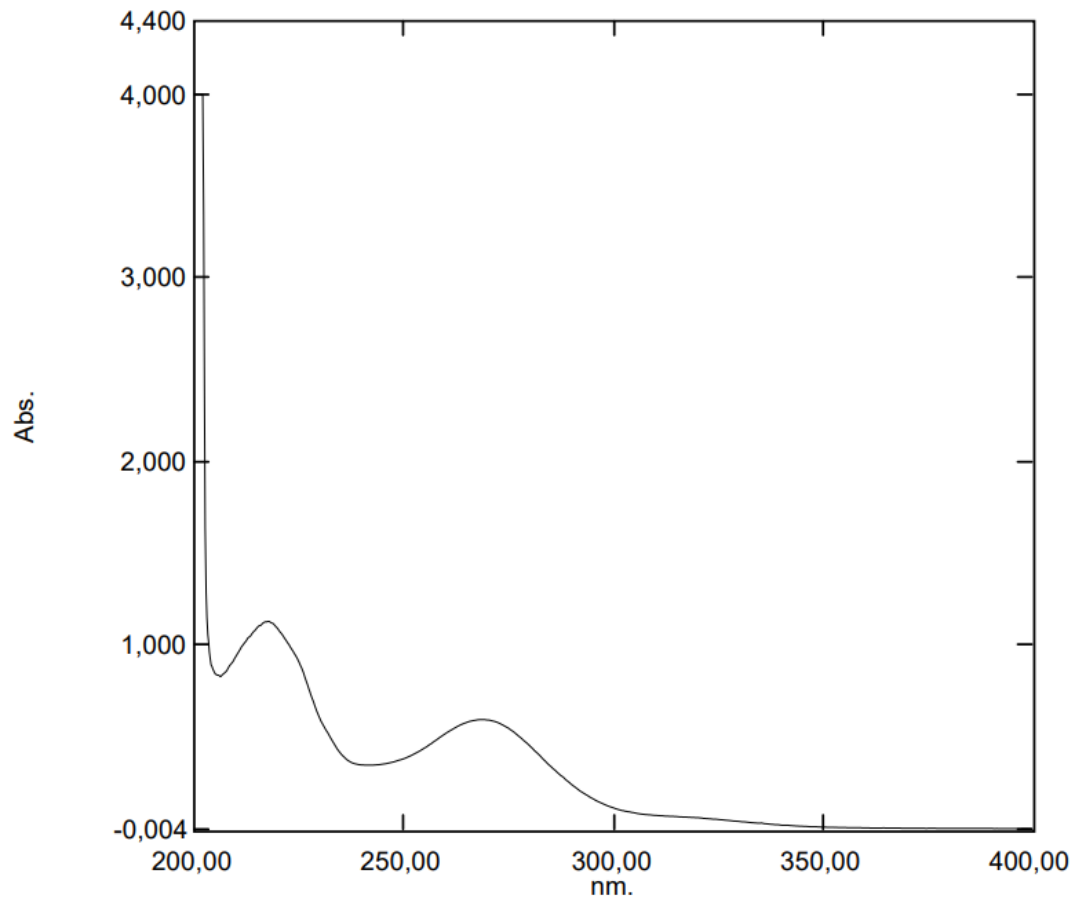
LAMPIRAN 5
DATA PENELITIAN

Melting Point Asam Kojik



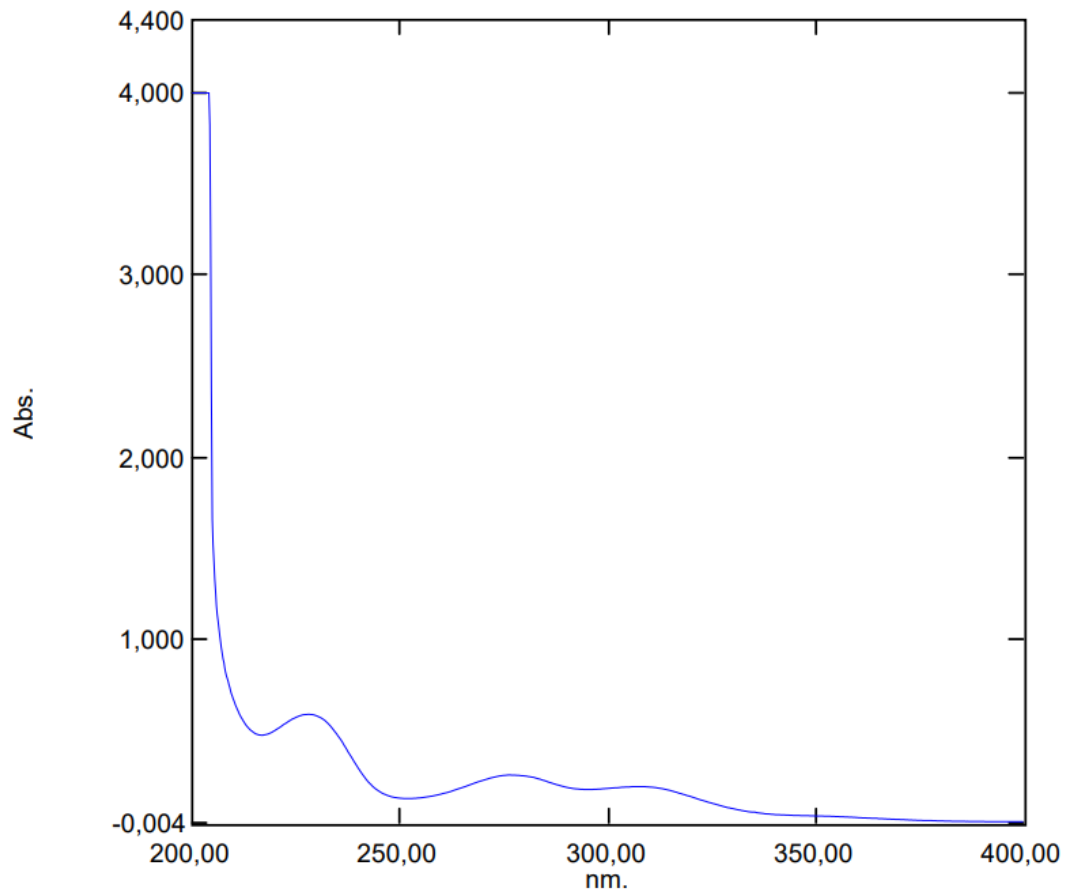
Gambar 33. Titik Leleh Asam Kojik

Spektra Spektrofotometer UV-Vis



No.	P/V	Wavelength	Abs.	Description
1	↑	389,60	0,001	
2	↑	364,60	0,003	
3	↑	269,00	0,594	
4	↑	217,80	1,128	
5	↓	241,60	0,345	
6	↓	206,20	0,827	

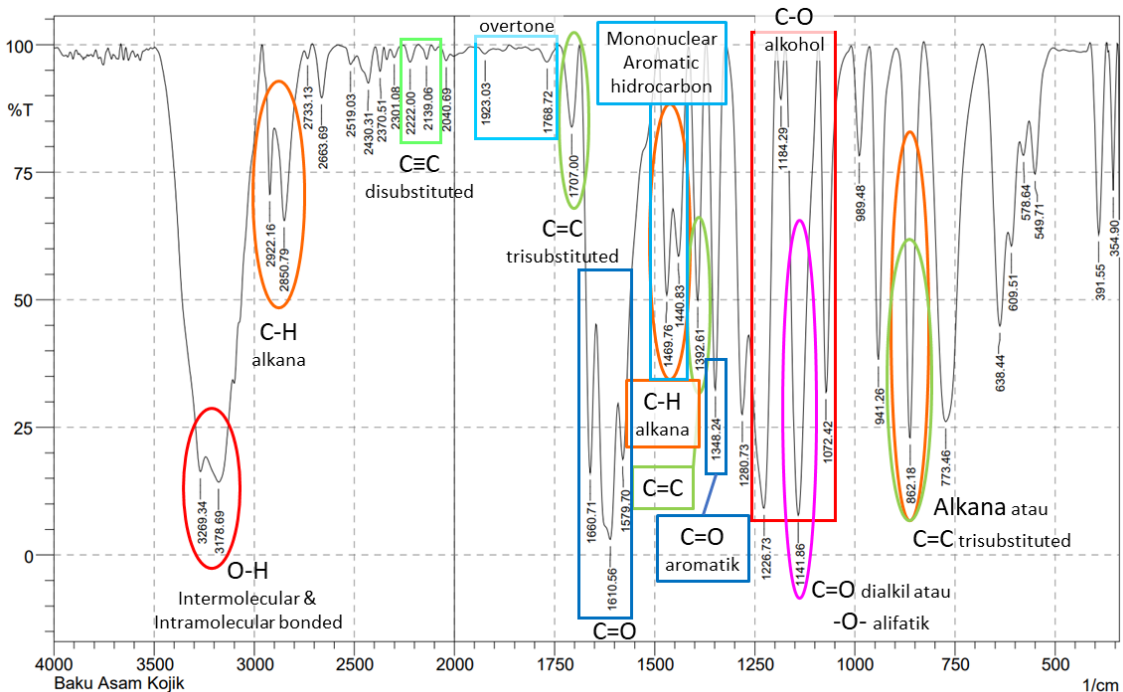
Gambar 34. Spektra UV Asam Kojik 10 ppm



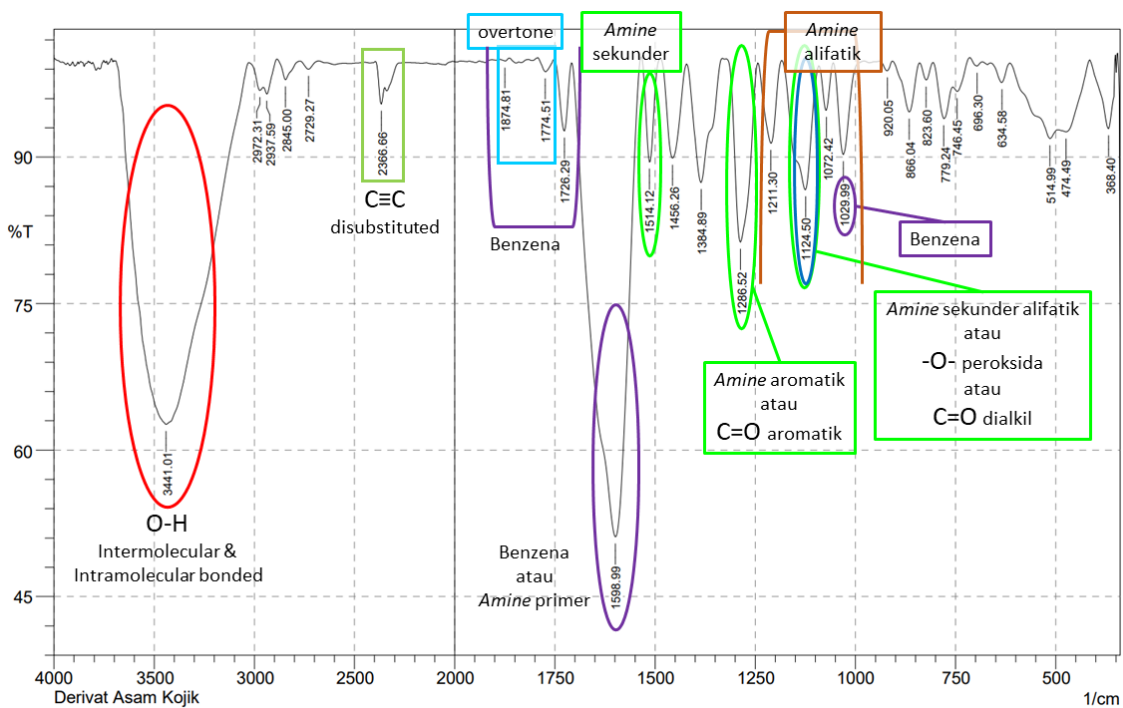
No.	P/V	Wavelength	Abs.	Description
1	↑	308,20	0,195	
2	↑	276,40	0,258	
3	↑	228,00	0,591	
4	↓	295,20	0,179	
5	↓	251,60	0,129	
6	↓	216,60	0,477	

Gambar 35. Spektra UV Derivat Asam Kojik 10 ppm

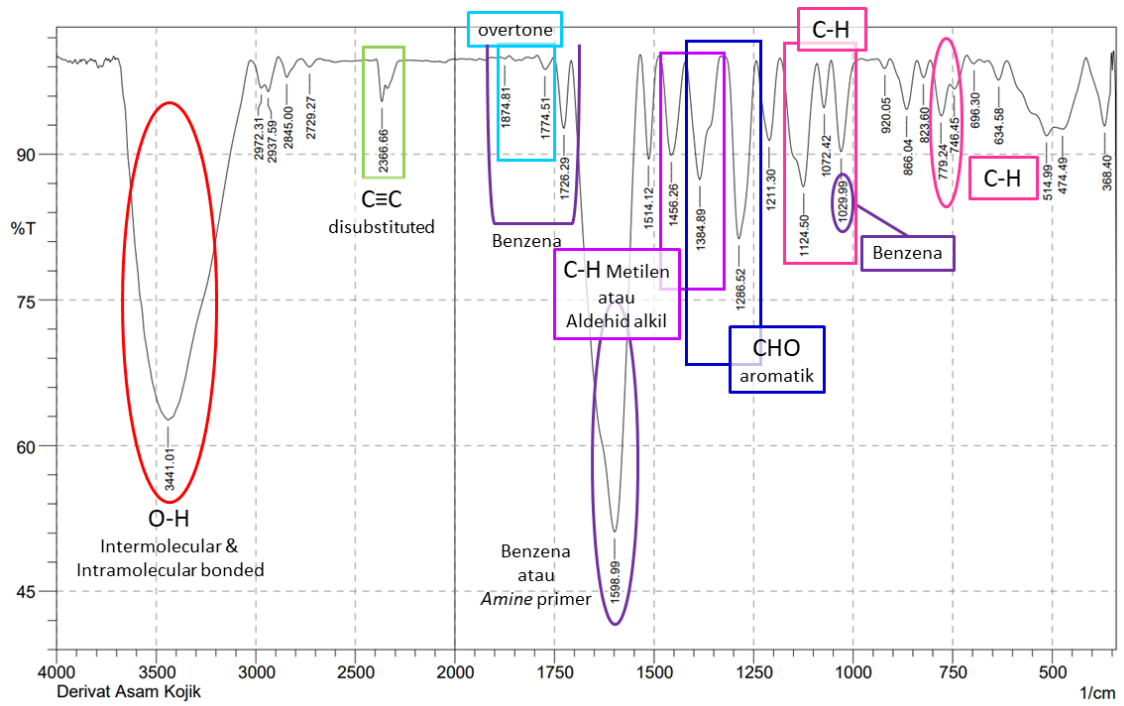
Spektra Spectrophotometer Infrared



Gambar 36. Spektra IR Asam Kojik



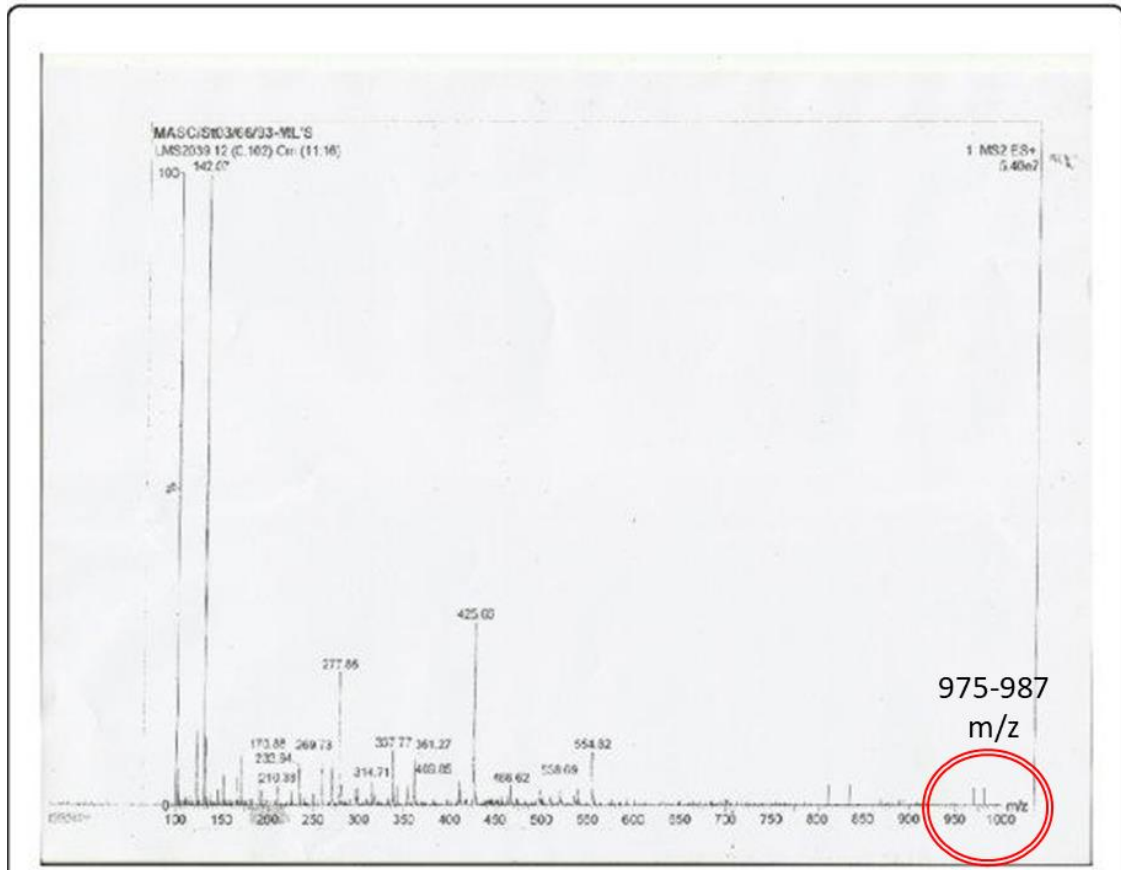
(a)



(b)

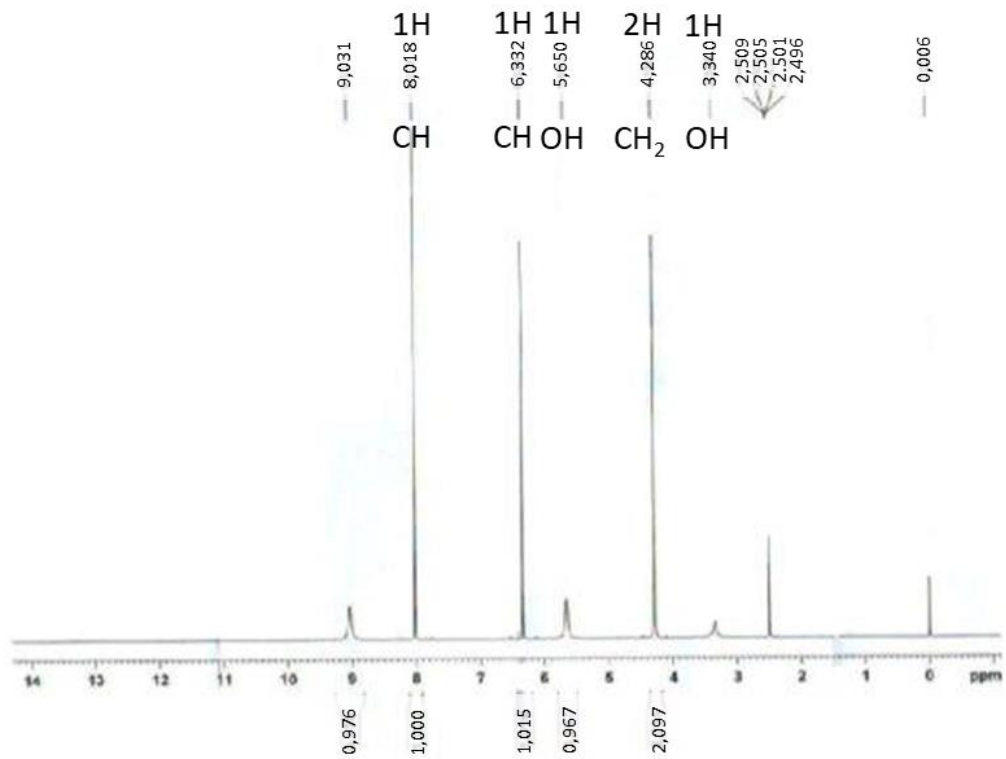
Gambar 37. Spektra IR Derivat Asam Kojik

Spektra Mass Spectrophotometer

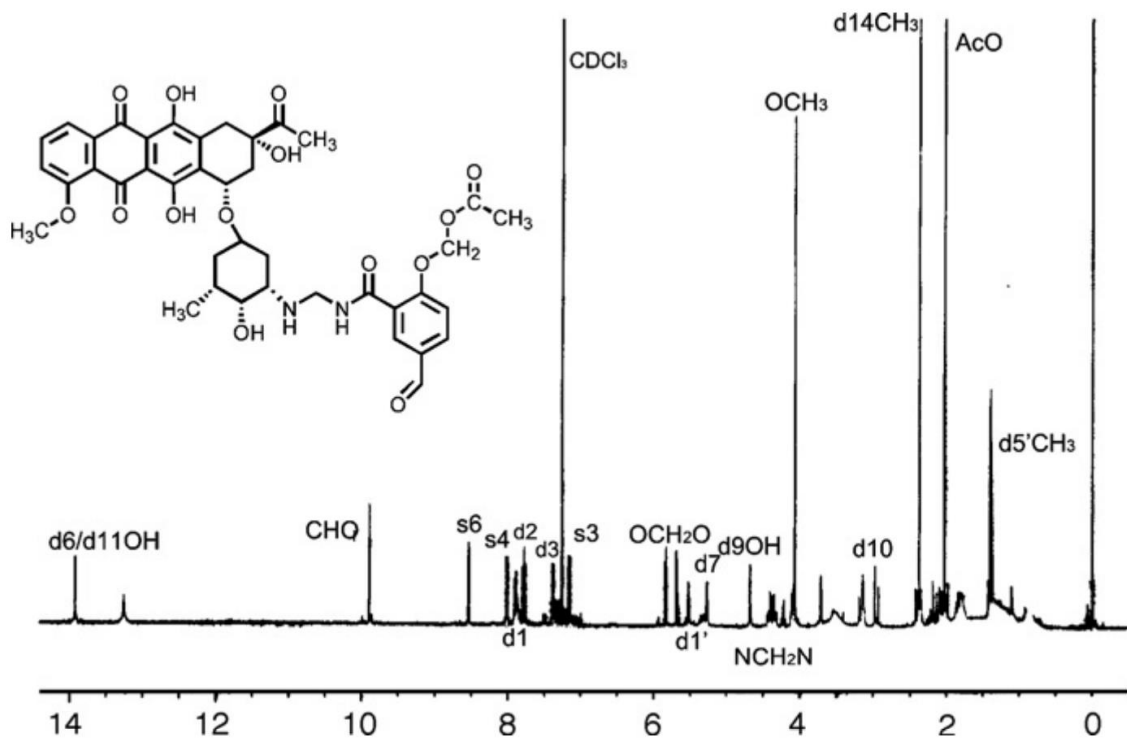


Gambar 38. Spektra Mass Spectrophotometer Derivat Asam Kojik

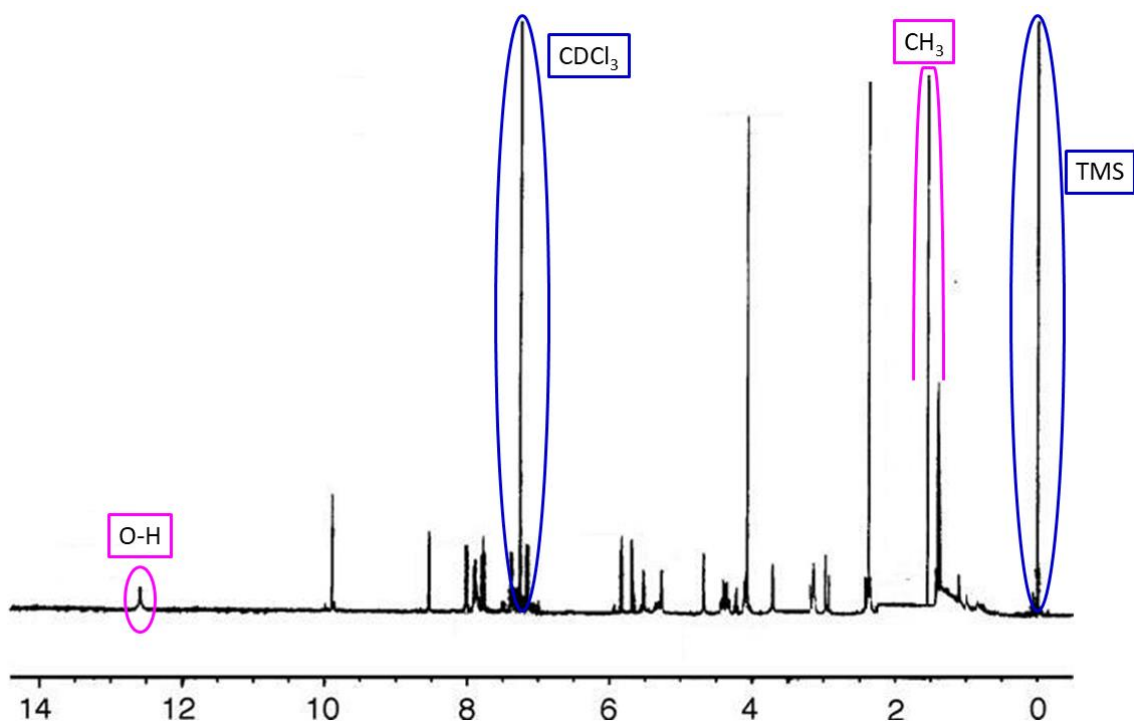
Spektra $^1\text{H-NMR}$



Gambar 39. Spektra $^1\text{H-NMR}$ Asam Kojik



Gambar 40. Spektra $^1\text{H-NMR}$ Derivat Jurnal (Zhao et al., 2009)



Gambar 41. Spektra $^1\text{H-NMR}$ Derivat Asam Kojik