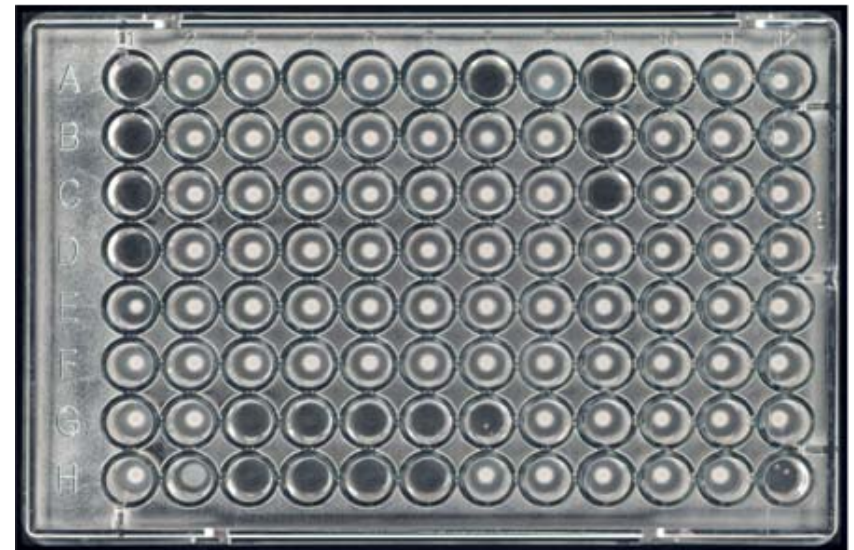


Proposal for a common Staphylococci panel design

Andreas Schroeter, BfR
Antonio Battisti, ISS
Dik Mevius, CIDC



1. Method

2. Requirements

3. Common MRSA plate format

4. Common Staphylococcus spp./MRSA plate format

1. Method

Inoculation of NaCl-solution



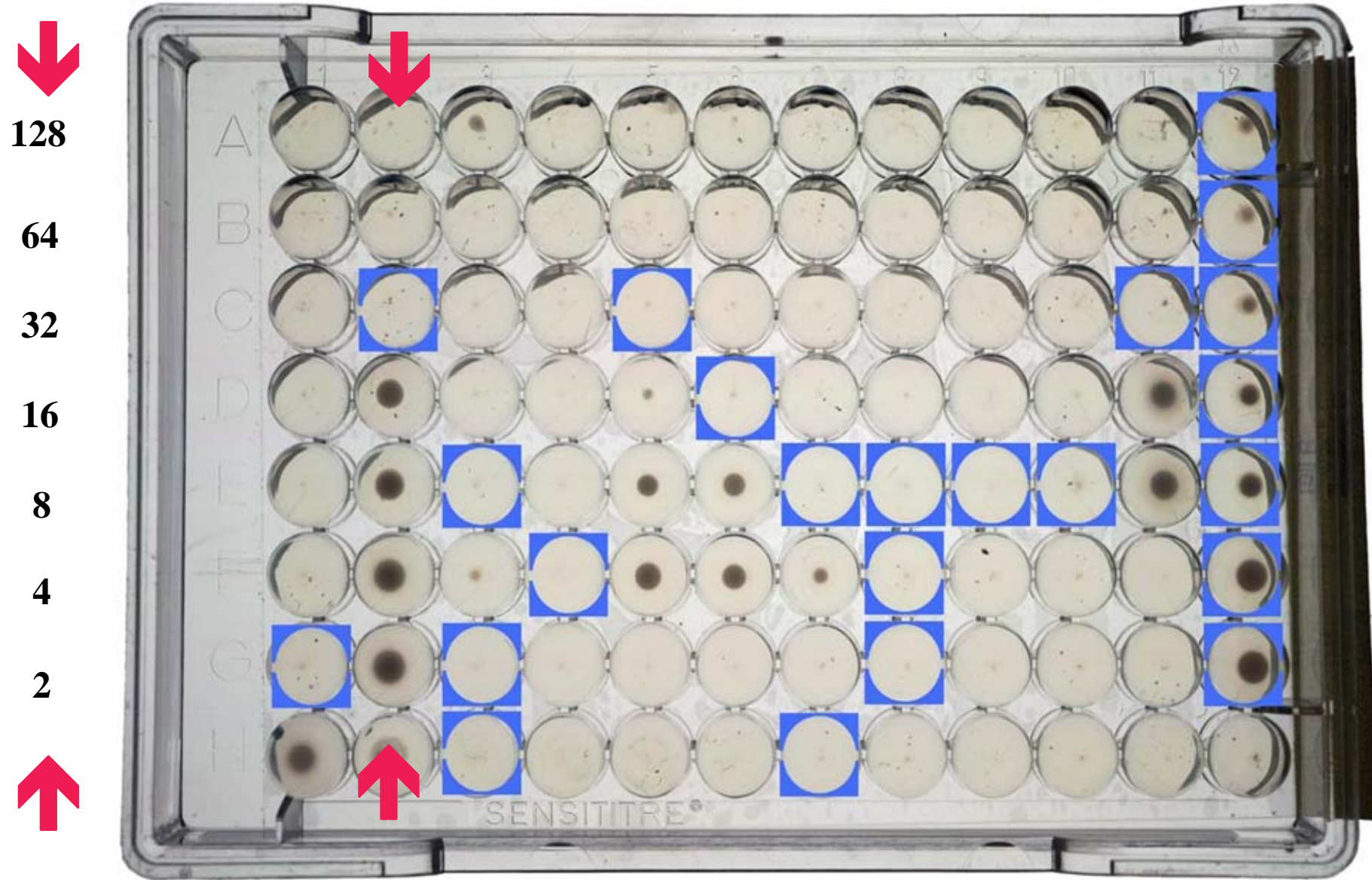
Automatic filling of microtitre plates



Semi-automatic reading of plates



Spectinomycin



2. Requirements

- Normal order volume:

500 plates (lowest)

→ price: 17.85 €+ tax (Germany 19 % = 3.39 €) = 21.24 €per plate

- Common plate order volume: **5000 plates (+/- 5 %)**

→ price: 5,60 €+ tax (Germany 19 % = 1.06) = 6.66 €per plate

- Order volume: **one box (10 plates)** → **5000 plates or more**

Advantages: lower price

quick delivery (continuous production)

but: it can be from different batches – quality control !!

- **Ordering:** 1. Directly if there is no distributor



TREK Diagnostic Systems (<http://www.trekds.com>)

- **Contact person:** Maureen Mansfield (maureen@trekds.co.uk)

- **Additional information:** aquired by Magellan Biosciences Inc. (<http://www.magellanbio.com>)

2. Indirectly via a distributor



Example Germany: **MCS Diagnostics BV,**
Vorveld 16, NL-6071 RE Swalmen, The Netherlands
www.mcsdiagnostics.com,
contact person: Hay Thijssen

(hay.thijssen@mcsdiagnostics.com)

- **Ready prepared microtitre plates**

each plate in an aluminium foil + indicator (blue - dry
red - wet)

10 plates per box + foils + writing block + a strip with a bar code

12 boxes per parcel (120 plates)

3. Common MRSA plate format

- **Problem:** **1. Number of substances tested**

2. Concentration ranges (surveillance)

03.08.2009

E-mail to all countries of the EU

For a common plate format the above company needs an order volume from 5.000 plates per year. If this demand is fulfilled a common plate format is accepted by the company, the price per plate is dropping and the single order volume is 10 plates (one box or more). For explanation: the under limit of a normal order volume is 500 plates!! Therefore it is interesting for countries with a small number of MRSA-isolates. If we can together establish a common plate format the price per plate will not depend on the number of plates ordered, but will be a standard price between 7 and 9 €/plate.

Further procedure:

If the order volume (5.000 plates/year from all participating countries) is reached, we will establish a small working group (3-4 participants), which make a first proposal of a plate format (antimicrobial agents and concentration ranges), which fulfil the EFSA and the participating country requirements. I hope we can find then a good compromise in a general discussion between all participants in a short time.

Table 1: MRSA plate

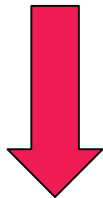
MRSA plate format 02. October 2008

Country	Responsible person	e-mail address	Order volume per year	Year of ordering this plate
Austria	Burkhard Springer	burkhard.springer@ages.at	150	2009
Cyprus	Liapi Maria	mliapi@vs.moa.gov.cy	100	2009
Czech Republic	Tomas Cerny	tomas.cerny@svupraha.cz	350	2009
Denmark	Yvonne Agersø	yvoa@food.dtu.dk	50-100	?
Finland	Anna-Liesa Myllyniemi	anna-liesa.myllyniemi@evira.fi	VetMIC plates from SVA	In future possible
Germany	Andreas Schroeter	andreas.schroeter@bfr.bund.de	500	2009
Greece	Maria Passiotou	vetlab7@otenet.gr	unknown	unknown
Ireland	Montse Gutierrez		(<50)	Very small volume is anticipated
Italy	Alessia Franko	alessia.franko@izslt.it	?	?
Latvia	Jelena Avsejenko	jelena.avsejenko@ndc.gov.lv	10 plates	2009
The Netherlands	Dik Mevius Kees Veldmann	dik.mevius@wur.nl kees.veldman@wur.nl	500	2009
Poland	Jacek Osek	josek@piwet.pulawy.pl	50	2009
Slovakia	Andrea Brtkova	brtkova@svpudk.sk	20	Per year from 2009
Slovenia	Irena Zdovc	Irena.zdovc@vf.uni-lj.si	150	As soon as possible
Spain	Manuel Durán Ferrer	mduran@mapa.es	50-100 depending on official request	As soon as available
Sweden	Stina Englund	stina.englund@sva.se	Own VetMIC plates from SVA	
United Kingdom	Christopher Teale	c.teale@vla.defra.gsi.gov.uk	10	Per year from 2009
Norway	Marianne Sunde	Marianne.sunde@vetinst.no	20	Per year from 2009
<u>Sum</u>			2110	

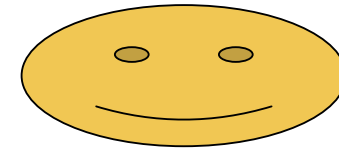
Belgium, Bulgaria, Estonia, France, Hungary, Lithuania, Luxemburg, Malta, Portugal, Romania

Number of plates for MRSA: 2110 (2.10.2008)

Lowest number for TREK per year: 5000 (+/- 5 %)



Proposal from Dik Mevius:



Create a common plate format for :

Staphylococcus aureus and MRSA

4. Common Staphylococcus spp./MRSA plate format

Fig 1: Plate format Staphylococcus spp./MRSA (Germany/Italy)

Letter	1	2	3	4	5	6	7	8	9	10	11	12
A	CLI	ERY	VAN	TET	CHL	CIP	MUP	GEN	LZD	SYN	RIF	FOX
	0.12	0.25	0.5	0.5	2	0.25	0.25	1	0.5	0.25	0.016	0.5
B	CLI	ERY	VAN	TET	CHL	CIP	MUP	GEN	LZD	SYN	RIF	FOX
	0.25	0.5	1	1	4	0.5	0.5	2	1	0.5	0.032	1
C	CLI	ERY	VAN	TET	CHL	CIP	MUP	GEN	LZD	SYN	RIF	FOX
	0.5	1	2	2	8	1	1	4	2	1	0.064	2
D	CLI	ERY	VAN	TET	CHL	CIP	MUP	GEN	LZD	SYN	RIF	FOX
	1	2	4	4	16	2	2	8	4	2	0.125	4
E	CLI	ERY	VAN	TET	CHL	CIP	MUP	GEN	LZD	SYN	RIF	FOX
	2	4	8	8	32	4	16	16	8	4	0.25	8
F	CLI	ERY	VAN	TET	CHL	CIP	MUP	TIA	TIA	TIA	RIF	FOX
	4	8	16	16	64	8	32	0.5	1	2	16	16
G	KAN	KAN	KAN	KAN	KAN	FUS	FUS	FUS	FUS	TIA	RIF	Neg
	4	8	16	32	64	0.5	1	2	4	4	32	
H	SMX	SMX	SMX	SMX	SMX	SMX	TMP	TMP	TMP	TMP	TMP	Pos
	16	32	64	128	256	512	2	4	8	16	32	

Decision 2008/55/EU : substances, which should be tested for MRSA:

Ciprofloxacin, Erythromycin, Fusidic acid, Gentamicin, Linezolid,

Mupirocin, Sulfamethoxazole, Trimethoprim, Tetracycline,

Chloramphenicol, Vancomycin, Quinupristin/Dalfopristin(Synercid)

(should be withdrawn from the panel,

Amikacin or tobramycin for neomycin or/and kanamycin – D. Mevius)

Italy: Rifampicin, Cefoxitin

Germany: Tiamulin

Table 2: Antimicrobial agent, abbreviations and arguments for using it

Substance	Abbr.	Reasons for using it	Further arguments	Literature
Clindamycin	CLI		Surveillance antibiotic*	2008/55/EU
Erythromycin	ERY		Surveillance antibiotic*	2008/55/EU
Vancomycine	VAN		Surveillance antibiotic*	2008/55/EU
Tetracycline	TET		Surveillance antibiotic*	2008/55/EU
Chloramphenicol	CHL		Surveillance antibiotic*	2008/55/EU
Ciprofloxacin	CIP		Surveillance antibiotic*	2008/55/EU
Mupirocin	MUP	Used in human medicine only	Surveillance antibiotic*; Breakpoint: ≤ 4 sens, 8-256 low level res., ≥ 512 high res.; Staph. Ref. Lab G. ≥ 32 res	*Kresken, M.; 2008/55/EU
Gentamicin	GEN		Surveillance antibiotic*	2008/55/EU
Linezolid	LZD		Surveillance antibiotic*	2008/55/EU
Synercid	SYN	Used in human medicine only		2008/55/EU
Rifampicin	RIF	Used in human medicine only		
Cefoxitin	FOX	To predict mec mediated resistance in <i>S. aureus</i>	FOX ≤ 4 Oxacillin sens FOX ≥ 8 Oxacillin res	CLSI M100-S18 CLSI M7-A7
Kanamycin	KAN	Used in pigs, cattle, calf, sheep and chicken	Surveillance antibiotic*	*Cornaglia, G.; ESCMID study group report
Sulfamethoxazole	SMX		Surveillance antibiotic*	2008/55/EU
Trimethoprim	TMP		Surveillance antibiotic*	2008/55/EU
Fusidic acid	FUS			2008/55/EU
Tiamulin	TIA	Used in pigs, cattle, calf, turkey and chicken	Proposed: DVG working group "Antibiotic Resistance" in Germany	

Literature:

Decision 2008/55/EU

Cornaglia, G. et al. 2004, Clin. Microbiol. Infect. 10 (4), 349-383

Kresken, M. et al. 2004, Int. J. Antimicrobial Agents 23, 577-581

	CLI	ERY	VAN	TET	CHL	CIP	GEN	LZD	SYN	RIF	FOX	KAN	FUS	TIA	SMX	TMP	MUP	SXT
ECV ≤	0.25***	1***	2***	1***	16**	1**	2***	4**	1**	0.016***	4**	8**	0.5***	2**	128**	4**	0.5**	0.5**
CB >	0.5***	2***	8**	2***	8 ¹	1**	1**	4***	2**	0.5 ¹	4**	-	1***	-	-	4***	-	4/761
CB ≥	4*	8*	16**	16*	32*	4*	16*	-*	4*	4*	-*	64*	-*	-*	512*	16*	-*	4/76*

ECV, CB – EUCAST, MRSA - ***, Staph. aureus. - **, Staph. spp. - *, Staph. – ¹ (see miscellaneous antimicrobials CHL, RIF, SXT),

CB – CSLI (M100-S19)

Fig.2: Proposed assessment Staph./MRSA plate format, EUCAST ECV/CB

Letter	1	2	3	4	5	6	7	8	9	10	11	12
A	CLI	ERY	VAN	TET	CHL	CIP	MUP	GEN	LZD	SYN	RIF	FOX
	0.12	0.25	0.5	0.5	2	0.25	0.25	1	0.5	0.25	0.016	0.5
B	CLI	ERY	VAN	TET	CHL	CIP	MUP	GEN	LZD	SYN	RIF	FOX
	0.25	0.5	1	1	4	0.5	0.5	2	1	0.5	0.032	1
C	CLI	ERY	VAN	TET	CHL	CIP	MUP	GEN	LZD	SYN	RIF	FOX
	0.5	1	2	2	8	1	1	4	2	1	0.064	2
D	CLI	ERY	VAN	TET	CHL	CIP	MUP	GEN	LZD	SYN	RIF	FOX
	1	2	4	4	16	2	2	8	4	2	0.125	4
E	CLI	ERY	VAN	TET	CHL	CIP	MUP	GEN	LZD	SYN	RIF	FOX
	2	4	8	8	32	4	16	16	8	4	0.25	8
F	CLI	ERY	VAN	TET	CHL	CIP	MUP	TIA	TIA	TIA	RIF	FOX
	4	8	16	16	64	8	32	0.5	1	2	16	16
G	KAN	KAN	KAN	KAN	KAN	FUS	FUS	FUS	FUS	TIA	RIF	Neg
	4	8	16	32	64	0.5	1	2	4	4	32	
H	SMX	SMX	SMX	SMX	SMX	SMX	TMP	TMP	TMP	TMP	TMP	Pos
	16	32	64	128	256	512	2	4	8	16	32	

Green - sensitive EUCAST ECV, CB

Green – sensitive EUCAST CB but resistant ECV

Red – resistant ECV and CB, if available

Green – resistant EUCAST CB but sensitive ECV

Table 3: Common Staphylococcus spp./MRSA plate format

Country	Responsible person	e-mail address	Order volume per year	Year of ordering this plate
Austria	Burkhard Springer	burkhard.springer@ages.at		
Cyprus	Liapi Maria	mliapi@vs.moa.gov.cy		
Czech Republic	Tomas Cerny	tomas.cerny@svupraha.cz		
Denmark	Yvonne Agersø	yvoa@food.dtu.dk		
Finland	Anna-Liesa Myllyniemi	anna-liesa.myllyniemi@evira.fi		
Germany	Andreas Schroeter	andreas.schroeter@bfr.bund.de		
Greece	Maria Passiotou	vetlab7@otenet.gr		
Ireland	Montse Gutierrez			
Italy	Alessia Franko	alessia.franko@izslt.it		
Latvia	Jelena Avsejenko	jelena.avsejenko@ndc.gov.lv		
The Netherlands	Dik Mevius, Kees Veldmann	dik.mevius@wur.nl , kees.veldman@wur.nl		
Poland	Jacek Osek	josek@piwet.pulawy.pl		
Slovakia	Andrea Brtkova	brtkova@svpudk.sk		
Slovenia	Irena Zdovc	Irena.zdovc@vf.uni-lj.si		
Spain	Manuel Durán Ferrer	mduran@mapa.es		
Sweden	Stina Englund	stina.englund@sva.se		
United Kingdom	Christopher Teale	c.teale@vla.defra.gsi.gov.uk		
Norway	Marianne Sunde	Marianne.sunde@vetinst.no		

Belgium, Bulgaria, Estonia, France, Hungary, Lithuania, Luxemburg, Malta, Portugal, Romania

Many thanks for your attention



Are you
resistant
too
?

