

IVD solutions through partnership



MASTDISCS[®] *Combi*

AmpC, ESBL & Carbapenemase Detection Set

- Differentiates ESBL and/or AmpC enzymes

- Indicates carbapenemase activity

- Convenient calculator provided for simple interpretation

- Supports Antibiotic Stewardship

Register online to
download your

FREE

Results Calculator

www.mast-group.com

Introduction

Antimicrobial resistance (AMR) has rapidly disseminated worldwide and continues to cause major issues in healthcare. Organisms with the ability to express multiple resistance mechanisms are increasingly being observed and are frequently reported within clinical laboratories and national reference centres.

The incidence of AMR continues to rise annually, particularly in ESBL and AmpC producing-Enterobacteriaceae, and also in carbapenemase-producing-Enterobacteriaceae (CPE). These mechanisms can be difficult to detect in singular, due to the diversity and spectrum of activity they demonstrate, and are further problematic when produced in combination.

AmpC and ESBLs hydrolyse broad spectrum antibiotics, which are the first line agents for many critically ill patients. Infections caused by such resistant organisms can increase the length of hospital stay and result in intensive care unit (ICU) admission. It is important to actively 'seek' ESBLs and AmpCs, to minimise the reporting of false cephalosporin susceptibility. There is a possibility of underreporting AmpC incidence due to lack of reliable commercial tests with some AmpCs appearing susceptible on first line screen. Cefoxitin is useful for screening for AmpCs, however not for confirming the presence of an AmpC as cefoxitin resistance can also arise due to reduced permeability. Some physicians may assume that carbapenems are the drugs of choice for treating all infections due to Enterobacteriaceae isolates that demonstrate non-susceptibility to cefoxitin. However, in these cases the use of carbapenems may be unnecessary and may contribute to the increase of carbapenemase production. ESBL and AmpC's are carbapenem susceptible and thereby differentiating carbapenemases from ESBL's and AmpCs helps facilitate delivery of the appropriate targeted antibiotic therapy.

AmpC, ESBL & Carbapenemase Detection Set - D72C

D72C is a six disc system that has been developed for the detection of Gram-negative resistance in Enterobacteriaceae including:

- ESBL positive strains
- AmpC (derepressed/hyperproduced, plasmid mediated and inducible) positive strains
- Co-production of AmpC and ESBL enzymes
- Screening for the production of carbapenemase enzymes.

The test is a combination disc set comprised of cefpodoxime, various inhibitors and a penem antibiotic. These components are used in combination to stimulate a synergistic reaction and interpretation is based on a difference between zone sizes for each disc.

D72C can be used in conjunction with D73C – **MASTDISCS® Combi Carba Plus**, to confirm and differentiate suspected carbapenemase production in Enterobacteriaceae.

When used with **MAST® DISCMASTER** disc dispenser series, D72C can be easily integrated into existing laboratory workflows, and maintains an in-use shelf life of 4 weeks when employing a charged desiccant.

Results Calculator

Mast Group Ltd., have developed a convenient calculator that automatically generates results based on the zone size of each disc. Once users have input their data, interpretive criteria is provided, identifying the presence of specific resistance mechanisms or suspected carbapenemase production.

The calculator is available to download FREE from the Mast Group Ltd website (www.mast-group.com) once registered.

Interpretation of results

Measure zone sizes and input on the D72C calculator. Results are automatically generated. For manual interpretation please refer to the IFU.

D72A – Cefpodoxime 10µg discs

D72B – Cefpodoxime 10µg + ESβL inhibitor discs

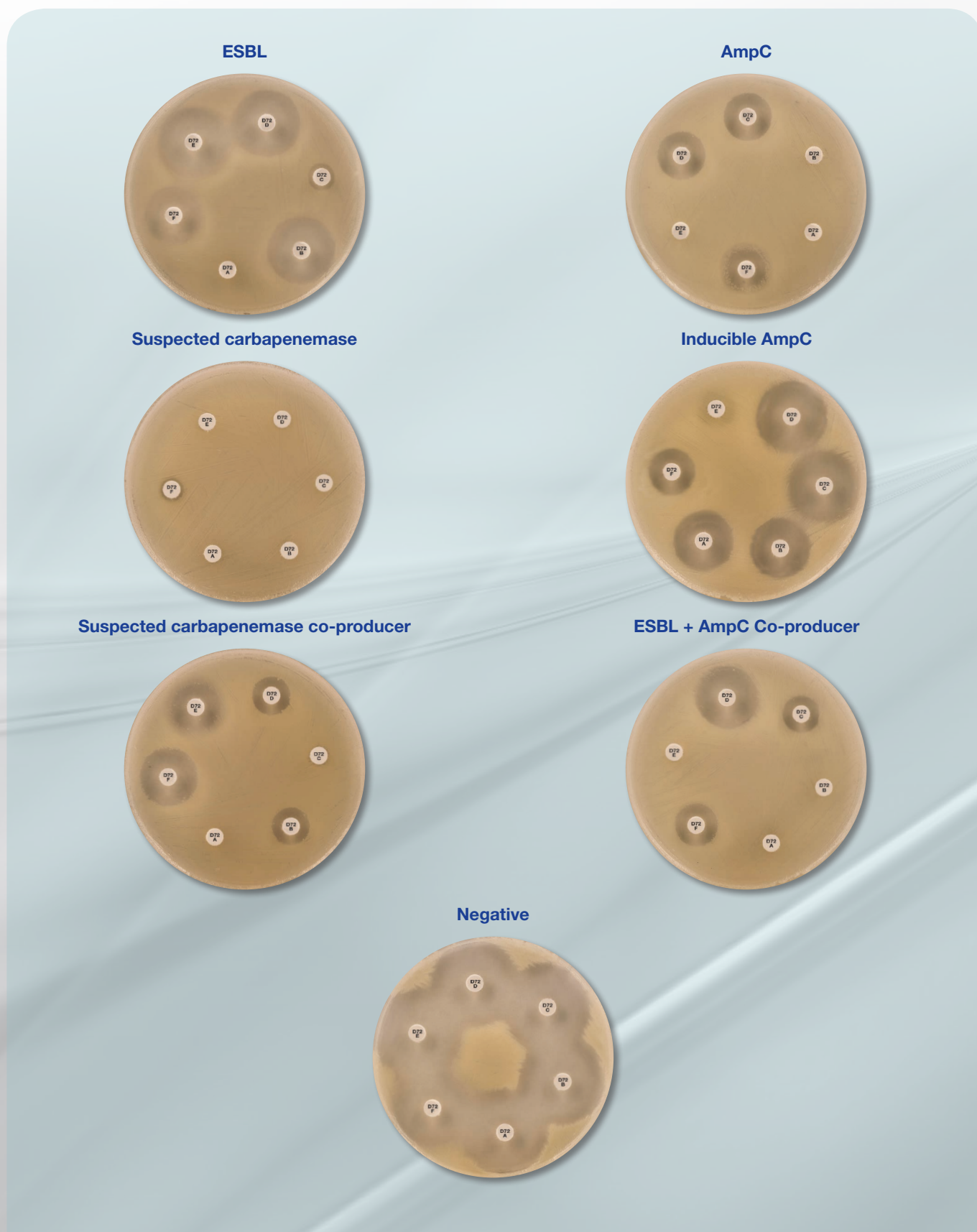
D72C – Cefpodoxime 10µg + AmpC inhibitor discs

D72D – Cefpodoxime 10µg + ESβL inhibitor + AmpC inhibitor discs

D72E – Cefpodoxime 10µg + ESβL inhibitor + AmpC inducer discs

D72F – Penem antibiotic

Figure 1. Visual of results



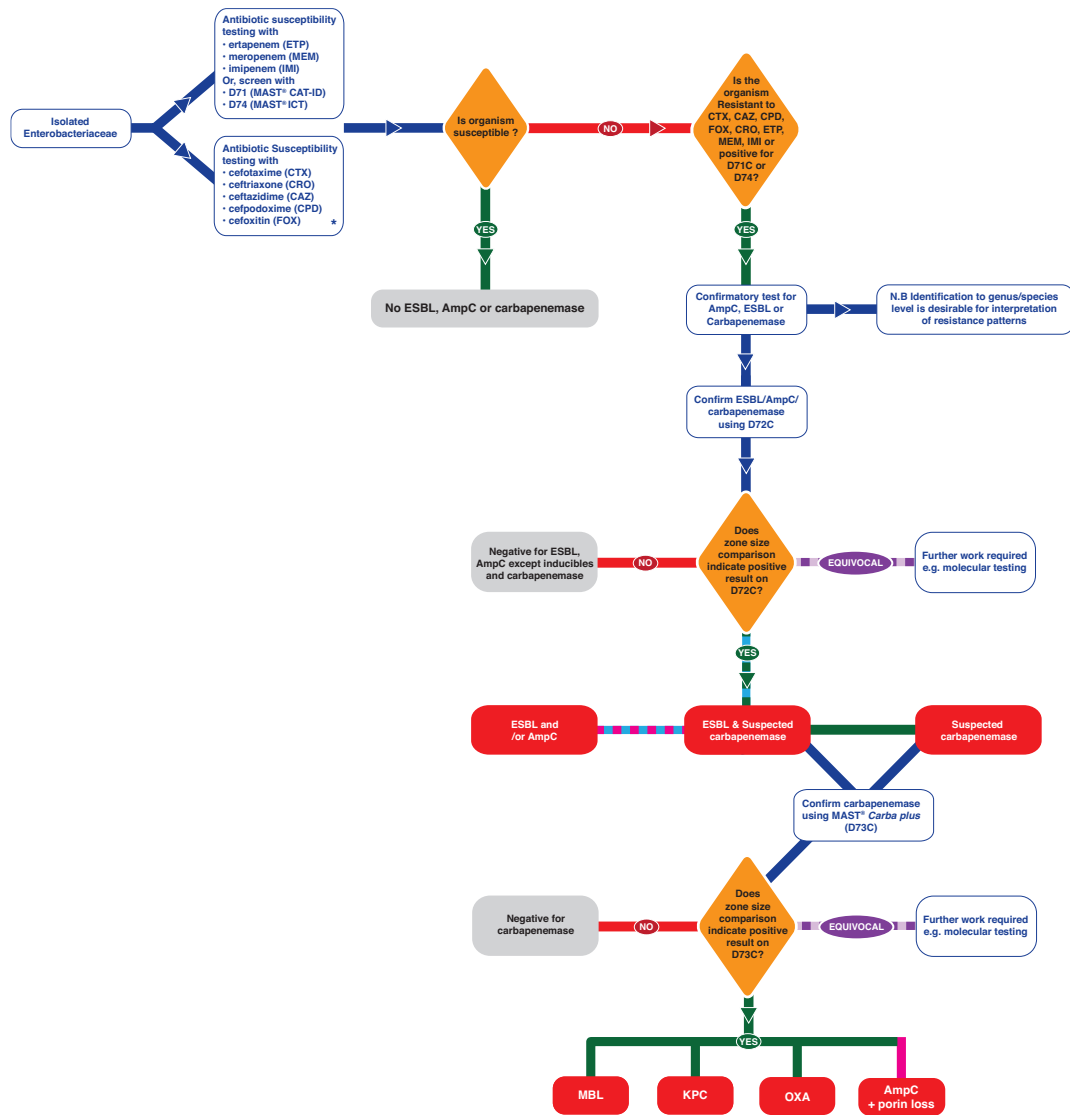


Figure 2. Suggested laboratory use of **MASTDISCS® Combi – AmpC, ESBL and Carbapenemase Test Kit (D72C)**

Ordering Information

Order Code	Product	Pack Size	No. Tests
D72C	MASTDISCS® Combi - AmpC, ESBL & Carbapenemase Detection Set	6 x 50 discs	50

Additional products from Mast’s AMR Range

Order Code	Product	Pack Size	No. Tests
D71C	MASTDISCS® ID CAT-ID - Carbapenemase Activity Test	5 x 50 discs	250
D73C	MASTDISCS® Combi Carba plus	5 x 50 discs	50
D74	MAST® ICT Indirect Carbapenemase Test	25	25

ZT201 v3.0 CA 01/19

United Kingdom
Mast Group Ltd.
Mast House
Derby Road, Bootle
Merseyside L20 1EA

Tel: + 44 (0) 151 933 7277
 Fax: + 44 (0) 151 944 1332
 e-mail: sales@mast-group.com

Germany
Mast Diagnostica GmbH
Feldstrasse 20
DE-23858 Reinfeld

Tel: + 49 (0) 4533 2007 0
 Fax: + 49 (0) 4533 2007 68
 e-mail: mast@mast-diagnostica.de

France
Mast Diagnostic
12 Rue Jean-Jacques Mention
CS 91106
80011 Amiens CEDEX 1

Tél. + 33 (0) 322 80 80 67
 Fax + 33 (0) 322 80 99 22
 e-mail: info@mast-diagnostic.fr