Nouvelles recommandations autour du CA-SFM/Eucast: Impact sur les résultats

A. Philippon

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Société Française de Microbiologie

Association reconnue d'Utilité Publique, Décret du 17 Mai 1993 (J.O. n° 119)

COMITE DE L'ANTIBIOGRAMME DE LA SOCIETE FRANCAISE DE MICROBIOLOGIE (CA-SFM)

Les recommandations du Comité de l'Antibiogramme de la Société Française de Microbiologie (CASFM) sont consensuelles et reposent sur un processus d'évaluation continue des pratiques par la communauté scientifique et médicale. Tout commentaire, toute remarque ou toute question sont bienvenus. Vous pouvez adresser vos messages au coordonnateur du Comité Pr C.-J. Soussy

- Téléchargez le Communiqué 2006 (Janvier)

fichier .pdf - 326 Ko

- Téléchargez le communiqué 2006 (Janvier) du Groupe de travail : Antibiogramme Vétérinaire - Coordonnateur : P. Sanders

fichier .pdf - 78 Ko

Versions précédentes

Page mise à jour le 24/02/2006

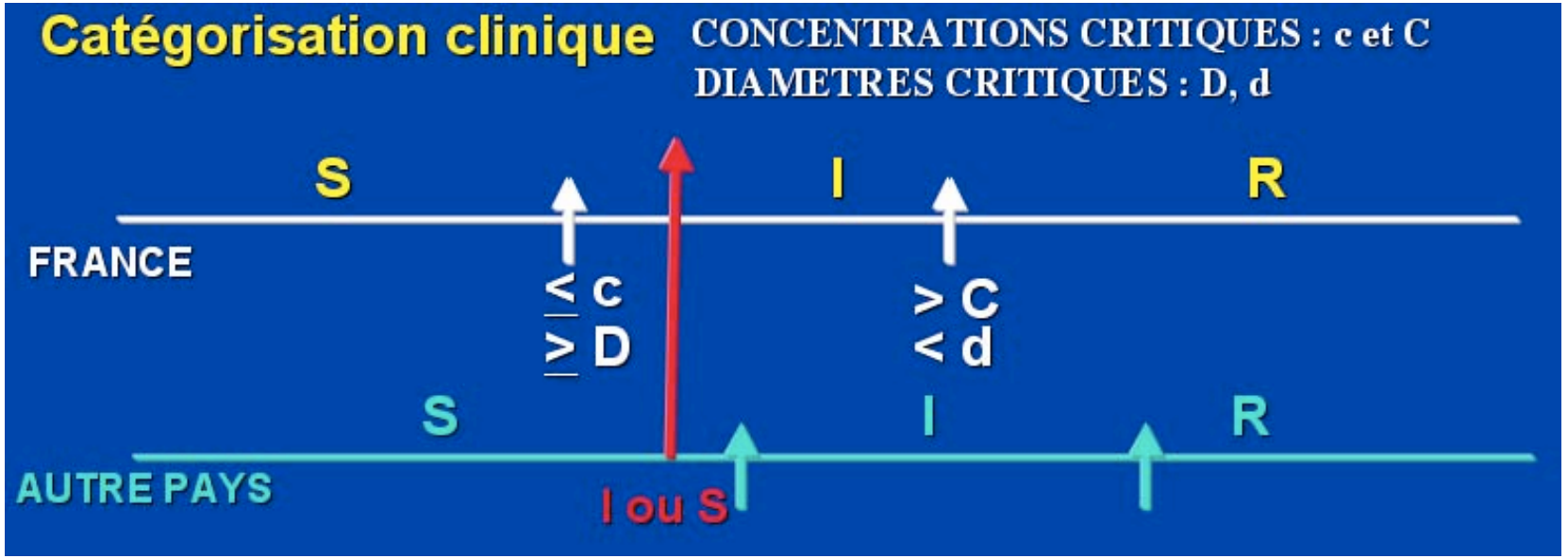
http://www.sfm.asso.fr/

ANTIBIOGRAMME:
Communiqué annuel (< 50 pages)

. Gratuit, version déchargeable en pdf
. Annuel, donc nouveautés bien individualisées
. Objectifs définis par consensus et renouvelables
. Définitions : c, C, D, d, S, I, R, lecture interprétative...
. Techniques
. CQI: Souches du contrôle de qualité
. Phénotypes de résistance naturelle
. Quels antibiotiques/ espèce ?
. Quelles concentrations cliniques ?
. Quelle interpétation si mécanisme de résistance .....

SOMMAIRE

Depuis l'édition 2004, quelques modifications significatives ont été apportées. Une note explicative figure dans ce document page 49 (dernière page).



HARMONISATION EUROPEENNE

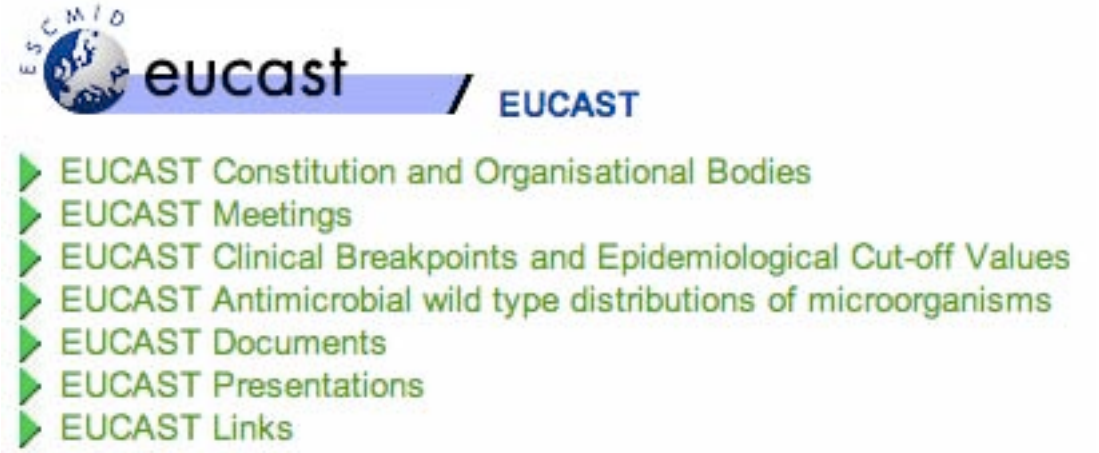
(Bull. Soc. Fr. Microbiol., Octobre 2004, Vol. 19, n°3 : 191-193)

Le besoin d'une harmonisation européenne dans la méthodologie des tests de sensibilité aux antibiotiques et leur interprétation a été ressenti il y a déjà de nombreuses années. Ceci a conduit en 2002 à la création de l'EUCAST (European Committee on Antimicrobial Susceptibility Testing) qui est composé d'une part d'un General Committee qui comporte un représentant par pays européen et se réunit une fois par an et d'autre part d'un Steering Committee composé de deux représentants du General Committee et surtout d'un représentant de chacun des six comités nationaux reconnus comme actifs en raison de leur ancienneté, de la fréquence de leurs réunions et de leur notoriété attestée par des publications régulières :

European Committee on Antimicrobial Susceptibility Testing
formed in 1997 and restructured in 2002

convened by
European Society for Clinical Microbiology and Infectious Diseases (ESCMID)
National Breakpoint Committees in Europe

and financed by
ESCMID



http://www.escmid.org/sites/

EUCAST General Committee 2006

Austria Prof Helmut Mittermayer
Belgium Prof Jan Verhaegen
Bosnia Dr Selma Uzunovic-Kamberovic
Bulgaria Prof Krassimir Metodiev
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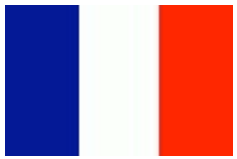
Spain Dr Francisco Soriano
Sweden Dr Barbro Olsson-Liljequist
Switzerland Prof Jaques Bille
Turkey Dr Deniz Gür
UK Prof Alasdair MacGowan
Yugoslavia no official representative

ISC – Prof Paul Tulkens
FESCI – Dr David Livermore

Email network of industry with interest in antimicrobials

Chairperson Gunnar Kahlmeter, Sweden
Scientific Secretary Derek Brown, UK






BSAC wp DIN CA-SFM CRG NWGA SRGA

Steering Committee

•Chairperson	Gunnar Kahlmeter	2005 - 08
• Scientific Secretary	Derek Brown	2005 - 08
• BSAC (The UK)	Alasdair MacGowan	2005 - 08
• CA-SFM (France)	Fred Goldstein	2005 - 08
• CRG (The Netherlands)	Johan W. Mouton	2005 - 08
• DIN (Germany)	Arne Rodloff	2005 - 08
• NWGA (Norway)	Martin Steinbakk	2005 - 08
• SRGA (Sweden)	Anders Österlund	2005 - 08
• General Committee rep	Olga Stetsiouk (Russia)	2004 - 06
• General Committee rep	Francisco Soriano (Spain)	2004 - 06
• General Committee rep	Waleria Hryniewicz (Poland)	2006 - 08
• General Committee rep	Pietro Varaldo (Italy)	2006 - 08

EUCAST: collaborations

EMEA : SOP being developed which renders EUCAST the official European breakpoint committee (EUCAST breakpoints in the SPCs).

Expert groups and reference laboratories (Neisseria, Salmonella, European Veterinary working group, NEQAS)

EARSS : EUCAST permanently on the EARSS advisory board

NCCLS

NCCLS/EUCAST broth dilution method for the determination of MIC-values harmonised through CEN and ISO; finished document end of 2004.
NCCLS/EUCAST common QC type strain MIC-target values and ranges
NCCLS/EUCAST harmonised FQ breakpoints for staphylococci.
Collaborative process for revision of cephalosporin and carbapenem MIC breakpoints (first joint meeting in Tampa, January 2005).

Pharmaceutical industry information and consultation network

Les **objectifs de l'EUCAST** ont été définis de la façon suivante :

· **standardiser les méthodologies** ;

· **s'accorder sur l'expression des concentrations critiques** : celle qui a toujours prévalu en France a été retenue, soit **S ≤ mg/L** et **R > mg/L**

· **établir des « cut-off values »** séparant pour chaque couple espèce-antibiotique, la population des souches sauvages de celles porteuses d'un ou plusieurs mécanismes de résistance acquise

· **établir des concentrations critiques pour la catégorisation clinique**, d'une part en rédigeant en accord avec l'EMEA (European Agency for the Evaluation of Medicinal Products) une procédure pour les nouveaux antibiotiques et d'autre part en tentant d'harmoniser les concentrations critiques nationales des antibiotiques existants sur de nouveaux arguments solides, notamment des points de vue pharmacocinétique et pharmacodynamique ainsi que clinique.

Le CA-SFM peut alors accepter ces modifications ou alors justifier tout désaccord avec les propositions de l'EUCAST.

Dans le Communiqué Annuel sont indiquées **en gras** :
- les concentrations critiques proposées par l'EUCAST et approuvées par le CA-SFM
- les modifications des diamètres critiques : celles-ci sont adoptées par les Comités nationaux en fonction de leur propre méthodologie.

CONSEQUENCES

CA-SFM: caractères gras (exemple du staphylocoque)

Streptomycine	10 UI	≤ 8	> 16	≥ 15	< 13	
Kanamycine	30 UI	≤ 8	> 16	≥ 17	< 15	
Gentamicine	15 µg (10 UI)	**≤ 1**	**> 1**	**≥ 20**	**< 20**	
Tobramycine	10 µg	**≤ 1**	**> 1**	**≥ 20**	**< 20**	
Erythromycine	15 UI	≤ 1	> 4	≥ 22	< 17	
Spiramycine	100 µg	≤ 1	> 4	≥ 24	< 19	
Télithromycine	15 µg	≤ 0,5	> 2	≥ 21	< 17	
Lincomycine	15 µg	≤ 2	> 8	≥ 21	< 17	
Linézolide (H)	30 µg	**≤ 4**	**> 4**	**≥ 24**	**< 24**	
Pristinamycine	15 µg	≤ 1	> 2	≥ 22	< 19	
Quinupristine-dalfopristine(H)	15 µg	≤ 0,5	> 2	≥ 25	< 19	

(H) – Antibiotique distribué en milieu hospitalier

NOUVEL ANTIBIOTIQUE

Oxazolidinone Click on antibiotic name to see wild type MIC distributions and on RD to see rationale document.	Species-related breakpoints (S≤/R>)								
	Enterobac-teriaceae	*Pseudo-monas*	*Acineto-bacter*	*Staphylo-coccus*[2]	*Entero-coccus*[2]	*Strepto-coccus A,B,C,G*	*S.pneu-moniae*	*H.influenzae M.catarrhalis*	*N.gonorr-hoeae*
Linezolid (RD)	--	--	--	4/4	4/4	2/4	2/4	--	--

1. Non-species related breakpoints have been determined mainly on the basis of PK/PD data and are independent of MIC distributions of sp have not been given a species-specific breakpoint and not for those species where susceptibility testing is not recommended (marked wi

2. The S/I-breakpoint has been increased from 2.0 to 4.0 mg/L to avoid dividing wild type MIC-distributions. Hence there is no intermediate

-- = Susceptibility testing not recommended as the species is a poor target for therapy with the drug.
IE = There is insufficient evidence that the species in question is a good target for therapy with the drug.
RD =Rationale document listing data used for setting EUCAST breakpoints.

Version*	Date	Action
1.3	*2006-07-14*	*Linezolid rationale document finalised and linked to RD.*
1.2	*2006-06-20*	*This table re-arranged in reverse chronological order.*
1.1	*2006-01-31*	*Added an explanation of links from antibiotic names to wild type MIC distributions. Table version number added.*
1.0	*2004-04-30*	*European linezolid breakpoints harmonised by EUCAST.*

**The number before the point indicates breakpoint change. The number after the point indicates minor changes (footnotes, spelling, format, etc) wit*

Procédure de 2 ans

eucast
Clinical Breakpoints

Clinical breakpoints
- Penicillins (2007)
- Cephalosporins
- Carbapenems
- Monobactams
- Fluoroquinolones
- Aminoglycosides
- Glycopeptides
- Oxazolidones
- Macrolides, ketolides & clindamycin, dalfopristine/-quinopristine (2007/08),
- Tetracyclines (2008), Tigecycline
- Chloramphenicol (2008),
- Daptomycin,
- Fusidic acid (2008),
- Rifampicin (2008)
- Trimethoprim, sulfamethoxazole, co-trimoxazole (2008),
- Nitrofurantoin (2008)
- Fosfomycin (2008).

Autres antibiotiques

Programme de travail

www.eucast.org

EUCAST wild type MIC distributions and epidemiological cut-off values – the concept

Wild type (WT)

- a microorganism is defined as wild type (WT) for a species by the absence of acquired and mutational resistance mechanisms to the drug in question.
- a microorganism is categorized as wild type (WT) for a species by applying the appropriate cut-off value in a defined phenotypic test system.
- wild type microorganisms may or may not respond clinically to antimicrobial treatment.

Microbiological resistance - non-wild type (NWT)

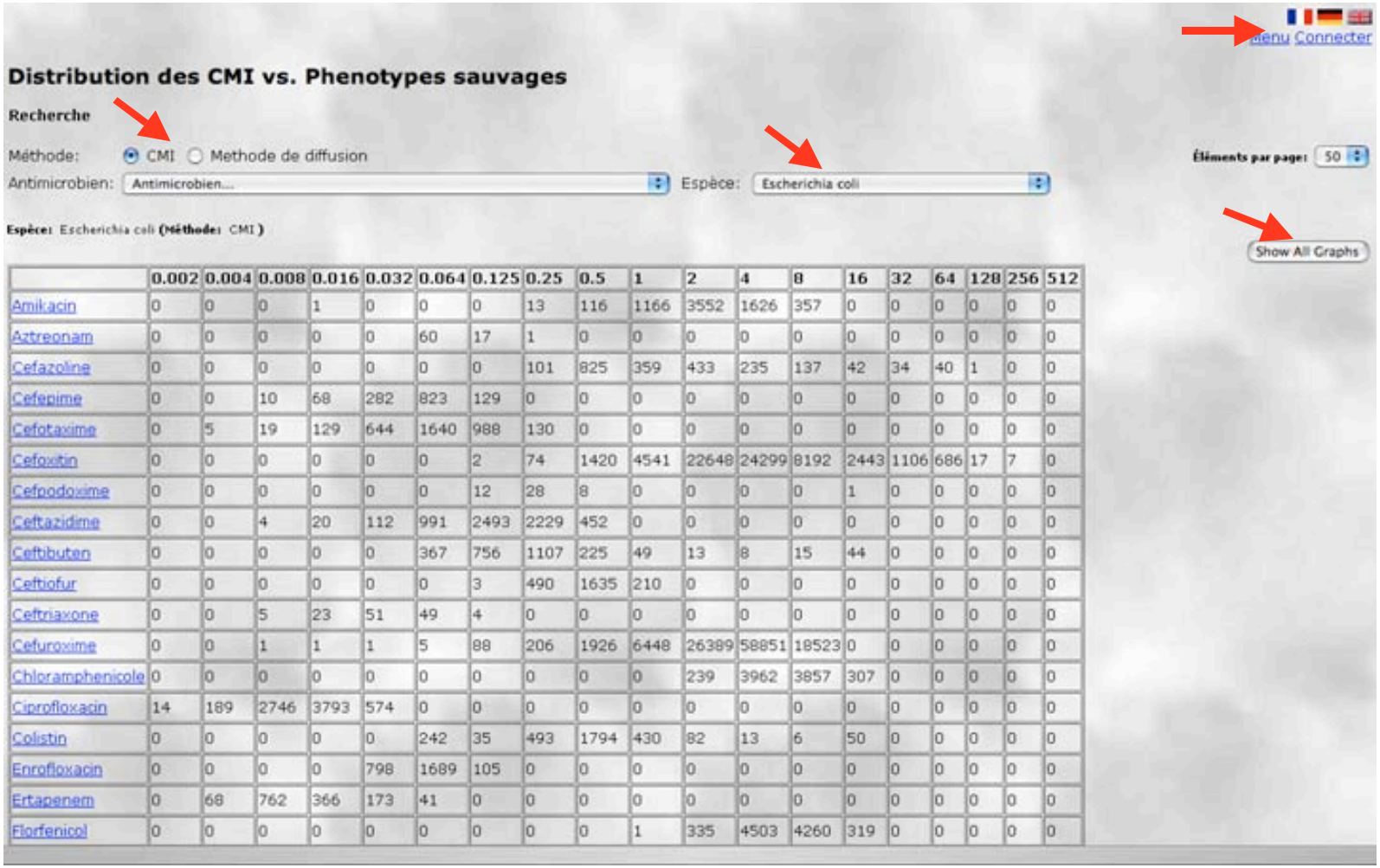
- a microorganism is defined as non-wild type (NWT) for a species by the presence of an acquired or mutational resistance mechanism to the drug in question.
- a microorganism is categorized as non-wild type (NWT) for a species by applying the appropriate cut-off value in a defined phenotypic test system.
- non-wild type microorganisms may or may not respond clinically to antimicrobial treatment.

Epidemiological cut-off values will not be altered by changing circumstances.

The wild type is presented as WT≤ c mg/L and non-wild type as NWT > X mg/L

www.eucast.org

EUCAST **developed the concept** of antimicrobial wild type MIC distributions and epidemiological cut-off values (JAC 52:145-148, 2003). Software was created to receive and display large volumes of MIC data for bacteria and fungi over the internet. It is freely available at



Menu Connecter

Distribution des CMI vs. Phenotypes sauvages

Recherche

Méthode: CMI Methode de diffusion

Antimicrobien: Antimicrobien... Espèce: Escherichia coli

Éléments par page: 50

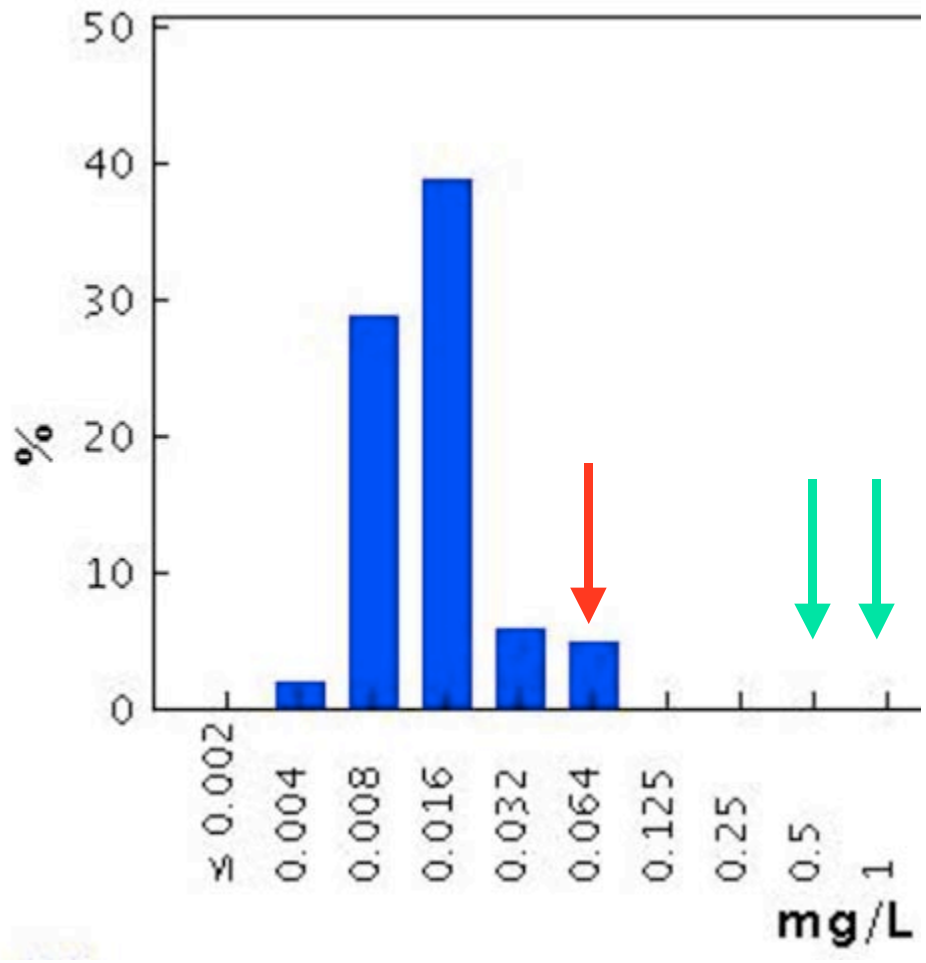
Espèce: Escherichia coli **(Méthode:** CMI **)**

Show All Graphs

	0.002	0.004	0.008	0.016	0.032	0.064	0.125	0.25	0.5	1	2	4	8	16	32	64	128	256	512
Amikacin	0	0	0	1	0	0	0	13	116	1166	3552	1626	357	0	0	0	0	0	0
Aztreonam	0	0	0	0	0	60	17	1	0	0	0	0	0	0	0	0	0	0	0
Cefazoline	0	0	0	0	0	0	0	101	825	359	433	235	137	42	34	40	1	0	0
Cefepime	0	0	10	68	282	823	129	0	0	0	0	0	0	0	0	0	0	0	0
Cefotaxime	0	5	19	129	644	1640	988	130	0	0	0	0	0	0	0	0	0	0	0
Cefoxitin	0	0	0	0	0	0	2	74	1420	4541	22648	24299	8192	2443	1106	686	17	7	0
Cefpodoxime	0	0	0	0	0	0	12	28	8	0	0	0	0	1	0	0	0	0	0
Ceftazidime	0	0	4	20	112	991	2493	2229	452	0	0	0	0	0	0	0	0	0	0
Ceftibuten	0	0	0	0	0	367	756	1107	225	49	13	8	15	44	0	0	0	0	0
Ceftiofur	0	0	0	0	0	0	3	490	1635	210	0	0	0	0	0	0	0	0	0
Ceftriaxone	0	0	5	23	51	49	4	0	0	0	0	0	0	0	0	0	0	0	0
Cefuroxime	0	0	1	1	1	5	88	206	1926	6448	26389	58851	18523	0	0	0	0	0	0
Chloramphenicole	0	0	0	0	0	0	0	0	0	0	239	3962	3857	307	0	0	0	0	0
Ciprofloxacin	14	189	2746	3793	574	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Colistin	0	0	0	0	0	242	35	493	1794	430	82	13	6	50	0	0	0	0	0
Enrofloxacin	0	0	0	0	798	1689	105	0	0	0	0	0	0	0	0	0	0	0	0
Ertapenem	0	68	762	366	173	41	0	0	0	0	0	0	0	0	0	0	0	0	0
Florfenicol	0	0	0	0	0	0	0	0	0	1	335	4503	4260	319	0	0	0	0	0

http://217.70.33.99/Eucast2/SearchController/search.jsp?action=init

EUCAST: EXEMPLE DE LA CIPROFLOXACINE (E. coli)

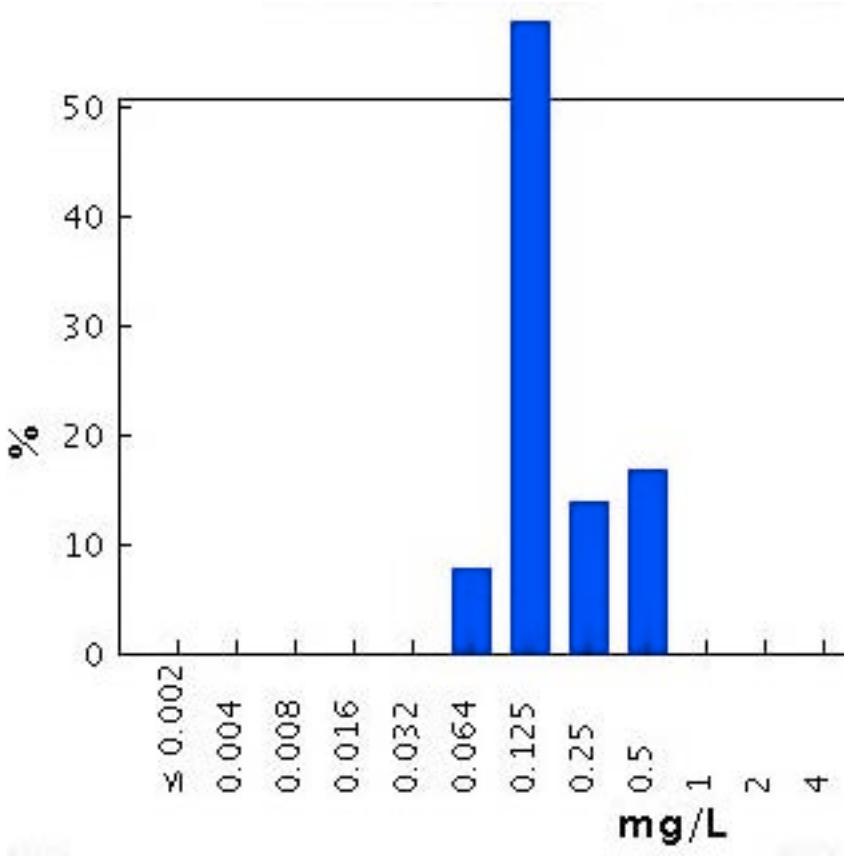


8876 observations (15 sources)

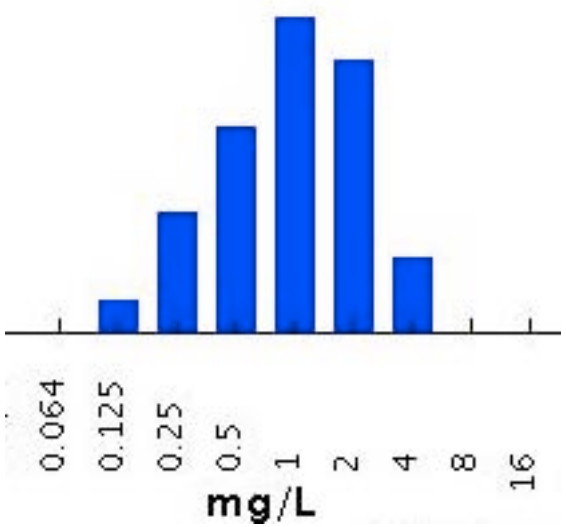
Concentrations cliniques
c ≤ 0,5 mg/L
C > 1 mg/L

Concentration épidémiologique ≤ 0,64 mg/L

EUCAST: EXEMPLE DE L'IMIPENEME



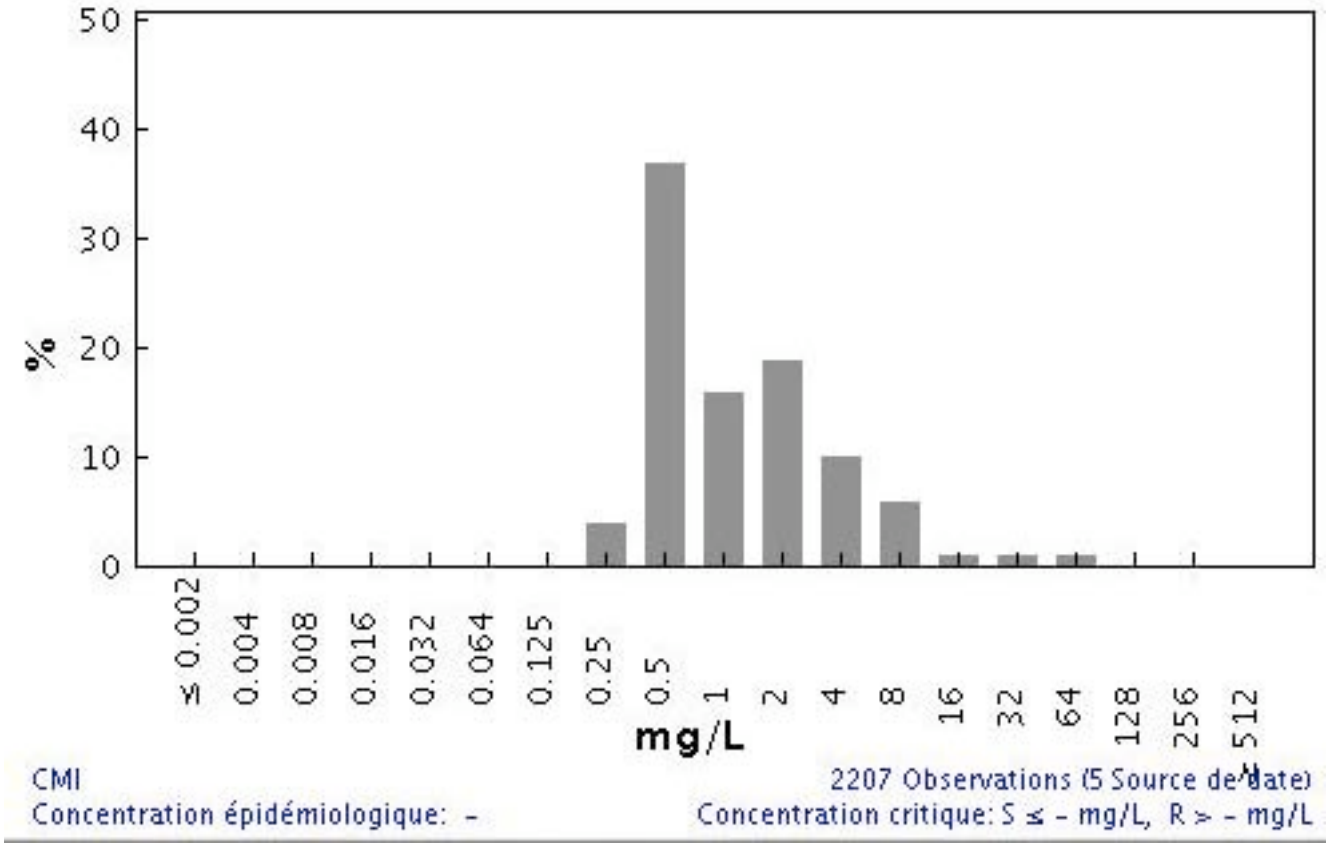
71682 observations (20 sources)
Concentrations cliniques
c ≤ 2 mg/L
C > 8 mg/L
Concentration épidémiologique ≤ 1 mg/L



14865 observations (16 sources)
Concentrations cliniques
c ≤ 2 mg/L
C > 8 mg/L
Concentration épidémiologique ≤ 4 mg/L

PAS D'ACCORD, DONC EN ATTENTE

E. coli et céfazoline



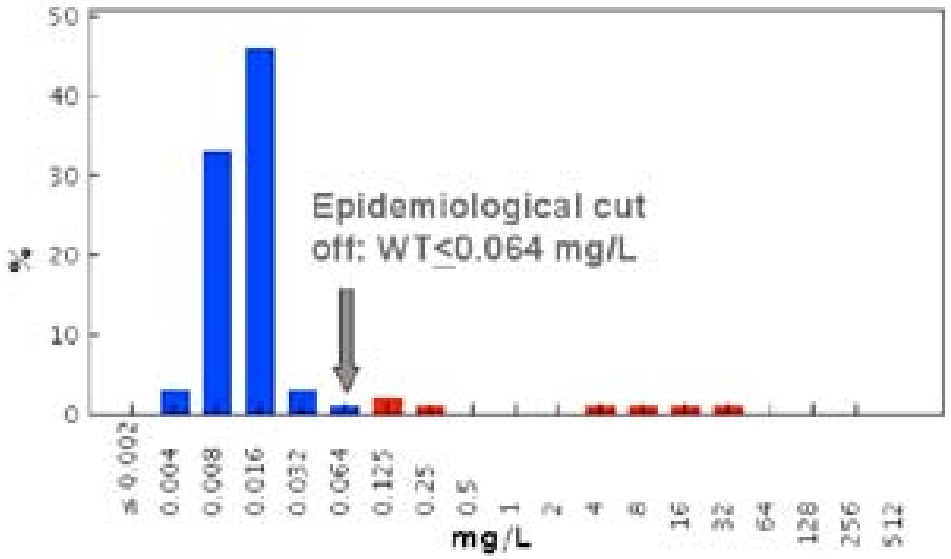
PROCEDURE D'HARMONISATION EUROPEENNE

1 Usage en clinique : comparable

Dosage	BSAC UK	CA-SFM France	CRG Netherlands	DIN Germany	NWGA Norway	SRGA Sweden	
Posologie normale	500 x 2 oral 400 x 2 iv	500 x 2 oral 200 x 2 iv	250 x 2 oral 200 x iv	500 x 2 oral 200 x 2 iv	200-400 x 2 oral 400 x 2 iv	500 x 2 oral 400 x 2 iv	
Posologie maximale	750 x 2 oral 400 x 3 iv	750 x 2 oral 400 x 3 iv	750 x 2 oral 400 x 3 iv	750 x 2 oral 400 x 2 iv	data pending	750 x 2 oral 400 x 3 iv	
Présentations	oral, iv	oral, iv	oral, iv	oral, iv	oral, iv	oral, iv	

2 Distribution des CMI, valeur épidémiologique: Accord

Ciprofloxacine
E. coli



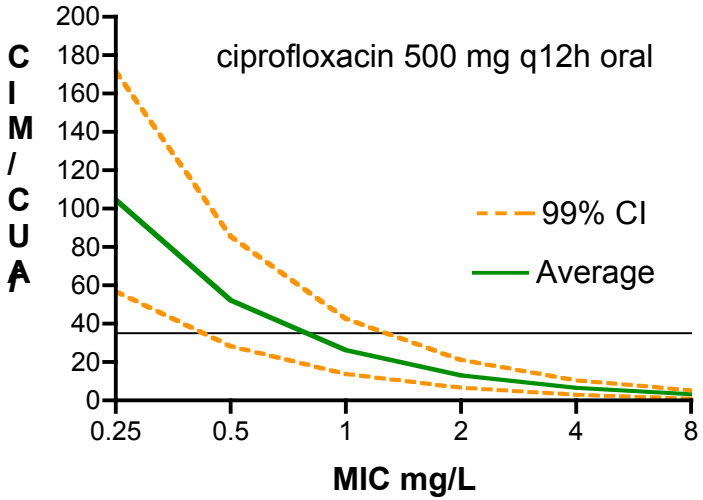
PROCEDURE D'HARMONISATION EUROPEENNE

3 Etude comparative des concentrations critiques

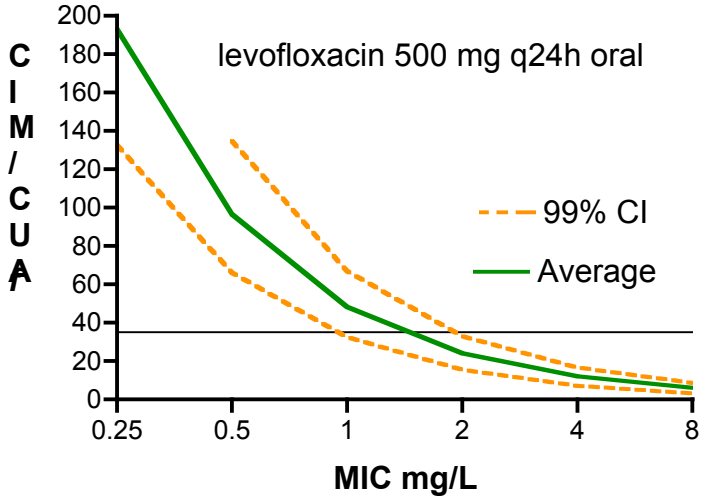
Breakpoints prior to harmonisation (mg/L) S≤ R>							
	BSAC	**CA-SFM**	**CRG**	**DIN**	**NWGA**	**SRGA**	**NCCLS**
	ND	**1/2**	**1/2**	**1/2**	**0.125/2**	**1/2**	
Species related breakpoints		**not yet**		**no**			
Enterobacteriaceae	**1/1**				**0.12/2**	**0.12/1**	**1/2**
Pseudomonas spp.	**1/4**				**ND**	**1/1**	**1/2**
Acinetobacter spp.						**1/1**	**1/2**
Staphylococci	**1/1**				**0.12/2**	**0.06/2**	**1/2**
Streptococci	**1/1**	**excluded**			**0.12/2**	**0.12/2**	**excl**
S. pneumoniae	**2/2 (I)***	**excluded**			**0.12/2 (I)***	**0.12/2 (I)***	**excl**
Enterococci	**excluded**	**excluded**			**0.12/2**	**0.12/2**	**1/2**
Haemophilus/Moraxella spp.	**1/1**				**0.12/0.5**	**0.12/0.25**	**1/-**
Corynebacteria						**excl**	
N. Meningitidis	**1/1**				**0.06/0.12**	**0.03/0.25**	
N. Gonorrhoeae	**0.06/-**		**0.06/1**		**0.06/0.12**	**0.06/0.25**	**0.06/0.5**
P. Multocida	**ND**				**ND**	**0.12/0.25**	
Anaerobes	**excluded**				**ND**	**excluded**	
Campylobacter spp.	**1/1**						
Helicobacter pylori	**2/2**	**no**	**no**		**no**	**no**	

PROCEDURE D'HARMONISATION EUROPEENNE

4 Etude pharmacocinétique (PK, PD .....)



S = 0.5 mg/L



S = 1 mg/L

5 Etude clinique pour définir c et C

6 Tentative de proposition de c. critiques (steering and national comittees)

7 Proposition de c. critiques auprès des comités nationaux

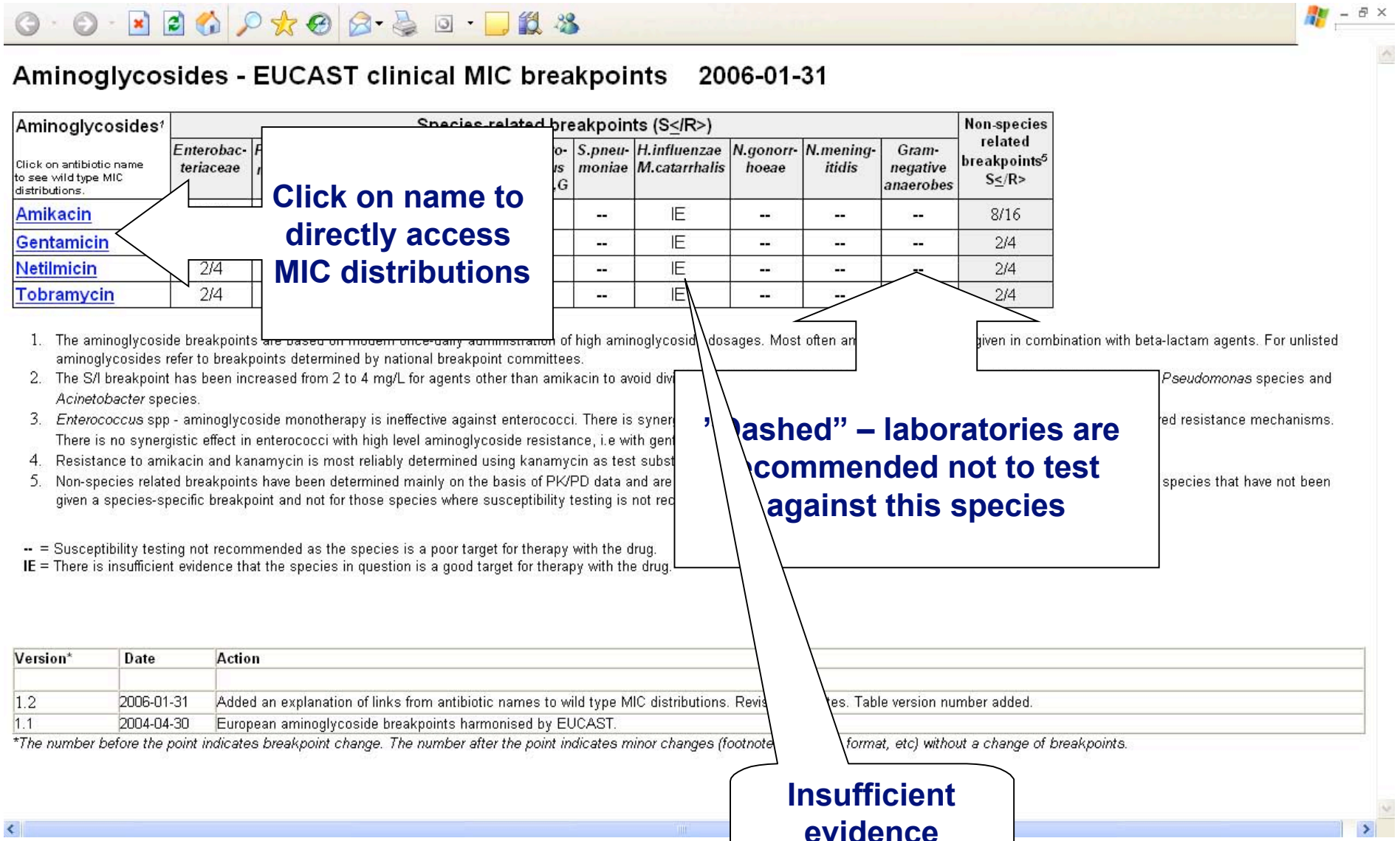
8 Tentative de proposition de c. critiques (experts, réactifs, industrie .....)

9 Publication officielle sur site

EUCAST breakpoint tables

(rationale documents)

http://www.eucast.org



Aminoglycosides - EUCAST clinical MIC breakpoints 2006-01-31

Aminoglycosides[1] Click on antibiotic name to see wild type MIC distributions.	Species related breakpoints (S≤/R>)						Non-species related breakpoints[5] S≤/R>
	Enterobacteriaceae	*S.pneumoniae*	*H.influenzae M.catarrhalis*	*N.gonorrhoeae*	*N.meningitidis*	*Gram-negative anaerobes*	
Amikacin		--	IE	--	--	--	8/16
Gentamicin		--	IE	--	--	--	2/4
Netilmicin	2/4	--	IE	--	--	--	2/4
Tobramycin	2/4	--	IE	--	--	--	2/4

Click on name to directly access MIC distributions

1. The aminoglycoside breakpoints are based on modern once-daily administration of high aminoglycoside dosages. Most often an … given in combination with beta-lactam agents. For unlisted aminoglycosides refer to breakpoints determined by national breakpoint committees.
2. The S/I breakpoint has been increased from 2 to 4 mg/L for agents other than amikacin to avoid div… *Pseudomonas* species and *Acinetobacter* species.
3. *Enterococcus* spp - aminoglycoside monotherapy is ineffective against enterococci. There is syner… ed resistance mechanisms. There is no synergistic effect in enterococci with high level aminoglycoside resistance, i.e with gent…
4. Resistance to amikacin and kanamycin is most reliably determined using kanamycin as test subst…
5. Non-species related breakpoints have been determined mainly on the basis of PK/PD data and are … species that have not been given a species-specific breakpoint and not for those species where susceptibility testing is not rec…

"…ashed" – laboratories are …commended not to test against this species

-- = Susceptibility testing not recommended as the species is a poor target for therapy with the drug.
IE = There is insufficient evidence that the species in question is a good target for therapy with the drug.

Version*	Date	Action
1.2	2006-01-31	Added an explanation of links from antibiotic names to wild type MIC distributions. Revis… es. Table version number added.
1.1	2004-04-30	European aminoglycoside breakpoints harmonised by EUCAST.

**The number before the point indicates breakpoint change. The number after the point indicates minor changes (footnote … format, etc) without a change of breakpoints.*

Insufficient evidence

HARMONISATION EUROPEENNE : CONSEQUENCES

A: Harmonisation des prévalences de résistance

	c, C	R (%)
BSAC	2 / 2	1.8 %
CA-SFM	4 / 32	0.6 %
CRG	4 / 8	0.9 %
DIN	2 / 8	1.1 %
NCCLS	8 / 32	0.6 %
NWGA	1 / 2	1.8 %
SRGA	0.5 / 1	2.6 %
"cut off"	< 0.5	5.0 %

B: Moindre importance de la lecture interprétative

C: Alerte plus rapide de nouveaux mécanismes de résistance

D: Suppression des catégories cliniques (aminosides.....)

E: Passage de S à I ou I à S (vérifier la mise à jour des automates)

Quelques exemples

AMINOGLYCOSIDES

Aminoglycosides[2] Click on antibiotic name to see wild type MIC distributions.		Species-related breakpoints (S≤/R>)								Non-species related breakpoints[1] S≤/R>
		Enterobacteriaceae	*Pseudomonas*[3]	*Acinetobacter*[4]	*Staphylococcus*	*Enterococcus*[4]	*Streptococcus A,B,C,G*	*S.pneumoniae*	*H.influenzae M.catarrhalis*	
Amikacin	RD	8/16	8/16	8/16	8/16[5]	--	--	--	IE	8/16
Gentamicin	RD	2/4	4/4	4/4	1/1	--	--	--	IE	2/4
Netilmicin	RD	2/4	4/4	4/4	1/1	--	--	--	IE	2/4
Tobramycin	RD	2/4	4/4	4/4	1/1	--	--	--	IE	2/4

changements

Tob 4-8
Netil 4 8
Genta 4-8

Tob 4-8
Netil 4 8
Genta 4-8

Nétil -
Amik -

-- = Susceptibility testing not recommended as the species is a poor target for therapy with the drug.
IE = There is insufficient evidence that the species in question is a good target for therapy with the drug.
RD =Rationale document listing data used for setting EUCAST breakpoints

Version*	Date	Action
1.1	2004-04-30	European aminoglycoside breakpoints harmonised by EUCAST.
1.2	2006-01-31	Added an explanation of links from antibiotic names to wild type MIC distributions. Revised footnotes. Table version number added.

**The number before the point indicates breakpoint change. The number after the point indicates minor changes (footnotes, spelling, format, etc) without a change of breakpoints.*

1 Non-species related breakpoints have been determined mainly on the basis of PK/PD data and are independent of MIC distributions of specific species. They are for use only for species that have not been given a species-specific breakpoint and not for those species where susceptibility testing is not recommended (marked with -- or IE in the table).

2 The aminoglycoside breakpoints are based on modern once-daily administration of high aminoglycoside dosages. Most often aminoglycosides are given in combination with beta-lactam agents. For unlisted aminoglycosides refer to breakpoints determined by national breakpoint committees.

3 The S/I breakpoint has been increased from 2 to 4 mg/L for agents other than amikacin to avoid dividing the wild type MIC distribution. Thus there is no intermediate category for *Pseudomonas* species and *Acinetobacter* species.

4 *Enterococcus* spp - aminoglycoside monotherapy is ineffective against enterococci. There is synergism between aminoglycosides and betalactams in enterococci without acquired resistance mechanisms. There is no synergistic effect in enterococci with high level aminoglycoside resistance, i.e with gentamicin MIC>128 mg/L.

5 Resistance to amikacin and kanamycin is most reliably determined using kanamycin as test substance.

- = Susceptibility testing not recommended as the species is a poor target for therapy with the drug.
-IE = There is insufficient evidence that the species in question is a good target for therapy with the drug.
-RD =Rationale document listing data used for setting EUCAST breakpoints

Fluoroquinolone[2] Click on antibiotic name to see wild type MIC distributions		Species-related breakpoints (S≤/R>)									
		Entero-bacteriaceae[3]	*Pseudo-monas/*	*Acineto-bacter*	*Staphylo-coccus*	*Entero-coccus*	*Strepto-coccus A,B,C,G*	*S.pneu-moniae*[5]	*H.influenzae M.catarrhalis*	*N.gonorr-hoeae*	*N.menin-gitidis*[8]
Ciprofloxacin	RD	0.5/1	0.5/1	1/1[4]	1/1[5]	--	--	0.125/2	0.5/*0.5*[7]	0.03/0.06	0.03/0.06
Levofloxacin	RD	1/2	1/2	1/2	1/2	--	1/2	2/2	1/1[7]	IE	IE
Moxifloxacin	RD	0.5/1	--	--	0.5/1	--	0.5/1	0.5/0.5	0.5/*0.5*[7]	IE	IE
Norfloxacin	RD	0.5/1	--	--	--	--	--	--	--	IE	--
Ofloxacin	RD	0.5/1	--	--	1/1[3]	--	--	0.125/4	0.5/*0.5*[7]	0.12/0.25	IE

1-2

0,06-0,12

2 For bp for other fluoroquinolones (eg. pefloxacin and enoxacin) - refer to bp determined by national breakpoint committees.

3 *Salmonella* spp - there is clinical evidence for cip to indicate a poor response in systemic infections caused by *Salmonella* spp with low-level fluoroquinolone resistance (MIC> 0.064 mg/L).....

4 The S/I breakpoint has been increased from 0.5 to1 mg/L to avoid dividing the wild type MIC distribution.....

5 *Staphylococcus* spp - breakpoints for ciprofloxacin and ofloxacin relate to high dose therapy.

6 WT *S.pneumoniae* are not considered susceptible to ciprofloxacin or ofloxacin and are therefore categorized as intermediate.....

7 Strains with MIC values above the S/I breakpoint are very rare or not yet reported.....

Glycopeptides Click on antibiotic name to see wild type MIC distributions.		Species-related breakpoints (S≤I							
		Enterobac-teriaceae	*Pseudomonas*	*Acinetobacter*	*Staphylo-coccus*[2]	*Entero-coccus*	*Strepto-coccus A,B,C,G*	*S.pneu-moniae*	*H M*
Vancomycin	RD	--	--	--	4/8[2]	4/8	4/4[3]	4/4[3]	
Teicoplanin	RD	--	--	--	4/8[2]	4/8	4/4[3]	4/4[3]	

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2 *Staphylococcus aureus* may be categorized as falsely susceptible to glycopeptides as glycopeptide MICs for strains with reduced susceptibility are dependant on the test conditions, in particular the medium used.

3 Strains with MIC values above the S/I breakpoint are very rare or not yet reported. The id and ist must be repeated and if the result is confirmed the isolate sent to a reference laboratory.
Until there is evidence regarding clinical response for confirmed isolates with MIC above the current resistant breakpoint (in italics) they should be reported resistant.

Cephalosporins Click on antibiotic name to see wild type MIC distributions.		Species-related breakpoints (S≤/R>)								
		Enterobacteriaceae[2]	*Pseudomonas*[3]	*Acinetobacter*	*Staphylococcus*[4]	*Enterococcus*	*Streptococcus A,B,C,G*	*S.pneumoniae*	*H.influenzae M.catarrhalis*	*N.gonorrhoeae*
Cefazolin	RD	--	--	--	note[4]	--	--	--	--	--
Cefepime	RD	1/8	8/8	--	note[4]	--	0.5/*0.5*[6]	1/2	0.25/*0.25*[6]	--
Cefotaxime	RD	1/2	--	--	note[4]	--	0.5/*0.5*[6]	0.5/2[6]	0.12/*0.12*[6]	0.12/*0.12*[6]
Ceftazidime	RD	1/8	8/8	--	--	--	--	--	--	--
Ceftriaxone	RD	1/2	--	--	note[4]	--	0.5/*0.5*[6]	0.5/2[6]	0.12/*0.12*[6]	0.12/*0.12*[6]
Cefuroxime	RD	8/8[5]	--	--	note[4]	--	0.5/*0.5*[6]	0.5/1	1/2	--

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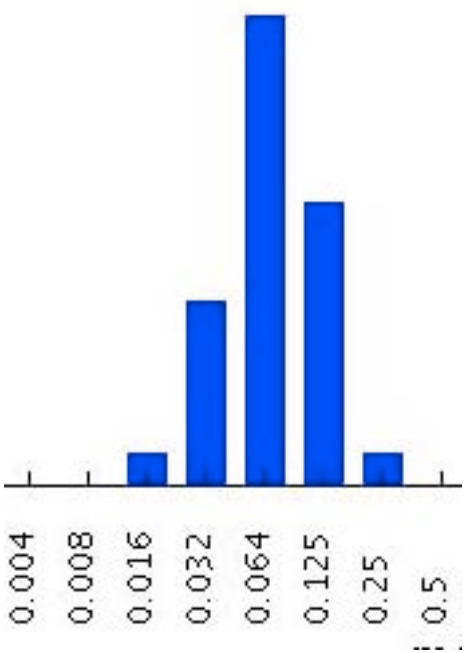
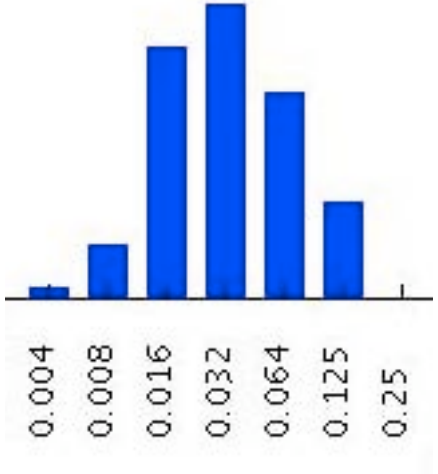
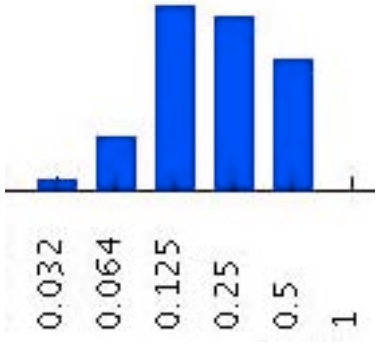
Suppression de la lecture interpétative !



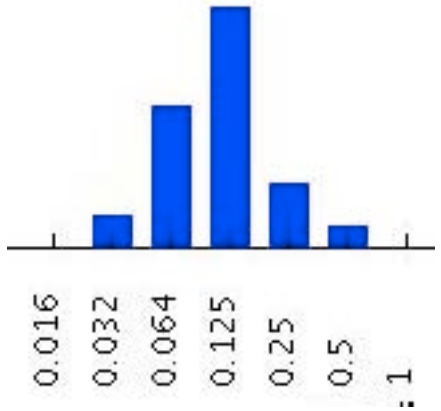
E. coli



K. pneumoniae



E. cloacae



E. aerogenes

CEPHALOSPORINES

2 The cephalosporin breakpoints for Enterobacteriaceae will detect resistance mediated by most ESBLs and other clinically important beta-lactamases in Enterobacteriaceae. However, some ESBL-producing strains may appear susceptible or intermediate with these breakpoints. Laboratories may want to use a test which specifically screens for the presence of ESBL.

3 For cefepime and ceftazidime the susceptible breakpoint for *Pseudomonas aeruginosa* has been increased to avoid dividing the MIC wild type distribution. The breakpoint relates to high dosage of both drugs, i.e. 2 g x 3.

4 Susceptibility of staphylococci to cephalosporins is inferred from the methicillin susceptibility (except ceftazidime which should not be used for staphylococcal infections).

5 The non-species related S/I breakpoint of 4 mg/L divides the wild type MIC distributions of relevant Enterobacteriacae. To avoid this, the S/I-breakpoint has been increased to 8 mg/L. The breakpoint pertains to a dosage of 1.5 g x 3 and to *E.coli* and *Klebsiella spp* only.

6 Strains with MIC values above the S/I breakpoint are very rare or not yet reported. The ID and AST must be repeated and if the result is confirmed the isolate sent to a reference laboratory. Until there is evidence regarding clinical response for confirmed isolates with MIC above the current resistant breakpoint (in italics) they should be reported resistant.

EUCAST

The EUCAST presentation can be freely downloaded from the www.eucast.org to be used by anyone wanting to present EUCAST to colleagues, students, committees, administrations etc.

Comments and suggestions are invited:
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