

IVD solutions through partnership



MASTDISCS[®] *Combi*

AmpC, ESBL & Carbapenemase
Detection Set - D72C

Register online to
download your
FREE
Results Calculator
www.mast-group.com

- Differentiates ESBL and/or AmpC enzymes
- Indicates carbapenemase activity
- Convenient calculator provided for simple interpretation
- Supports Antibiotic Stewardship

Introduction

Antimicrobial resistance (AMR) has rapidly disseminated worldwide and continues to cause major issues in health-care. 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.

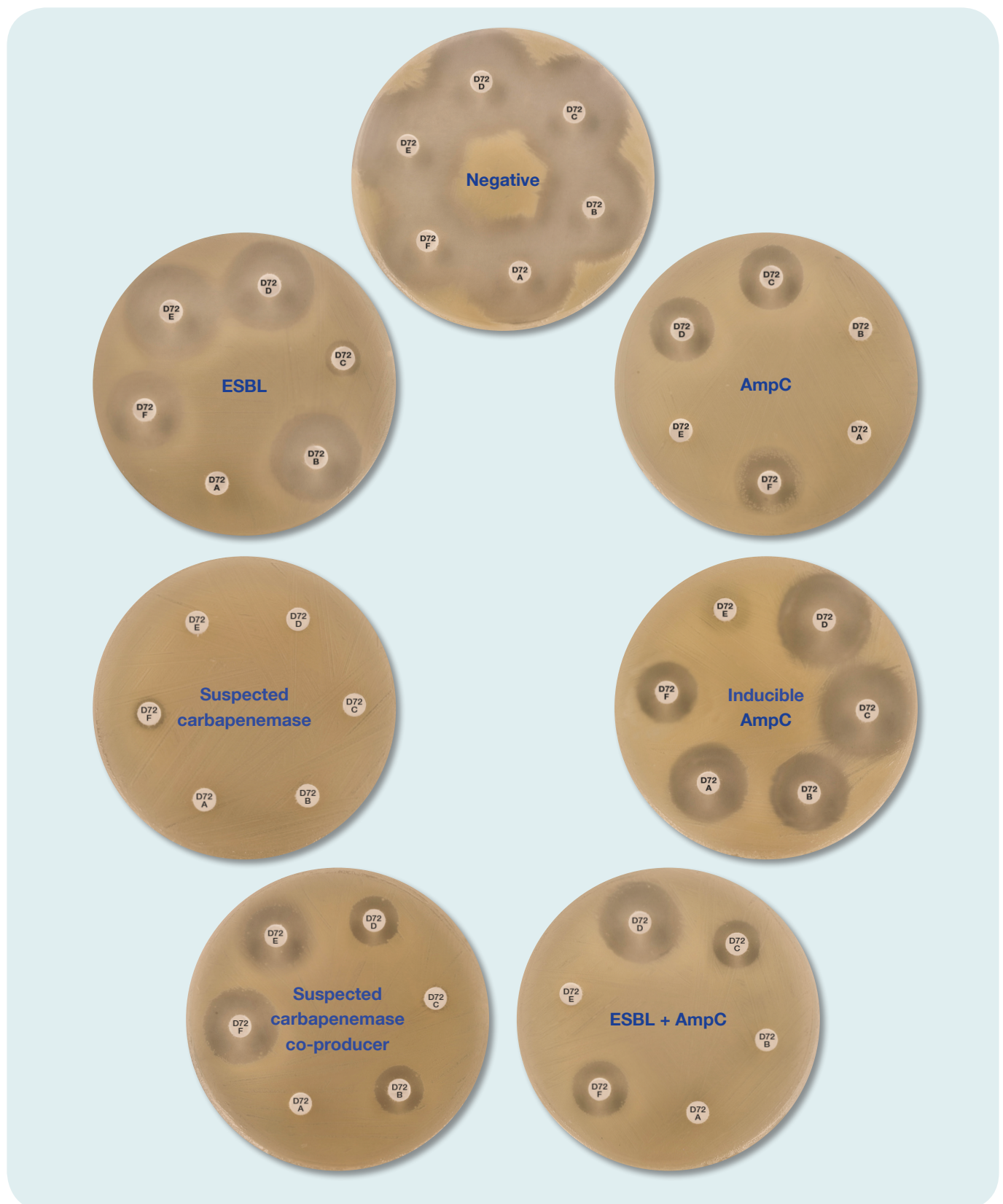
The calculator is available to download FREE from the **Mast Group Ltd.** website (www.mast-group.com) once registered.

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 10 µg discs
- D72B – Cefpodoxime 10 µg + ESBL inhibitor discs
- D72C – Cefpodoxime 10 µg + AmpC inhibitor discs
- D72D – Cefpodoxime 10 µg + ESBL inhibitor + AmpC inhibitor discs
- D72E – Cefpodoxime 10 µg + ESBL inhibitor + AmpC inducer discs
- D72F – Penem antibiotic

Figure 1. Visual of results



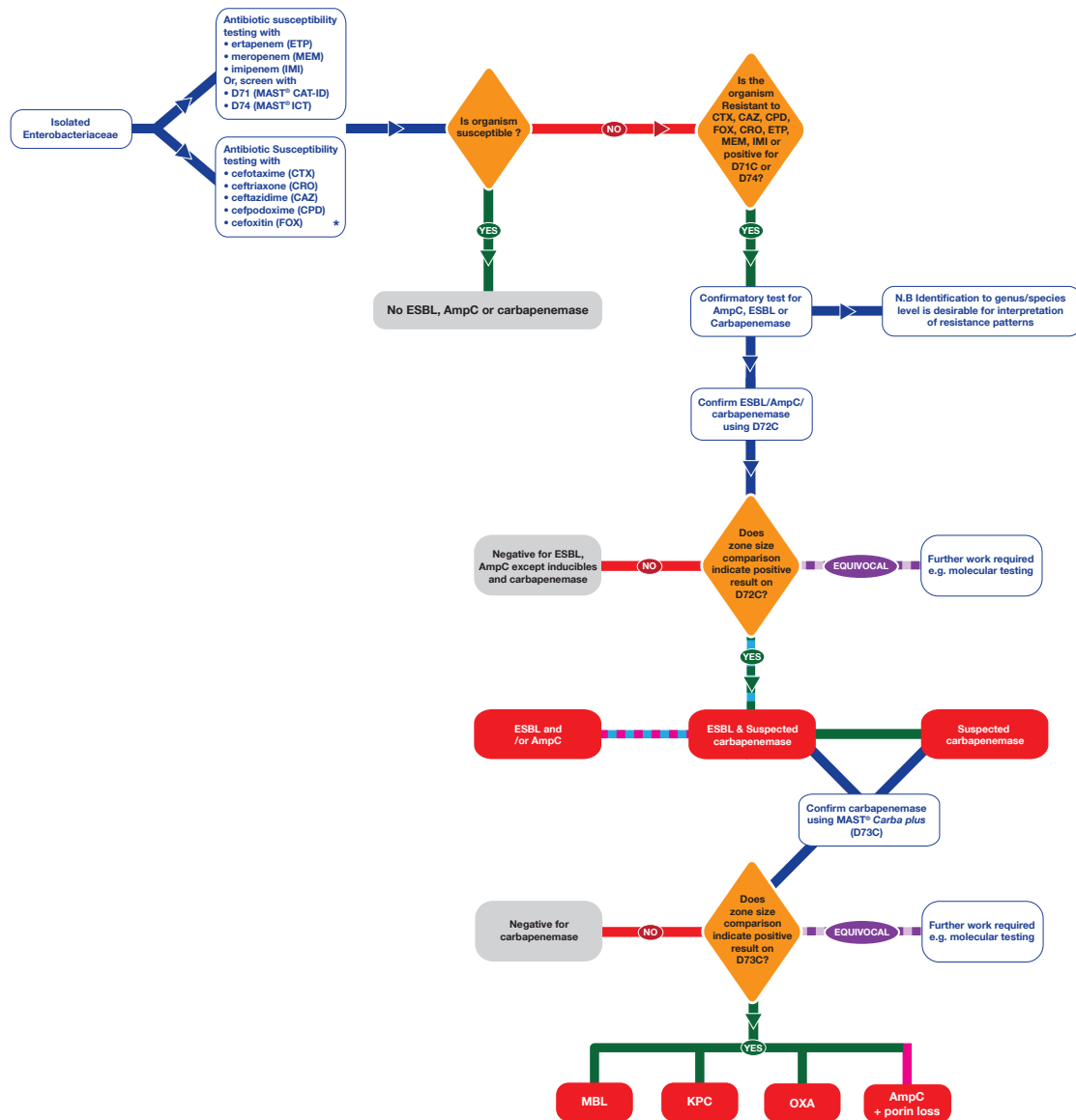


Figure 2. Suggested laboratory use of **MASTDISCS® Combi** – AmpC, ESBL and Carbapenemase Test Kit (D72C)

Ordering Information

Order Code	Product	€	No. Tests
171722	MASTDISCS® Combi AmpC, ESBL & Carbapenemase Detection Set - D72C		50

Additional products from Mast's AMR Range

Order Code	Product	€	No. Tests
171712	MASTDISCS® ID Carbapenemase Activity Test (CAT) - D71C		250
171732	MASTDISCS® Combi Carba Plus - D73C		50
171742	MAST® ID Indirect Carbapenemase Test - D74		25

V. 2.0 CA 08/18 (MD2019-01-30)

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@mastgrp.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
 CS91106, 80011 Amiens, CEDEX 1

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