

IVD solutions through partnership



MASTDISCS[®] *Combi*

ESBL & AmpC only Detection Disc Sets

- Differentiate resistance enzyme types
- Simple comparative interpretation
- Low cost implementation
- Compliance with international standard methodologies

EXTENDED SPECTRUM β LACTAMASE DETECTION

Extended spectrum beta-lactamases (ESBL) are bacterial enzymes which confer resistance to penicillin and cephalosporin antibiotics. The emergence of ESBL producing pathogens has become increasingly significant in limiting the antibiotic treatment options, representing a serious complication for antibiotic management.

Mast Group Ltd.'s range of ESBL detection discs offers laboratories a simple, reliable and low cost means of identification and detection by double disc diffusion, using paired and combination disc sets.

The presence of an ESBL and/or AmpC is easily determined by zone size comparison when simultaneously tested with antibiotic and antibiotic plus inhibitor combinations.

Visual of results

D68C¹

AmpC & ESBL Detection Set

Confirmation of AmpC and/or ESBL production in Enterobacteriaceae

A CPD10

B CPD10 + ES β L inhibitor

C CPD10 + AmpC inhibitor

D CPD10 + ES β L inhibitor
+ AmpC Inhibitor

Calculator programme is
available to download from
www.mastgrp.com

ESBL Positive



AmpC Positive



AmpC and ESBL Positive



AmpC and ESBL Negative



CPD – Cefpodoxime

D69C²

AmpC Detection Set

Confirmation of either chromosomal or plasmid acquired AmpC

A CPD10 + AmpC inducer

AmpC Positive

B CPD10 + AmpC inducer
+ ESβL inhibitor

C CPD10 + AmpC inducer
+ ESβL inhibitor
+ AmpC inhibitors



AmpC Negative



CPD – Cefpodoxime

D63C³

Cefepime 30 & Cefepime 30/Clavulanic Acid 10

Confirmation of ESβL production in Enterobacteriaceae with chromosomal AmpC

CPM30

CPM30/CLAV10

ESBL Positive



ESBL Negative



CPM – Cefepime

CLAV – Clavulanic Acid

D52C⁴

Extended Spectrum β Lactamase Set

Confirmation of ESβL production in Enterobacteriaceae with no chromosomal de-repressed or inducible AmpC

CAZ30

CAZ30/CLAV10

CTX30

CTX30/CLAV10

CPD30

CPD30/CLAV10

ESBL Positive



ESBL Negative



CAZ – Ceftazidime

CLAV – Clavulanic Acid

CTX – Cefotaxime

CPD – Cefpodoxime

D67C⁵

Extended Spectrum β Lactamase Set (CPD10)

Confirmation of ES β L production in Enterobacteriaceae with no chromosomal de-repressed or inducible AmpC

CAZ30
CAZ30/CLAV10

CTX30
CTX30/CLAV10

CPD10
CPD10/CLAV1

CAZ – Ceftazidime
CLAV – Clavulanic Acid
CTX – Cefotaxime
CPD – Cefpodoxime

ESBL Positive



ESBL Negative



D62C⁶

Cefotaxime 30 & Cefotaxime 30 /Clavulanic Acid 10

D64C⁶

Ceftazidime 30 & Ceftazidime 30/Clavulanic Acid 10

Confirmation of ES β L production in Enterobacteriaceae with no chromosomal de-repressed or inducible AmpC when both disc sets used concurrently

CTX30
CTX30/CLAV10
CAZ30
CAZ30/CLAV10

ESBL Positive



CTX – Cefotaxime
CAZ – Ceftazidime
CLAV – Clavulanic Acid

ESBL Negative



D66C⁷

Cefpodoxime 10 & Cefpodoxime 10/Clavulanic Acid 1

Confirmation of ES β L production in Enterobacteriaceae with no chromosomal de-repressed or inducible AmpC

CPD10
CPD10/CLAV1

ESBL Positive



CPD – Cefpodoxime
CLAV – Clavulanic Acid

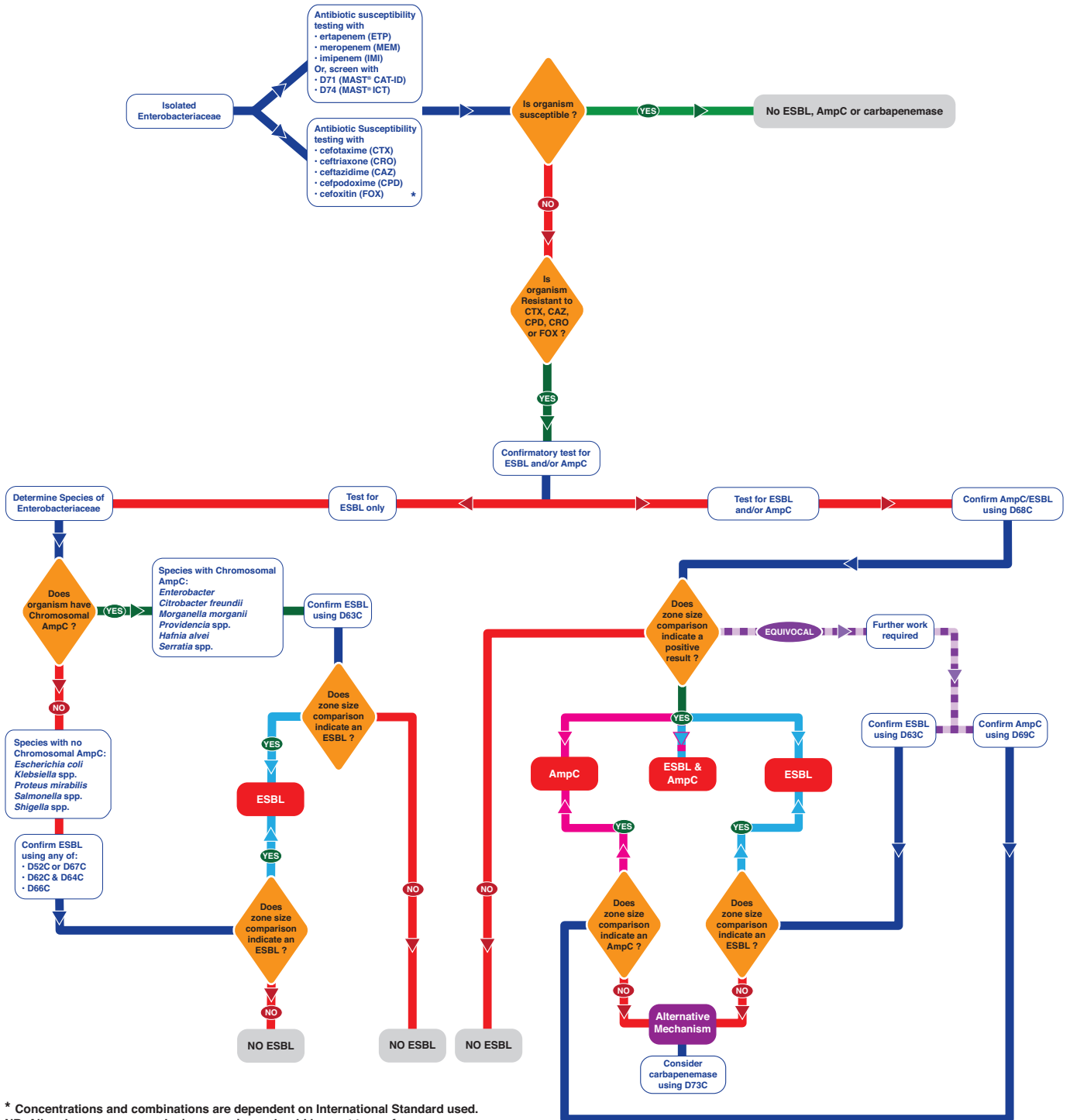
ESBL Negative



Flowchart for laboratory use of **MASTDISCS® Combi**

Key

- D52C - Extended Spectrum β Lactamase Set (50 tests)
- D62C - Cefotaxime 30ug & Cefotaxime 30ug/Clavulanic Acid 10ug (150 tests)
- D63C - Cefepime 30ug & Cefepime 30ug/Clavulanic Acid 10ug (150 tests)
- D64C - Ceftazidime 30ug & Ceftazidime 30ug/Clavulanic Acid 10ug (150 tests)
- D66C - Cefpodoxime 10ug & Cefpodoxime 10ug/Clavulanic Acid 1ug (150 tests)
- D67C - Extended Spectrum β Lactamase Set (CPD10) (50 tests)
- D68C - AmpC & ESBL Detection Set (50 tests)
- D69C - AmpC Detection Set (50 tests)
- D71C - MAST® CAT-ID - Faropenem discs (250 tests)
- D73C - MAST® Carba plus Detection Set (50 tests)
- D74 - MAST® ICT Indirect Carbapenemase Test (25 tests)



* Concentrations and combinations are dependent on International Standard used.
 NB. All carbapenemase producing organisms should be sent to a reference laboratory for confirmation

Ordering Information

Order Code	Product/Usage	Pack size	No. Tests
D68C ¹	MASTDISCS® Combi AmpC & ESβL Detection Set Confirmation of AmpC and/or ESβL production in isolates of Enterobacteriaceae. When interpreted as 'further work required' use D69C to confirm AmpC production and D63C for confirmation of ESβL production when AmpC is also present.	4 × 50 discs	50 tests
D69C ²	MASTDISCS® Combi AmpC Detection Set Confirmation of AmpC production in isolates of Enterobacteriaceae with either plasmid acquired or chromosomal AmpC. Can be used when interpreted as 'further work required' on D68C for confirmation of AmpC production.	3 × 50 discs	50 tests
D63C ³	MASTDISCS® Combi Cefepime ESβL ID Disc Set Confirmation of ESβL production in isolates of Enterobacteriaceae with chromosomal AmpC e.g. <i>Enterobacter</i> spp., <i>Citrobacter freundii</i> , <i>Morganella morganii</i> , <i>Providencia</i> spp., <i>Hafnia alvei</i> , <i>Serratia</i> spp. Can be used when interpreted as 'further work required' on D68C for confirmation of ESβL production when AmpC is also present.	6 × 50 discs	150 tests
D52C ⁴	MASTDISCS® Combi ESβL ID Disc Set Confirmation of ESβL production in isolates of Enterobacteriaceae with no chromosomal de-repressed or inducible AmpC e.g. <i>Escherichia coli</i> , <i>Klebsiella</i> spp., <i>Proteus mirabilis</i> , <i>Salmonella</i> spp., <i>Shigella</i> spp.	6 × 50 discs	50 tests
D67C ⁵	MASTDISCS® Combi ESβL ID Disc Set (CPD10) Confirmation of ESβL production in isolates of Enterobacteriaceae with no chromosomal de-repressed or inducible AmpC e.g. <i>Escherichia coli</i> , <i>Klebsiella</i> spp., <i>Proteus mirabilis</i> , <i>Salmonella</i> spp., <i>Shigella</i> spp.	6 × 50 discs	50 tests
D62C ⁶	MASTDISCS® Combi Cefotaxime ESβL ID Disc Set Confirmation of ESβL production in isolates of Enterobacteriaceae with no chromosomal de-repressed or inducible AmpC e.g. <i>Escherichia coli</i> , <i>Klebsiella</i> spp., <i>Proteus mirabilis</i> , <i>Salmonella</i> spp., <i>Shigella</i> spp.	6 × 50 discs	150 tests
D64C ⁶	MASTDISCS® Combi Cefepime ESβL ID Disc Set Confirmation of ESβL production in isolates of Enterobacteriaceae with no chromosomal de-repressed or inducible AmpC e.g. <i>Escherichia coli</i> , <i>Klebsiella</i> spp., <i>Proteus mirabilis</i> , <i>Salmonella</i> spp., <i>Shigella</i> spp. D62C & D64C must be used concurrently	6 × 50 discs	150 tests
D66C ⁷	MASTDISCS® Combi Cefpodoxime ESβL ID Disc Set Confirmation of ESβL production in isolates of Enterobacteriaceae with no chromosomal de-repressed or inducible AmpC e.g. <i>Escherichia coli</i> , <i>Klebsiella</i> spp., <i>Proteus mirabilis</i> , <i>Salmonella</i> spp., <i>Shigella</i> spp.	6 × 50 discs	150 tests

Additional products from Mast Group Ltd.'s Range

Order Code	Product	Pack size	No. Tests
D71C	MASTDISCS® ID CAT-ID - Carbapenemase Activity Test	6 × 50 discs	250 tests
D72C	MASTDISCS® Combi AmpC, ESBL & Carbapenemase Detection Set	6 × 50 discs	50 tests
D73C	MASTDISCS® Combi Carba plus	5 × 50 discs	50 tests
D74	MAST®ID - MAST® ICT - Indirect Carbapenemase Test	25 devices	25 tests

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