

## Chloramphenicol HiMIC™ Plate Kit

**MPK016**

### (CHL) (0.5 - 32 mcg/ml)

Antimicrobial Susceptibility Testing

For *In Vitro* Diagnostic use

#### Intended Use:

Chloramphenicol HiMIC™ Plate Kit is ready to use Minimum Inhibitory Concentration (MIC) determination kit by broth microdilution method, capable of showing MIC's of Chloramphenicol against test organism in the range of 0.5 mcg/ml to 32 mcg/ml following specified incubation condition.

#### Kit Contains:

No.	Content	1 KT	3 KT
1.	96 Well HiMIC™ Plate	1 No.	3 No.
2.	HiMIC™ Diluent Tubes	12 No.	36 No.
3.	HiMIC™ Reading card	1 No.	3 No.
4.	HiMIC™ Incubation Tray	1 No.	3 No.

#### Introduction:

HiMIC™ Plate Kit is a broth microdilution method consisting of 96 well microtiter plate with detachable wells. It covers 7 two-fold dilutions in a single detachable well strip covering breakpoint scale which helps in reliable interpretation for Sensitive, Intermediate and Resistance detection with easy visual inspection, in compliance with CLSI and EUCAST guidelines. Detachable well strip is coated with gradient of antibiotics and growth medium which releases upon the rehydration. The detachable strip is coated with highest concentration in the top most well i.e. in "A" well and lowest concentration in the second last well i.e. "G" well whereas last well is a growth control i.e. "H" well. Each detachable well is given along with the antibiotic symbol at the top. HiMIC™ reading card is provided for easy interpretation of the MIC value by visible colour change.

#### METHOD AND USE OF HiMIC™ Plate Kit

- Type of specimen

Pure cultures should be derived from specimens obtained from patients prior to the initiation of antimicrobial therapy. Specimens can be of bacterial or fungal isolates derived from blood, urine, faeces, pus, CSF etc. Direct specimens should not be employed in this test. Refer procedure, which includes preparation of inoculum (1,3).

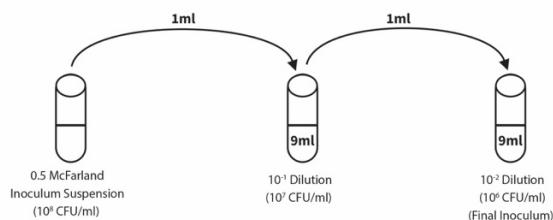
- Clinical specimen collection, handling and processing

Follow appropriate techniques for handling specimens as per established guidelines. After use, contaminated materials must be sterilized by autoclaving before discarding (1,3).

- Preparation of Inoculum

Use only pure cultures. Confirm by Gram-staining before starting susceptibility test. Transfer 4-5 similar colonies with a wire, needle or loop to 5 ml Tryptone Soya Broth (M011) and incubate at 35-37°C for 2-8 hours until light to moderate turbidity develops. Compare the inoculum turbidity with that of standard 0.5 McFarland. Alternatively, the inoculum can be standardized by other appropriate optical method (0.08 - 0.13 OD turbid suspension at 620 nm).

Dilute the inoculum for further two dilutions to get final inoculum of  $10^6$  cfu/ml in saline which is not provided with the kit.



- **Test Procedure**

1. Remove the Chloramphenicol HiMIC™ plate (HMP012) from Aluminum Zip Pouch.
2. Pick up the required number of detachable well strips and cover the remaining wells with the lid provided.
3. Inoculate 200  $\mu$ L of  $10^6$  CFU/ml inoculum into HiMIC™ diluent tube (LQ314II).

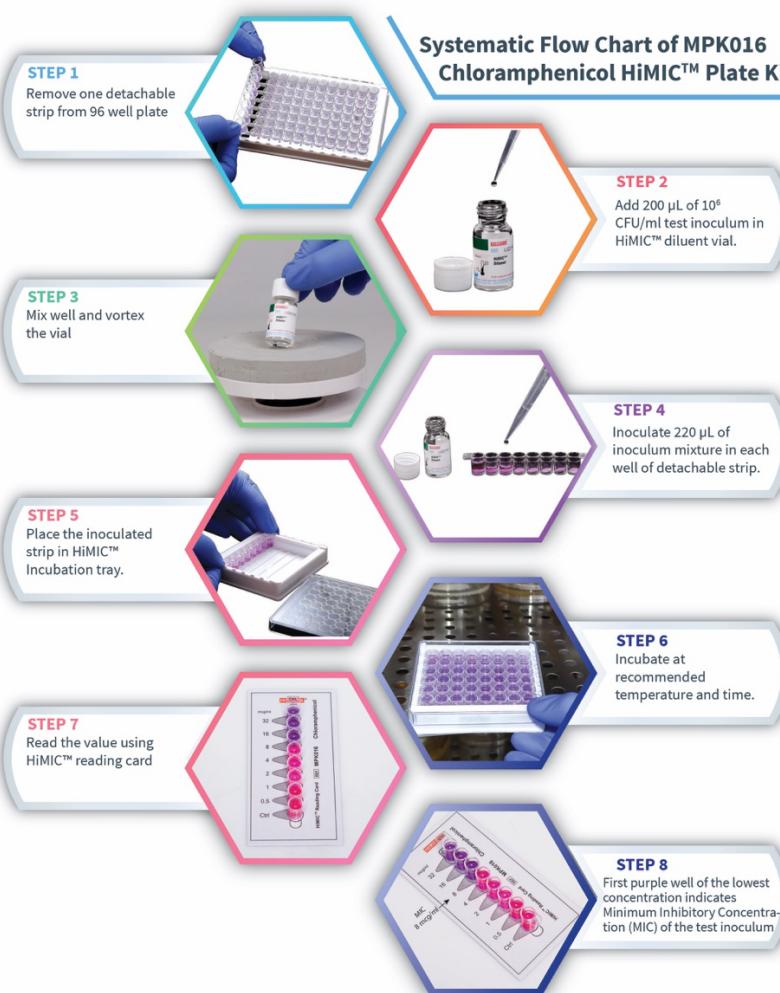
(Note: Use one vial for single inoculum.)

Mix well and vortex the tube

4. Inoculate 220  $\mu$ L of inoculum mixture from above tube into the all 8 wells i.e. "A" to "H" wells
5. Gently shake the well strip and keep it in an incubator tray provided with the kit.
6. Transfer the tray in the incubator under appropriate conditions.

**MIC Reading:**

1. Read the wells when visible color change from purple to pink will be observed (or Read the wells after appropriate incubation.)
2. Remove the detachable well Strip from incubator tray.
3. Place it on the HiMIC™ reading card in the proper direction
4. Read the MIC where lowest concentration of the purple colored well is observed



**Warning and Precautions:**

1. HiMIC™ Plate Kit is intended for *In vitro* diagnostic use only.
2. Although based on simple procedure, HiMIC™ Plate Kit should only be used by at least semi-trained personnel.
3. HiMIC™ Plate Kit, should be used strictly according to procedures described herein.
4. Performance of HiMIC™ Plate Kit depends on use of proper inoculum and control cultures and proper storage temperature.
5. Follow aseptic techniques and precautions against microbiological hazards should be used when handling bacterial or fungal specimen throughout the testing procedure.
6. Place the unused strips back to recommended temperature.

**INTERPRETATION & QUALITY CONTROL (As per CLSI Guidelines) :****Interpretation:**

**Table 1 :** Use following interpretive criteria of Chloramphenicol for susceptibility categorization as per CLSI.

When testing	Incubation	Interpretative Criteria		
		$\leq S$	I	$\geq R$
<i>Enterobacteriales</i> (Excluding <i>Salmonella/Shigella</i> spp), <i>Salmonella</i> and <i>Shigella</i> , <i>Enterococcus</i> spp., <i>Staphylococcus</i> spp., <i>S.maltophilia</i> , <i>B.cepacia</i> , other non- <i>Enterobacteriaceae</i> , <i>Bacillus</i> spp	35-37°C for 18hrs	8	16	32

**Quality Control :**

Quality control of Chloramphenicol HiMIC™ Plate Kit is carried out by testing the strips with standard ATCC Cultures recommended by CLSI on suitable medium incubated appropriately.

**Table 2:** Following are the reference MIC values (mcg/ml) range for Chloramphenicol.

Organism	Incubation	Std. Quality Control limits (mcg/ml)
<i>S.aureus</i> ATCC 29213	35-37°C for 18 hrs.	2.0 – 4.0 – 8.0 -16.0
<i>E.faecalis</i> ATCC 29212	35-37°C for 18 hrs.	4.0 – 8.0 – 16.0
<i>E. coli</i> ATCC 25922	35-37°C for 18 hrs.	2.0 – 4.0 – 8.0

**INTERPRETATION & QUALITY CONTROL (As per EUCAST Guidelines) :****Interpretation:**

**Table 3:** Use following interpretive criteria of Chloramphenicol for susceptibility categorization as per EUCAST.

When testing	Incubation	Interpretive Criteria	
		$\leq S$	$> R$
<i>Enterobacteriaceae</i> , <i>Staphylococcus</i> spp , <i>Streptococcus</i> groups A, B, C and G	35°C $\pm$ 1°C for 18 $\pm$ 2hr	8	8
<i>Burkholderia pseudomallei</i>	35°C $\pm$ 1°C for 18 $\pm$ 2hr	0.001	8

**Quality Control:**

Quality control of Chloramphenicol HiMIC™ Plate Kit is carried out by testing the strips with standard ATCC Cultures recommended by EUCAST on suitable medium incubated appropriately.

**Table 4 :** Following are the reference MIC values (mcg/ml) range for Chloramphenicol.

Organism	Incubation	Target MIC Value (mcg/ml)	Std. Quality Control limits (mcg/ml)
<i>E.coli</i> ATCC 25922	35°C ± 1°C for 18 ± 2hr	4.0	2.0 – 4.0 – 8.0
<i>S.aureus</i> ATCC 29213	35°C ± 1°C for 18 ± 2hr	4.0-8.0	2.0 - 4.0 – 8.0 – 16.0

**Storage & Shelf Life:**

1. Once the consignment is received, store the HiMIC™ Plate Kit at -20°C to 8°C.
2. Use before expiry date on the label.
3. HiMIC™ Plate Kit left over from opened package must be kept dry.
4. Moisture should be prevented from penetrating into or forming within the package or storage container.
5. Check whether the batch number and expiry date are marked on the storage container.
6. Product performance is best within stated expiry period if correctly stored and handled.

**Disposal:**

After use, HiMIC™ Plate Kit and material that comes into contact with clinical sample must be decontaminated and disposed of in accordance with current laboratory techniques (2, 3).

**Limitation of Test**

HiMIC™ Plate Kit provides *In vitro* MIC values, which provides only a possible insinuation of pathogens potential in *In vivo* susceptibility. These values can be considered as a guide to therapy selection only after taking into consideration several other factors; and must be the sole decision and responsibility of the physician along with the clinical experience in treating the infection. These tests are comparable to the standards as per the given specifications and set of experiment standards as far as possible. Please refer to CLSI & EUCAST standards for detailed limitation of susceptibility test on the clinical use of an antibiotic in various therapeutic conditions.

**References:**

1. Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2<sup>nd</sup> Edition, Vol. 1, Section 2.
2. Isenberg, H.D. Clinical Microbiology Procedures Handbook. 2<sup>nd</sup> Edition, Vol. 3, Section 15.
3. Jorgensen, J. H., Pfaller, M.A., Carroll, K.C., Funke, G., Landry, M.L., Richter, S.S and Warnock., D.W. (2015) Manual of Clinical Microbiology, 11th Edition. Vol. 1.
4. Performance Standards of Antimicrobial Susceptibility Testing; 34th Edition. M100-S34, Vol.44, No.5, Jan-2024.
5. European Committee on Antimicrobial Susceptibility Testing Breakpoint tables for interpretation of MICs and zone diameters Version 11.0, valid from 2021-01-01.
6. European Committee on Antimicrobial Susceptibility Testing Breakpoint tables for interpretation of MICs and zone diameters Version 14.0, valid from 2024-01-01.
7. European Committee on Antimicrobial Susceptibility Testing Routine and extended internal quality control as recommended by EUCAST Version 14.0, valid from 2024-01-01.

**Packing:**

Each Pack contains following material packed in a desired packing.

- 1) Chloramphenicol HiMIC™ Plate Kit (HMP016) (1KT/3KT)
- 2) HiMIC™ Diluent tubes (LQ314II) (12NO./36NO)
- 3) HiMIC™ Reading Card. (1NO / 3NO)
- 4) HiMIC™ Incubation Tray (PW1378) (1NO / 3NO)
- 5) Package insert

**Layout of plate**

Product Code: MPK016

Product Name: Chloramphenicol HiMIC™ Plate Kit

Concentration: 0.5 - 32 mcg/ml

	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>
<b>A</b>	32	32	32	32	32	32	32	32	32	32	32	32
<b>B</b>	16	16	16	16	16	16	16	16	16	16	16	16
<b>C</b>	8	8	8	8	8	8	8	8	8	8	8	8
<b>D</b>	4	4	4	4	4	4	4	4	4	4	4	4
<b>E</b>	2	2	2	2	2	2	2	2	2	2	2	2
<b>F</b>	1	1	1	1	1	1	1	1	1	1	1	1
<b>G</b>	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
<b>H</b>	Growth Control											

**Disclaimer :**

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