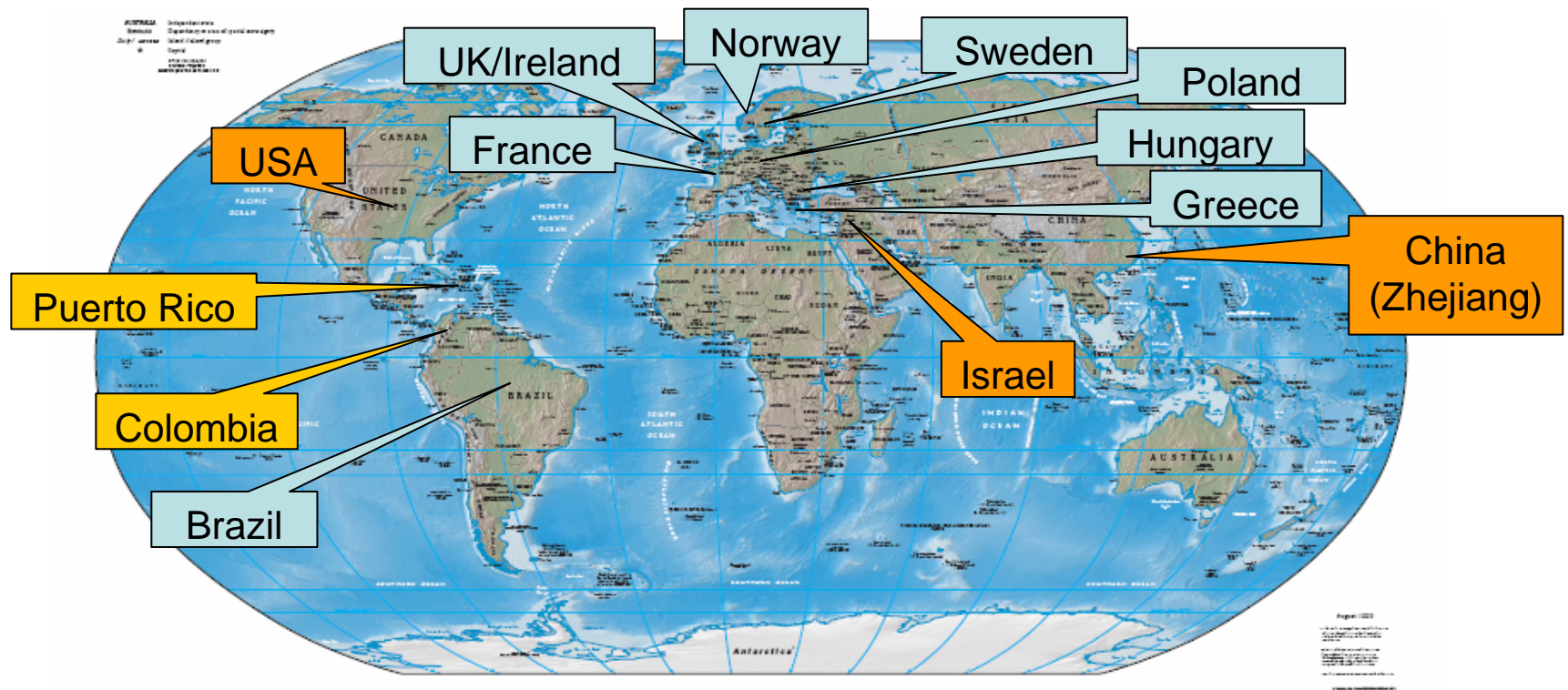


KPC-produserende
Klebsiella pneumoniae
- status Norge og Sverige
Mai 2009

Ørjan Samuelsen, Dr. scient
Kompetansesenter for påvisning av antibiotikaresistens
orjan.samuelsen@unn.no
www.unn.no/k-res



KPC - worldwide



Enterobacteriaceae

K. pneumoniae, *K. oxytoca*, *E. coli*, *S. marcescens*, *P. mirabilis*,
S. enterica, *C. freundii*, *Enterobacter* sp.

P. aeruginosa, *P. putida*

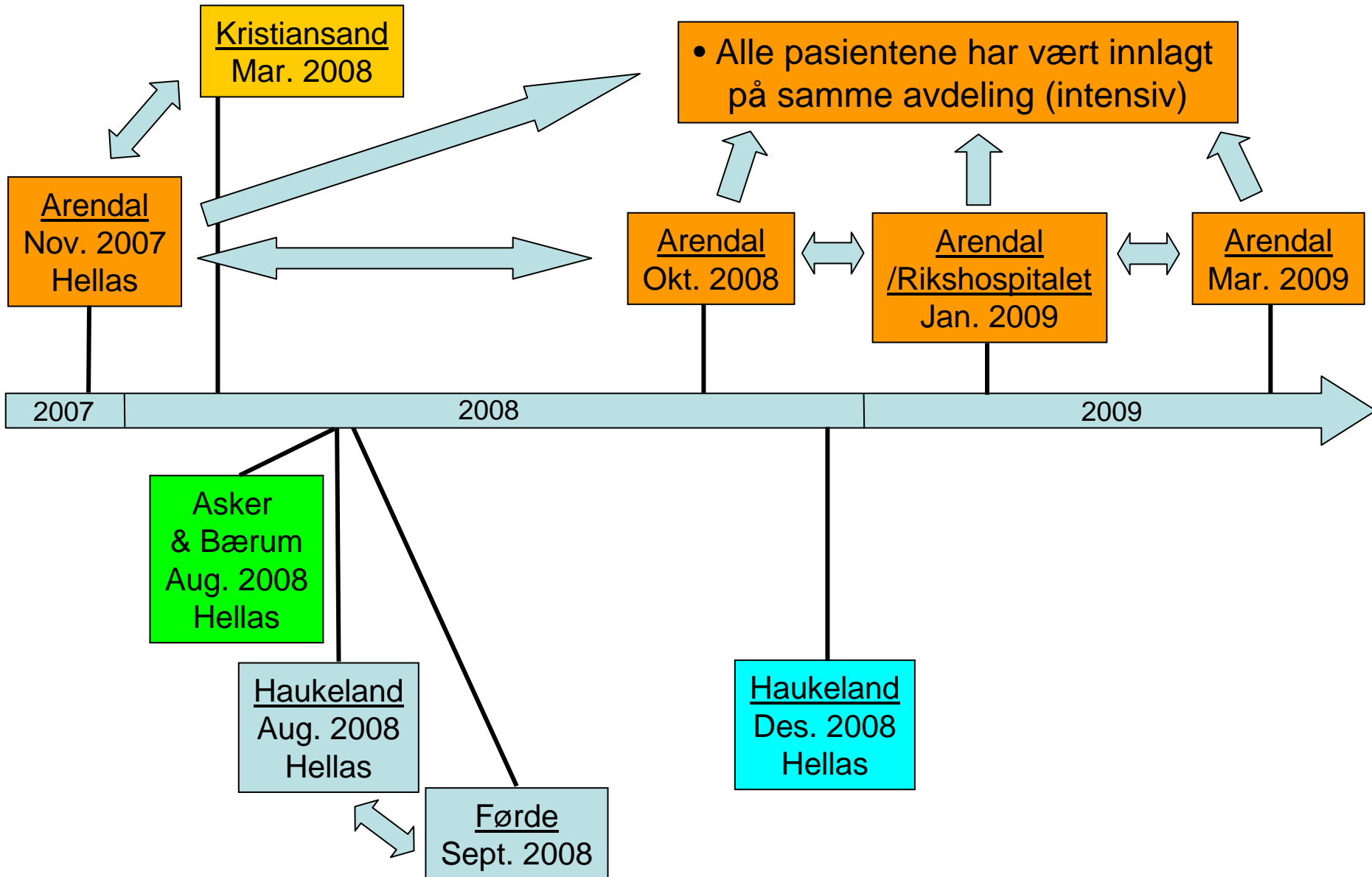
KPC Sverige



2007
K. pneumoniae
 bla_{KPC-2}
Import fra Hellas

2008
K. pneumoniae
 bla_{KPC-3}
Import fra Israel

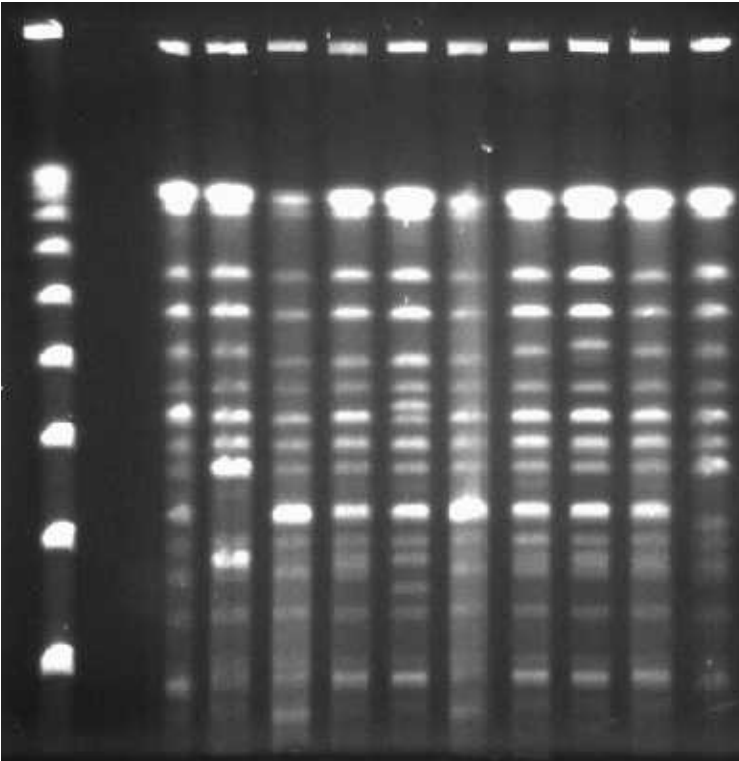
KPC Norge



Molekylær epidemiologi

- *K. pneumoniae*, bla_{KPC-2}

PFGE:

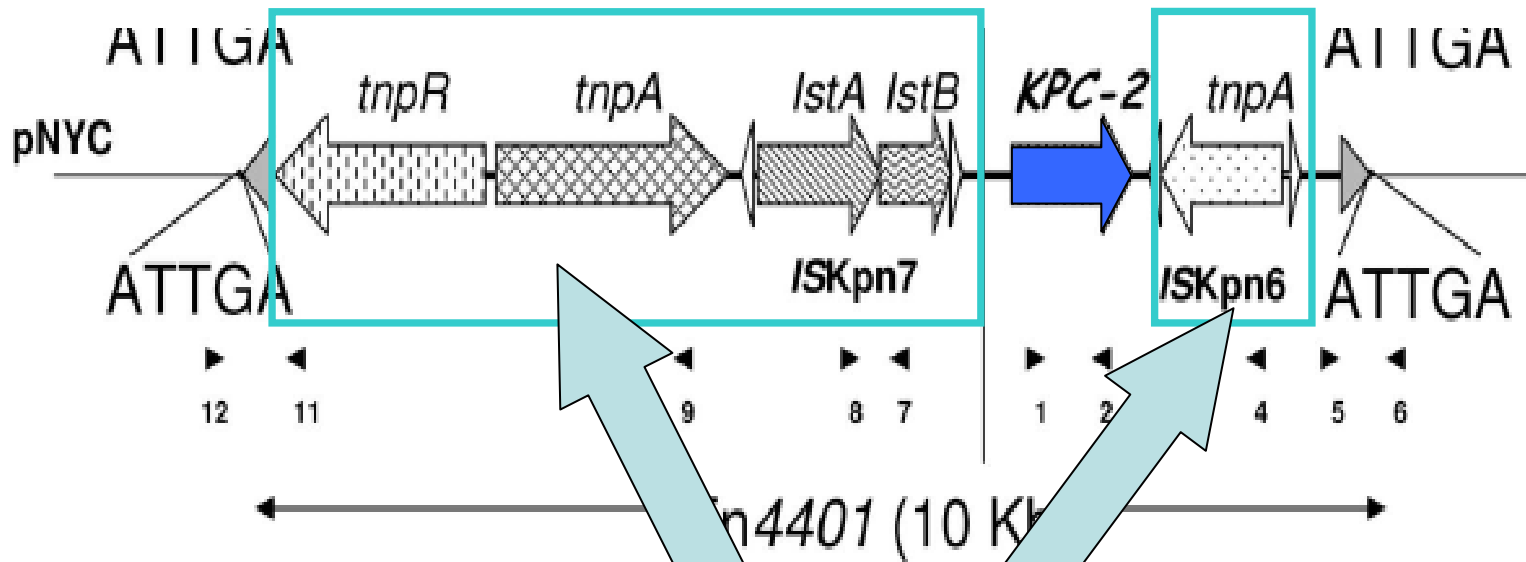


MLST: ST258



- England
- Scotland
- Ungarn
- Polen
- USA
- Israel

Genetisk struktur



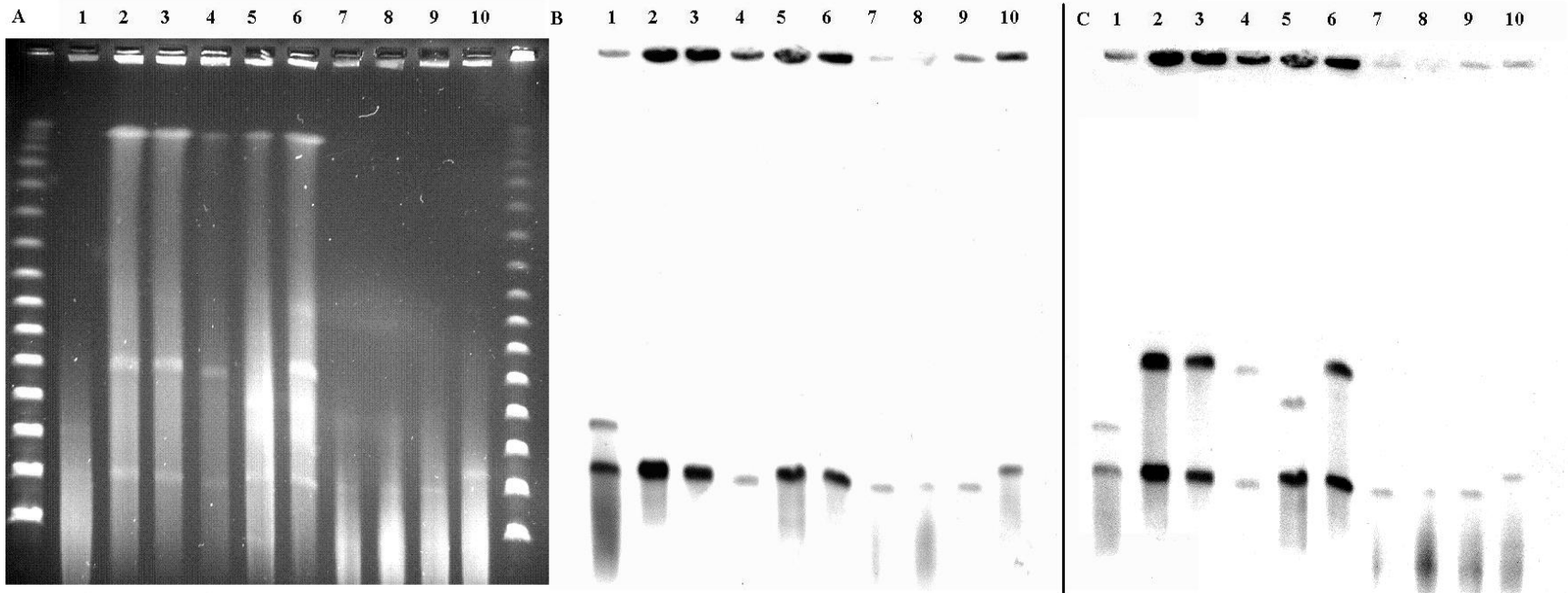
Mobile genetiske elementer –
mulighet for økt spredning

Plasmid analyse

S1 nuklease- PFGE

Southern blotting -
*bla*_{KPC}-probe

Southern blotting -
FII_s-probe



Figur

Innhold Brønn

A - <i>S1</i> -Nuklease PFGE	1 - K47-25	4 - K52-36	7 - K52-74	10 - K54-5
B - Hybridisering KPC-2 Probe	2 - K48-58	5 - K52-37	8 - K53-64	
C - Hybridisering Rep FII _s Probe	3 - K52-10	6 - K52-43	9 - K54-4	

Resistenzprofil

MIC; mg/L

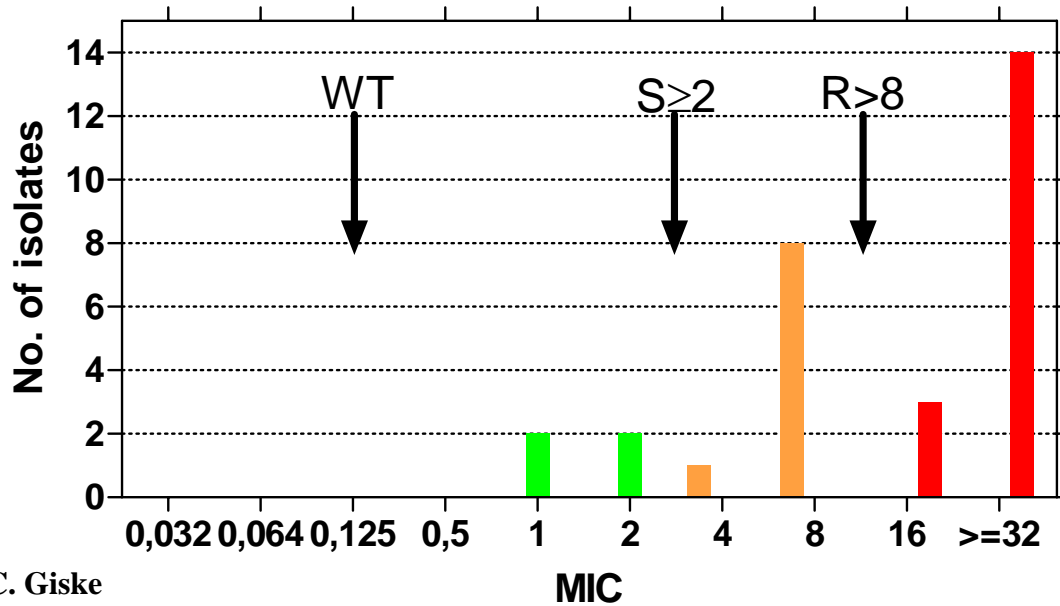
Antibiotikum	K47-25	K48-58	K52-10	K52-36	K52-37	K52-43	K52-74	K53-64	K54-5	K57-33
TZP	>256	>256	>256	>256	>256	>256	>256	>256	>256	>256
FOX	128	64	64	>256	64	64	64	32	256	32
CPD	>256	>256	>256	>256	>256	256	256	>256	>256	64
CTX	64	32	32	64	16	32	32	16	64	16
CT/CTL	>16/>1	>16/>1	>16/>1	>16/>1	>16/>1	>16/>1	>16/>1	>16/>1	>16/>1	>16/>1
CAZ	>256	>256	>256	>256	>256	>256	>256	>256	>256	32
TZ/TZL	>32/>4	>32/>4	>32/>4	>32/>4	>32/>4	>32/>4	>32/>4	>32/>4	>32/>4	>32/>4
PM/PML	>16/>4	>16/>4	>16/>4	>16/>4	>16/>4	>16/>4	>16/>4	>16/>4	>16/>4	>16/>4
ATM	>256	>256	>256	>256	>256	>256	>256	>256	>256	>256
MEM (2/8)	8	8	16	>32	32	4	4	4	32	2
IPM (2/8)	4	2	2	32	4	2	2	2	32	1
ETP (0.5/1)	16	16	16	16	4	16	8	8	>32	4
CIP	32	>32	>32	>32	>32	>32	R	>32	32	0.064
AMK	64	64	64	16	16	32	N.D.	2	32	2
GEN	2	2	2	1	2	1	2	0.25	2	0.36
TOB	32	16	32	16	16	16	16	0.5	16	0.75
COL	8	16	0.5	0.5	0.5	1	8	0.5	4	0.5
TIG	2	2	2	2	4	1	2	2	2	0.5

Deteksjon

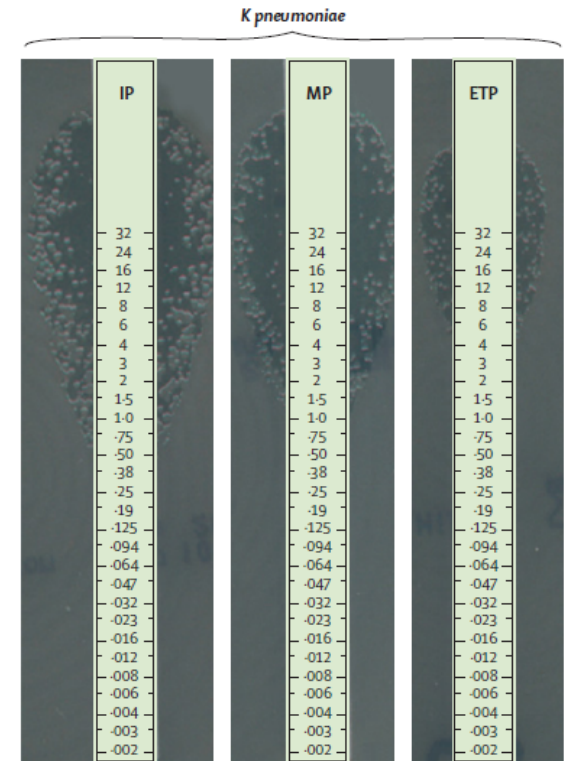
MIC; mg/L

Antibiotikum	K47-25	K48-58	K52-10	K52-36	K52-37	K52-43	K52-74	K53-64	K54-5	K57-33
MEM (2/8)	8	8	16	>32	32	4	4	4	32	2
IPM (2/8)	4	2	2	32	4	2	2	2	32	1
ETP (0.5/1)	16	16	16	16	4	16	8	8	>32	4

Meropenem MIC: KPC-isolates



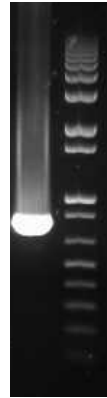
C. Giske



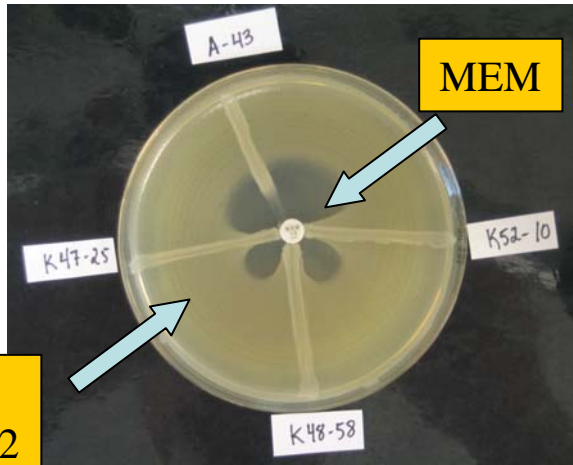
Nordmann P. et.al. *Lancet Infect. Dis.* (2009)

Deteksjon KPC

- PCR

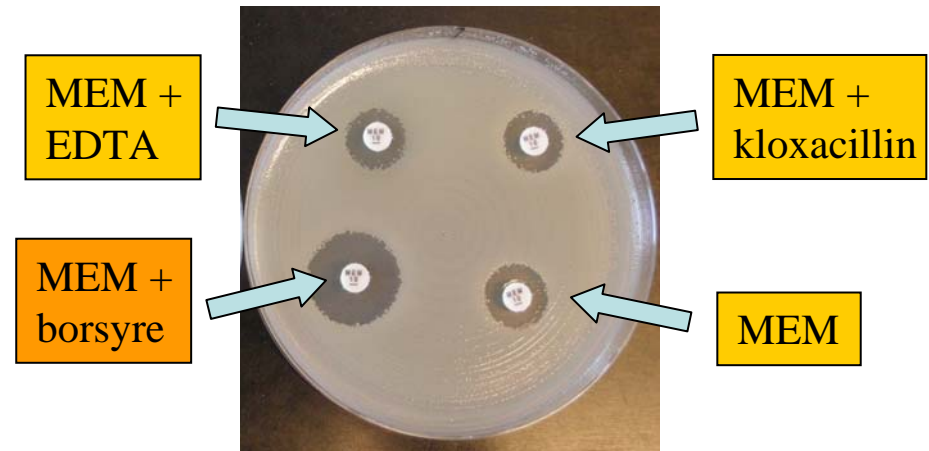


- Hodge test



E. coli
ATCC 25922

- Borsyre synergi



C. Giske et al. unpub. result



UNIVERSITETSSYKEHUSET NORD-NORGE
DAVVI-NOROGGA UNIVERSITEHTABUOHCCIEVISSU

Kompetansesenter for påvisning av
antibiotikaresistens (K-res)

HELSE ••• NORD

Deteksjon KPC

- Problem: Positiv ESBL_A disk test (BD):

	K47-25	K48-58	K52-10	K52-36	K52-37	K52-43
CAZ/CAZ+klav	NEG	POS	POS	POS	POS	POS
CTX/CTX+klav	NEG	NEG	NEG	NEG	NEG	NEG

ESBL Etester: negative

- Problem: Positiv borsyre test (AmpC)

	K47-25	K48-58	K52-10	K52-36	K52-37	K52-43
FOX/FOX-borsyre	NEG	POS	POS	NEG	POS	NEG

AmpC Etest: negative



Oppsummering

- Status KPC Norge/Sverige:
 - Sverige: 2 pasienter
 - Norge: 9 pasienter
- Import - Hellas
- Sannsynlig nosokomial spredning – Norge
- Multiresistente isolater (1 unntak)
- Klonalt like stammer – internasjonal klon
- Deteksjon:
 - Lav karbapenem MIC
 - Borsyre disk test/(Positiv ESBL disk test)
 - Bekreftelse referanselaboratorium

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