



Good Quality Improves Life's Quality

PT. MERSIFARMA TM.
DIVISI MANUFACTURING
SUKABUMI - INDONESIA

METODE ANALISA PRODUK

CHLORPROMAZINE HCl 50 mg / 2 mL INJEKSI

**PRODUCT ANALYSIS METHOD OF
CHLORPROMAZINE HCl 50 mg / 2 mL INJECTION**

DEPARTMENT
RESEARCH AND DEVELOPMENT

SECTION
ANALYTICAL DEVELOPMENT

Page 7 of 13

Document No. :

MPOJ/00275.01

Creation Date :

05 AUG 2025

6. PENETAPAN KADAR^(1,2)

ASSAY^(1,2)

- 6.1. Persyaratan : Sesuai dengan spesifikasi produk yang berlaku.
Requirement In accordance with applicable product specifications.
- 6.2. Metode : Spektrofotometri
Method Spectrophotometry
- 6.3. Panjang Gelombang : 254 ± 2 nm dan 277 ± 2 nm
Wavelength 254 ± 2 nm and 277 ± 2 nm
- 6.4. Pelarut : Hydrochloric acid 0,1 N
Solution Hydrochloric acid 0.1 N

Catatan : Pastikan standar dan sampel terlindung dari cahaya serta gunakan labu ukur amber.

Note : Make sure the standard and sample are protected from light and use an amber volumetric flask.

6.5. Pembuatan Hydrochloric acid 0,1 N

Making 0.1 N Hydrochloric acid

6.5.1. Pipet 9,83 mL Hydrochloric acid 32% ke dalam gelas piala yang telah berisi 800 mL purified water.

Pipette 9.83 mL of 32% Hydrochloric acid into a beaker glass which already contains 800 mL of purified water.

6.5.2. Tambahkan purified water sampai 1000 mL, aduk sampai homogen.

Add purified water up to 1000 mL, stir until homogeneous

6.6. Penetapan Kadar

Assay

6.6.1. Larutan standar (Konsentrasi = $8 \mu\text{g/mL}$)

Standard solution (Concentration = $8 \mu\text{g/mL}$)

6.6.1.1. Timbang seksama 8,0 mg Chlorpromazine HCl WS, masukkan ke dalam labu ukur 100 mL.

Weigh accurately 8.0 mg Chlorpromazine HCl WS, put into 100 mL volumetric flask.

6.6.1.2. Tambahkan 50 mL pelarut, sonikasikan 10 menit.

Add 50 mL solvent, sonicate for 10 minutes.

6.6.1.3. Tambahkan pelarut sampai tanda batas, kocok sampai homogen.

Add solvent up to volume, shake until homogeneous.

6.6.1.4. Pipet 1.0 mL larutan, masukkan ke dalam labu ukur 10 mL.

Pipette 1.0 mL solution, put into 10 mL volumetric flask.

6.6.1.5. Tambahkan pelarut sampai tanda batas, kocok sampai homogen.

Add solvent up to volume, shake until homogeneous.

Put 17/26



6.6.2. Larutan sampel (Konsentrasi = 8 µg/mL)
Sample solution (Concentration = 8 µg/mL)

6.6.2.1. Pipet 4,0 mL Chlorpromazine HCl 50 mg/ 2 mL setara dengan 100 mg Chlorpromazine HCl, masukkan ke dalam labu ukur 500 mL.

Pipette 4.0 mL Chlorpromazine HCl 50 mg/ 2 mL equivalent 100 mg Chlorpromazine HCl, put into 500 mL volumetric flask.

6.6.2.2. Tambahkan 250 mL pelarut, sonikasikan 10 menit.

Add 250 mL solvent, sonicate for 10 minutes.

6.6.2.3. Tambahkan pelarut sampai tanda batas, kocok sampai homogen.

Add solvent up to volume, shake until homogeneous.

6.6.2.4. Pipet 10 mL larutan, masukkan ke dalam gelas kimia 100 mL.

Pipette 10 mL solution, put into 100 mL beaker glass.

6.6.2.5. Tambahkan 20 mL purified water, aduk hingga homogen.

Add 20 mL purified water, stir until homogenous.

6.6.2.6. Adjust pH larutan hingga pH 8,0 dengan amonium hidroksida P.

Adjust pH solution until 8.0 with ammonium hydroxide P.

6.6.2.7. Masukkan larutan ke dalam corong pisah 250 mL.

Put the solution into separating funnel.

6.6.2.8. Ekstraksi menggunakan 25 mL eter selama 4x, ambil bagian atas untuk dikumpulkan (ekstrak eter).

Extraction with 25 mL Ether 4x, take the top part to collect (ether extract).

6.6.2.9. Ekstraksi kumpulan ekstrak eter menggunakan 25 mL HCl 0,1 N sebanyak 4x, ambil bagian bawah untuk dikumpulkan (ekstrak asam).

Extract the ether extract collection using 25 mL of 0.1 N HCl 4 x, take the bottom part to collect (acid extract).

6.6.2.10. Masukkan kumpulan ekstrak asam ke dalam labu ukur 250 mL, udarkan labu di dalam lemari asam selama 10 menit untuk menguapkan sisa eter.

Put the collection of acid extract into a 250 mL volumetric flask, air the flask in a fume cupboard for 10 minutes to evaporate the remaining ether.

6.6.2.11. Tambahkan pelarut sampai tanda batas, kocok sampai homogen.

Add solvent up to volume, shake until homogeneous.

6.6.3. Prosedur
Procedure

Ukur serapan larutan sampel dan larutan standar pada panjang gelombang 254 ± 2 nm dan 277 ± 2 nm, atau pada panjang gelombang maksimum dari hasil wavelength scan pada larutan standar. Gunakan pelarut sebagai blangko.

Measure the absorbance of the sample solution and standard solution at wavelengths 254 ± 2 nm and 277 ± 2 nm, or at the maximum wavelength obtained from wavelength scan of the standard solution. Use solvent as a blank.

[Signature]
 26/07/2025

<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
--------------------	--------------------	--------------------	--------------------	--------------------



Good Quality Improves Life's Quality

PT. MERSIFARMA TM.
SUKABUMI-INDONESIA

**PROTOKOL TRANSFER METODE ANALISA
PENETAPAN KADAR, IDENTIFIKASI A, DAN
CEMARAN ORGANIK RANITIDINE DALAM
RANITIDINE 150 TABLET SALUT SELAPUT
SECARA KCKT**

**TRANSFER PROTOCOL FOR METHOD ANALYSIS
ASSAY, IDENTIFICATION A, AND ORGANIC
IMPURITY OF RANITIDINE IN RANITIDINE 150
FILM COATED TABLETS BY HPLC**

Halaman	:	4 dari 12
Pages	:	4 of 12
No. Dokumen	:	RD.02-PTP/162.00
Documen Number	:	
Tanggal Dokumen Disetujui	:	
Document Approved Date	:	
Menggantikan No.	:	-
Replaces No.	:	

4.5. Penetapan Kadar

Assay

4.5.1. Persyaratan : Sesuai dengan spesifikasi bahan awal yang berlaku.

Requirement : In accordance with applicable product specifications.

4.5.2. Metode : Kromatografi Cair Kinerja Tinggi

Method : High Performance Liquid Chromatography

4.5.3. Kondisi Pengerjaan KCKT

HPLC Operating Condition

**Kondisi khusus : Hindari kontak langsung dengan cahaya saat preparasi.
Gunakan labu ukur amber.**

Special Condition : Avoid direct light exposure during preparation. Use amber volumetric flasks.

4.5.3.1. Kolom : Kolom Pursuit Agilent C18 4,6 x 250 mm 10 µm (L1)
Column : C18 4.6 x 250 mm 10 µm Agilent Pursuit Column (L1)

4.5.3.2. Aliran pompa : 1.0 mL / menit
Pump flow rate : 1.0 mL / minute

4.5.3.3. Panjang gelombang detektor : 322 nm
Detector wavelength : 322 nm

4.5.3.4. Volume suntikkan : 10 µL
Injection volume : 10 µL

4.5.3.5. Fase gerak : Metanol : Amonium asetat 0.1 M (61 : 39)
Mobile phase : Methanol : Ammonium Acetate 0.1 M (61 : 39)

4.5.3.6. Pelarut : Metanol : Amonium asetat 0.1 M (61 : 39)
Solvent : Methanol : Ammonium Acetate 0.1 M (61 : 39)

4.5.3.7. Waktu Retensi : Ranitidine HCl : 3 menit ± 1 menit
Retention Time : Ranitidine HCl : 3 minutes ± 1 minute
Senyawa sejenis C : 2.5 menit ± 1 menit
Related compound C : 2.5 minutes ± 1 minute

4.5.3.8. Waktu Berakhir : 5 menit ± 1 menit
End Time : 5 minutes ± 1 minute

4.5.4. Alat

Equipments

4.5.4.1. Timbangan Analitik
Analytical Balance

4.5.4.2. Gelas Kimia 1000 mL
1000 mL Beaker Glass

4.5.4.3. Labu ukur Amber 10 mL
10 mL amber volumetric flask

4.5.4.4. Labu ukur Amber 50 mL
50 mL amber volumetric flask

4.5.4.5. Labu ukur amber 250 mL
250 mL amber volumetric flask

4.5.4.6. Pipet volumetrik 1 mL
1 mL Volumetric pipette

4.5.4.7. Pipet mikro
Micro pipette

4.5.4.8. Syringe filter PTFE 0.45 µm
PTFE syringe filter 0.45 µm

Handwritten signature and date: 17/26



Good Quality Improves Life's Quality

PT. MERSIFARMA TM.
SUKABUMI-INDONESIA

**PROTOKOL TRANSFER METODE ANALISA
PENETAPAN KADAR, IDENTIFIKASI A, DAN
CEMARAN ORGANIK RANITIDINE DALAM
RANITIDINE 150 TABLET SALUT SELAPUT
SECARA KCKT**

**TRANSFER PROTOCOL FOR METHOD ANALYSIS
ASSAY, IDENTIFICATION A, AND ORGANIC
IMPURITY OF RANITIDINE IN RANITIDINE 150
FILM COATED TABLETS BY HPLC**

Halaman	:	5 dari 12
Pages	:	5 of 12
No. Dokumen	:	RD.02-PTP/162.00
Document Number	:	
Tanggal Dokumen Disetujui	:	
Document Approved Date	:	
Menggantikan No.	:	
Replaces No.	:	

4.5.4.9. Vial HPLC
HPLC vials

4.5.5. Bahan
Materials

- 4.5.5.1. Ammonium Acetate
Ex. Smartlab Cat. No. A-2001
- 4.5.5.2. Methanol
Ex. Thermo Fisher Cat. No. A452-4
- 4.5.5.3. Ranitidine Related Compound C
Ex. USP Cat. No. 1598700
- 4.5.5.4. Ranitidine HCl Working Standard

4.5.6. Pembuatan Larutan
Preparation of Solution

- 4.5.6.1. Pembuatan Larutan Amonium Asetat 0.1 M
Preparation of Ammonium Acetate 0.1 M Solution
- Timbang saksama 7.708 g Amonium asetat.
Weigh carefully 7.708 g of Ammonium Acetate.
 - Masukkan ke dalam gelas ukur 1000 mL.
Put into 1000 mL beaker glass.
 - Tambahkan 1000 mL air murni, kocok sampai homogen.
Add 1000 mL purified water, shake until homogenous.
- 4.5.6.2. Larutan Induk Senyawa Sejenis C Ranitidin (0.1 mg/mL)
Ranitidine Related Compound C Main Solution (0.1 mg/mL)
- Timbang saksama 5 mg Senyawa Sejenis C Ranitidine.
Weigh carefully 5 mg of Ranitidine Related Compound C.
 - Masukkan ke dalam labu ukur 50 mL.
Put into 50 mL volumetric flask.
 - Tambahkan pelarut sampa tanda batas, kocok sampai homogen.
Add solvent solution up to the limit mark, shake until homogenous.
- 4.5.6.3. Larutan Induk Standar (1.0 mg/mL)
Standard Main Solution (1.0 mg/mL)
- Timbang saksama 11.2 mg Ranitidine HCl WS setara dengan 10 mg Ranitidine ke dalam labu ukur 10 mL.
Weigh carefully 11.2 mg Ranitidine HCl WS equivalent to 10 mg Ranitidine, put into 10 mL volumetric flask.
 - Tambahkan pelarut sampai tanda batas, sonikasikan selama 10 menit.
Add solvent up to the limit mark, sonicate 10 minutes.
- 4.5.6.4. Larutan Standar (0,1 mg/mL)
Standard Solution (0.1 mg/mL)
- Pipet 1.0 mL larutan induk standar, masukkan ke dalam labu ukur 10 mL.
Pipette 1.0 mL standard main solution, put into 10 mL volumetric flask.
 - Tambahkan pelarut sampai tanda batas, kocok sampai homogen.
Add solvent up to volume, shake until homogeneous.

17/10/20



Good Quality Improves Life's Quality

PT. MERSIFARMA TM.
SUKABUMI-INDONESIA

**PROTOKOL TRANSFER METODE ANALISA
PENETAPAN KADAR, IDENTIFIKASI A, DAN
CEMARAN ORGANIK RANITIDINE DALAM
RANITIDINE 150 TABLET SALUT SELAPUT
SECARA KCKT**

**TRANSFER PROTOCOL FOR METHOD ANALYSIS
ASSAY, IDENTIFICATION A, AND ORGANIC
IMPURITY OF RANITIDINE IN RANITIDINE 150
FILM COATED TABLETS BY HPLC**

Halaman	:	6 dari 12
Pages	:	6 of 12
No. Dokumen	:	RD.02-PTP/162.00
Document Number	:	
Tanggal Dokumen Disetujui	:	
Document Approved Date	:	
Menggantikan No.	:	
Replaces No.	:	

4.5.6.5. Larutan Kesesuaian Sistem

System Suitability Solution

- a. Pipet 1 mL larutan induk standar, masukkan ke dalam labu ukur 10 mL.

Pipette 1 mL of standard main solution, put into a 10 mL volumetric flask.

- b. Tambahkan 1 mL larutan induk senyawa sejenis C Ranitidine.

Add 1 mL of Ranitidine related compound C main solution.

- c. Tambahkan pelarut sampai tanda batas, kocok sampai homogen.

Add solvent up to the mark and shake until homogeneous.

4.5.6.6. Larutan Sampel (Konsentrasi = 0,1 mg/mL)

Sample Solution (Concentration = 0.1 mg/mL)

- a. Timbang dan masukkan 10 tablet salut selaput ranitidine ke dalam labu ukur 250 mL.

Weigh and put 10 film coated tablets ranitidine into 250 mL volumetric flask.

- b. Tambahkan 250 mL pelarut, kocok selama 45 menit hingga tablet hancur.

Add 250 mL solvent, shake for 45 minutes until tablets disintegrates.

- c. Saring larutan menggunakan kertas saring.

Filter solution using filter paper.

- d. Pipet 0.9 mL filtrat, masukkan ke dalam labu ukur 50 mL.

Pipette 0.9 mL of filtrate, put into 50 mL volumetric flask.

- e. Tambahkan pelarut sampa tanda batas, kocok sampai homogen.

Add solvent up to the limit mark, shake until homogeneous.

- f. Saring larutan menggunakan syringe filter 0,45µm PTFE.

Filter solution using PTFE 0.45 µm syringe filter.

- g. Masukkan ke dalam vial HPLC.

Put into HPLC vial.

4.5.7. Uji Kesesuaian Sistem

System Suitability Solution

- 4.5.7.1. Suntikkan larutan standar dan larutan uji kesesuaian sistem ke dalam sistem HPLC.

Inject standard solution and system suitability solution into the HPLC system.

- 4.5.7.2. Ukur respons puncak utama dan hitung RSD dari hasil perhitungan alat.

Measure the main peak response and calculate RSD using instrument output.

- a. Kriteria keberterimaan Larutan Standar

Acceptance criteria Standard Solution

- RSD luas area $\leq 2.0\%$

RSD area $\leq 2.0\%$

- RSD waktu retensi $\leq 2.0\%$

RSD retention time $\leq 2.0\%$

- Faktor Ikutan ≤ 2.0

Tailing Factors ≤ 2.0

- Jumlah Lempeng Teoritis ≥ 700

Theoretical Plate Count ≥ 700

- b. Kriteria keberterimaan Larutan Kesesuaian Sistem

Acceptance criteria System Suitability Solution

- Resolusi ≥ 1.5 (antara Ranitidine HCl dan Senyawa Sejenis C Ranitidine)

Resolution ≥ 1.5 (between Ranitidine HCl and Ranitidine Related Compound C)

[Signature]
17/26
007



Good Quality Improves Life's Quality

PT. MERSIFARMA TM.
SUKABUMI-INDONESIA

**PROTOKOL TRANSFER METODE ANALISA
PENETAPAN KADAR, IDENTIFIKASI A, DAN
CEMARAN ORGANIK RANITIDINE DALAM
RANITIDINE 150 TABLET SALUT SELAPUT
SECARA KCKT
TRANSFER PROTOCOL FOR METHOD ANALYSIS
ASSAY, IDENTIFICATION A, AND ORGANIC
IMPURITY OF RANITIDINE IN RANITIDINE 150
FILM COATED TABLETS BY HPLC**

Halaman	:	8 dari 12
Pages		8 of 12
No. Dokumen	:	RD.02-PTP/162.00
Document Number		
Tanggal Dokumen Disetujui	:	
Document Approved Date		
Menggantikan No.	:	-
Replaces No.		

4.6. Penetapan Kadar Cemarannya Organik

Organic Impurity Test

- 4.6.1. Persyaratan : Sesuai dengan spesifikasi bahan awal yang berlaku.
Requirement In accordance with applicable product specifications.
- 4.6.2. Metode : Kromatografi Lapis Tipis
Method Thin Layer Chromatography
- 4.6.3. Kondisi Pengerjaan KLT
TLC Operating Condition
- 4.6.3.1. Lempeng kromatografi : KLT Silica Gel 60 F254 setebal 0,25 mm
Adsorbent TLC Silica Gel 60 F254 0.25 mm thick
- 4.6.3.2. Jarak rambat eluen : 15 cm
Eluent Distance 15 cm
- 4.6.3.3. Volume penotolan : 20 µL
Application Volume 20 µL
- 4.6.3.4. Pelarut : Metanol
Solvent Methanol
- 4.6.3.5. Fase gerak : Campuran etil asetat : isopropil alkohol : amonium hidroksida : purified water (25 : 15 : 5 : 1)
Mobile Phase Mixture of ethyl acetate : isopropyl alcohol : ammonium hydroxide : purified water (25 : 15 : 5 : 1)
- 4.6.4. Pembuatan Larutan
Preparation of Solution
- 4.6.4.1. Larutan Induk Standar (0,220 mg/mL)
Standard Main Solution (0.220 mg/mL)
- a. Timbang saksama 11 mg Ranitidine HCl WS, masukkan ke dalam labu ukur 50 mL.
Weigh accurately 11 mg Ranitidine HCl WS, put into 50 mL volumetric flask.
- b. Tambahkan 25 mL pelarut, sonikasikan ± 10 menit.
Add 25 mL solvent, sonicate ± 10 minutes.
- c. Tambahkan pelarut sampai tanda batas, kocok sampai homogen.
Add solvent up to volume, shake until homogeneous.
- 4.6.4.2. Larutan Standar A (0,11 mg/mL)
Standard Solution A (0.11 mg/mL)
- a. Pipet 5.0 mL larutan induk standar, masukkan ke dalam labu ukur 10 mL.
Pipette 5.0 mL standard main solution, put into 10 mL volumetric flask.
- b. Tambahkan pelarut sampai tanda batas, kocok sampai homogen.
Add solvent up to volume, shake until homogeneous.
- 4.6.4.3. Larutan standar B (0,066 mg/mL)
Standard Solution B (0.066 mg/mL)
- a. Pipet 3.0 mL larutan induk standar, masukkan ke dalam labu ukur 10 mL.
Pipette 3.0 mL standard main solution, put into 10 mL volumetric flask.
- b. Tambahkan pelarut sampai tanda batas, kocok sampai homogen.
Add solvent up to volume, shake until homogeneous.
- 4.6.4.4. Larutan standar C (0,022 mg/mL)
Standard Solution C (0.022 mg/mL)
- a. Pipet 1.0 mL larutan induk standar, masukkan ke dalam labu ukur 10 mL.
Pipette 1.0 mL standard main solution, put into 10 mL volumetric flask.



Good Quality Improves Life's Quality

PT. MERSIFARMA TM.
SUKABUMI-INDONESIA

**PROTOKOL TRANSFER METODE ANALISA
PENETAPAN KADAR, IDENTIFIKASI A, DAN
CEMARAN ORGANIK RANITIDINE DALAM
RANITIDINE 150 TABLET SALUT SELAPUT
SECARA KCKT**

**TRANSFER PROTOCOL FOR METHOD ANALYSIS
ASSAY, IDENTIFICATION A, AND ORGANIC
IMPURITY OF RANITIDINE IN RANITIDINE 150
FILM COATED TABLETS BY HPLC**

Halaman	:	9 dari 12
Pages	:	9 of 12
No. Dokumen	:	RD.02-PTP/162.00
Documen Number	:	
Tanggal Dokumen Disetujui	:	
Document Approved Date	:	
Menggantikan No.	:	
Replaces No.	:	

- b. Tambahkan pelarut sampai tanda batas, kocok sampai homogen.
Add solvent up to volume, shake until homogeneous.

4.6.4.5. Larutan standar D (0,011 mg/mL)
Standard Solution D (0.011 mg/mL)

- a. Pipet 0.5 mL larutan induk standar masukkan ke dalam labu ukur 10 mL.
Pipette 0.5 mL standard main solution, put into 10 mL volumetric flask.
b. Tambahkan pelarut sampai tanda batas, kocok sampai homogen.
Add solvent up to volume, shake until homogeneous.

4.6.4.6. Larutan Resolusi (1,27 mg/mL)
Resolution Solution (1,27 mg/mL)

- a. Timbang saksama 12.7 mg senyawa sejenis A Ranitidin, masukkan ke dalam labu ukur 10 mL.
Weigh 12.7 mg Ranitidine Related Compound A, put into 10 mL volumetric flask.
b. Tambahkan metanol sampai tanda batas, kocok sampai homogen.
Add methanol up to volume, shake until homogeneous.

4.6.4.7. Larutan Sampel (20 mg/mL Ranitidine ~ 22.4 mg/mL Ranitidine HCl)
Sample Solution (20 mg/mL Ranitidine ~ 22.4 mg/mL Ranitidine HCl)

- a. Timbang dan serbukkan 10 Tablet Salut Selaput Ranitidine 150.
Weigh and grind 10 film-coated Ranitidine 150 tablets.
b. Timbang seksama serbuk Tablet Salut Selaput Ranitidine 150 setara dengan 1000 mg Ranitidine, masukkan ke dalam labu ukur 50 mL.
Accurately weigh the powder Ranitidine 150 film-coated tablets equivalent to 1000 mg of Ranitidine, place into a 50 mL volumetric flask.
$$\frac{1000}{150} \times \text{bobot rata-rata tablet salut selaput}$$

c. Tambahkan 25 mL pelarut, sonikasikan 10 menit.
Add 25 mL of diluent, sonicate for 10 minutes.
d. Tambahkan pelarut sampai tanda batas, kocok sampai homogen.
Add diluent to the mark, mix until homogeneous.
e. Saring larutan menggunakan kertas saring.
Filter the solution using filter paper.

4.6.5. Prosedur
Procedure

- a. Totolkan secara terpisah masing-masing 20 µL larutan induk standar, larutan standar A, B, C, D dan larutan sampel pada lempeng kromatografi.
Apply each 20 µL standard main solution, standard solution A, B, C, D and sample solution into the Chromatography Plate.
b. Totolkan lagi 20 µL larutan sampel pada titik yang berbeda dan tambahkan 20 µL Larutan resolusi diatas totolan tersebut.
Apply 20 µL sample solution again on different spot and add 20 µL resolution solution above that spot.
c. Kering udarkan.
Let it dry.
d. Masukkan lempeng ke dalam bejana yang berisi fase gerak yang telah dijenuhkan dalam bejana. Biarkan merambat di atas garis penotolan ± 15 cm.
Put the plate into the chamber that contain mobile phase. Let the mobile phase going up until ± 15cm.