



EUCAST

European Committee
on Antimicrobial
Susceptibility Testing

Coagulase-negative staphylococci

**Calibration of zone diameter
breakpoints to MIC values and/or
resistance mechanisms**

Version 8.0
January 2026

Coagulase-negative staphylococci MIC and zone diameter correlates

- The following histograms present inhibition zone diameter distributions from EUCAST antimicrobial susceptibility testing. In most, the different colours of the bars indicate different MIC values. In some, the colours of the bars indicate a resistance gene or a resistance mechanism.
- The distributions include data for wild-type isolates and for isolates with acquired resistance mechanisms. A large number of isolates with MIC values close to the edge of the wild-type distribution and/or close to EUCAST clinical breakpoints were intentionally included. These distributions can not be used to infer resistance rates or the performance of the tests with routine isolates.
- For some agents, isolates were tested on more than one occasion, including parallel tests with disks and media from several manufacturers. When this is the case, data are presented as both the “number of isolates tested” and the “total number of MIC-zone diameter correlates”, including replicate tests and parallel tests with disks and media from different sources.

Coagulase-negative staphylococci

Materials and methods

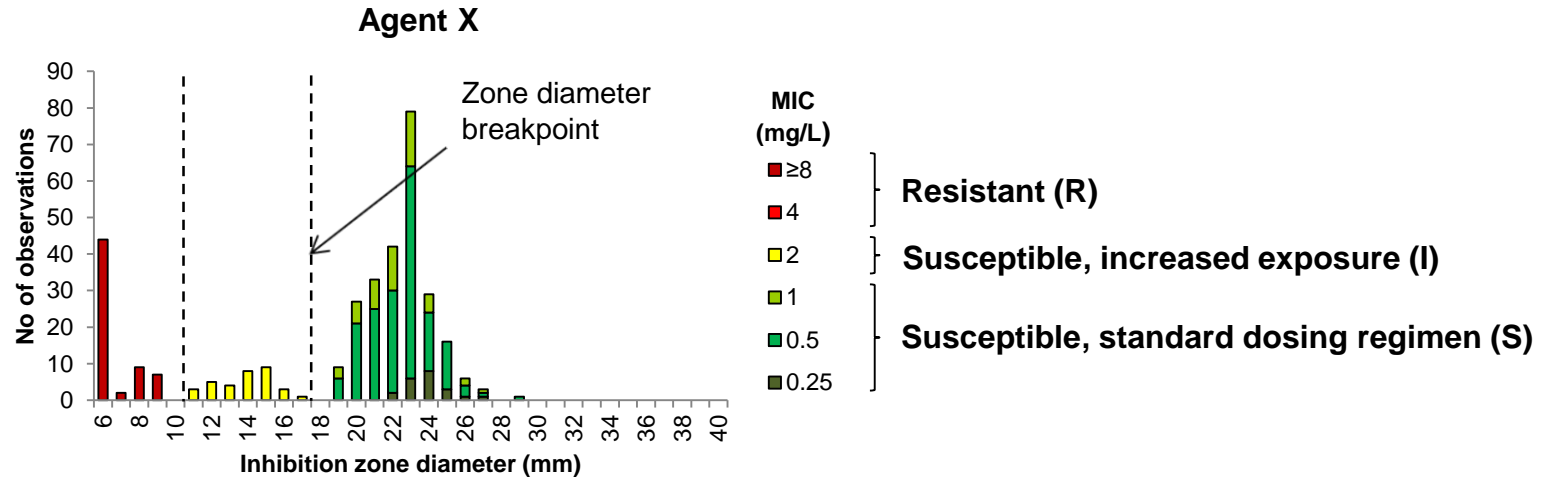
- Antimicrobial susceptibility testing was performed on clinical isolates of coagulase-negative staphylococci (CoNS), including isolates with known resistance mechanisms. The collection comprised *S. capitis*, *S. cohnii*, *S. epidermidis*, *S. haemolyticus*, *S. hominis*, *S. lugdunensis* and *S. warneri*. Disk diffusion was performed according to EUCAST methodology and MICs were determined with the ISO broth microdilution method. Species identification was performed with MALDI-TOF MS.
- The distributions of MIC vs. zone diameter in this presentation are the result of a collaboration between EUCAST and several other laboratories (JMI Laboratories, Iowa, US; Statens Serum Institut, Copenhagen, Denmark; K-res, Tromsø, Norway; Clinical Microbiology, Lund, Sweden; St. Olav Hospital, Trondheim, Norway; Slagelse-Næstved Hospital, Denmark; Centre National de Référence des Staphylocoques, Lyon, France and Laboratory Specialists Inc., USA).
- Data on cefoxitin screen for methicillin resistance are presented at the end of this presentation.
- This presentation is based on EUCAST Clinical Breakpoint Tables v. 16.0.

Changes from previous version (7.1)

Changes
<ul style="list-style-type: none">• MIC and zone diameter breakpoints changed for trimethoprim and trimethoprim-sulfamethoxazole.

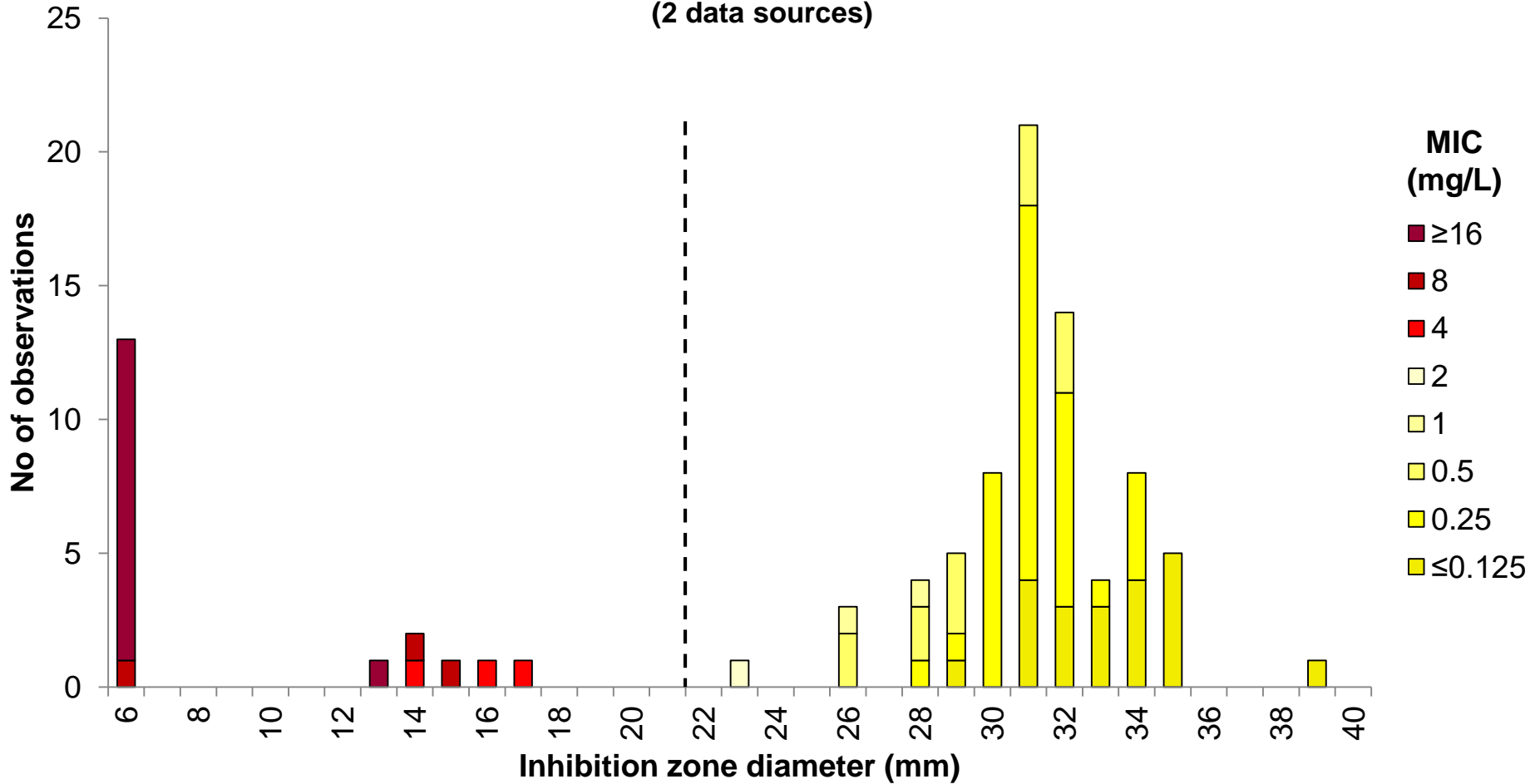
Explanation of graphs:

- These graphs show zone diameter distributions with MIC values or resistance mechanisms as coloured bars. Colours are related to current EUCAST MIC breakpoints.



Ciprofloxacin 5 µg vs. MIC CoNS, 93 isolates

(2 data sources)



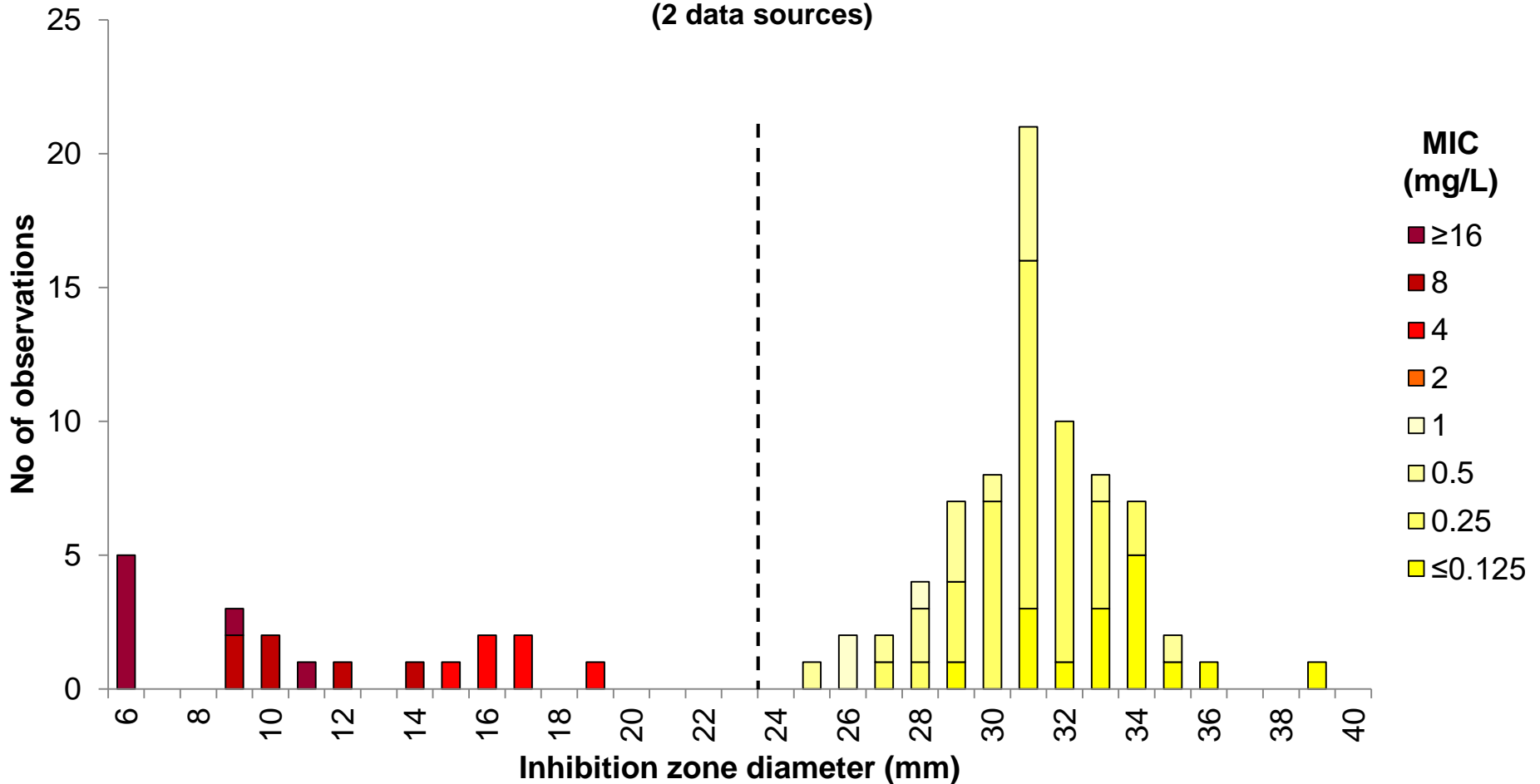
Breakpoints

MIC $S \leq 0.001$, $R > 2$ mg/L

Zone diameter $S \geq 50$, $R < 22$ mm

Levofloxacin 5 µg vs. MIC CoNS, 93 isolates

(2 data sources)



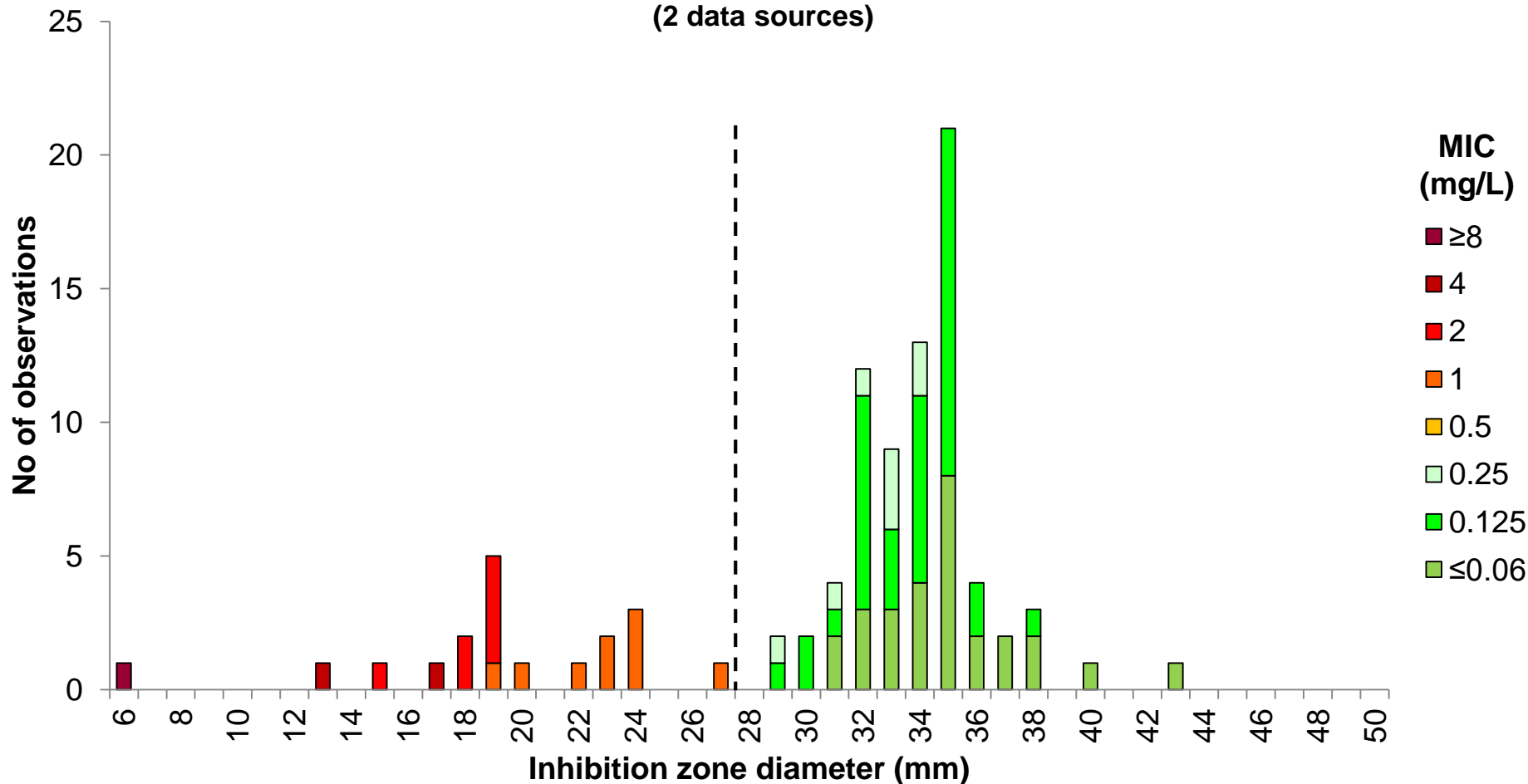
Breakpoints

MIC $S \leq 0.001$, $R > 1$ mg/L

Zone diameter $S \geq 50$, $R < 24$ mm

Moxifloxacin 5 µg vs. MIC CoNS, 93 isolates

(2 data sources)



Breakpoints

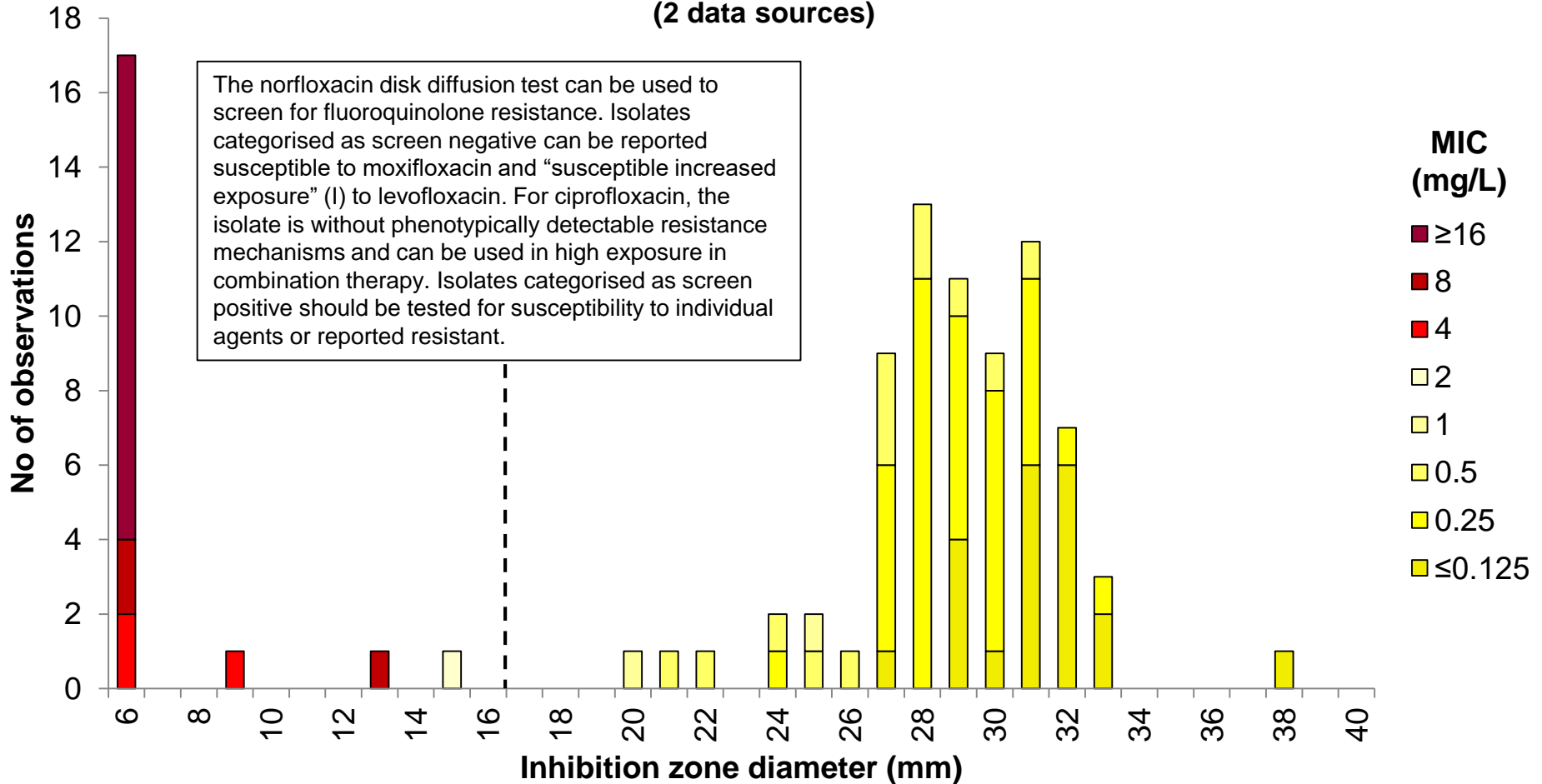
MIC $S \leq 0.25$, $R > 0.25$ mg/L

Zone diameter $S \geq 28$, $R < 28$ mm

Norfloxacin 10 µg vs. Ciprofloxacin MIC

CoNS, 93 isolates

(2 data sources)



Breakpoints

Ciprofloxacin MIC

$S \leq 0.001$, $R > 2$ mg/L

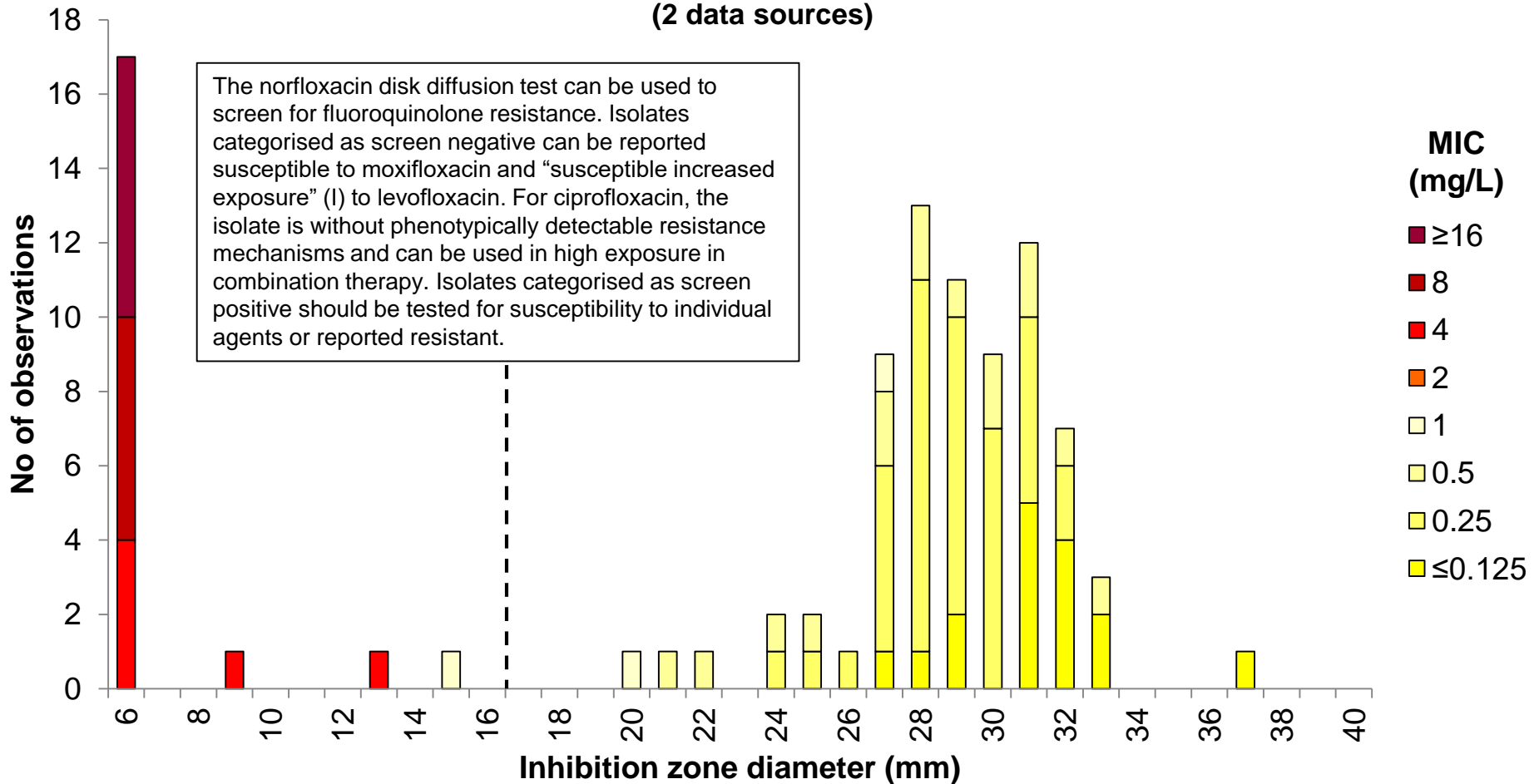
Norfloxacin zone diameter (screen)

$S \geq 17$, $R < 17$ mm

Norfloxacin 10 µg vs. Levofloxacin MIC

CoNS, 93 isolates

(2 data sources)



Breakpoints

Levofloxacin MIC

$S \leq 0.001$, $R > 1$ mg/L

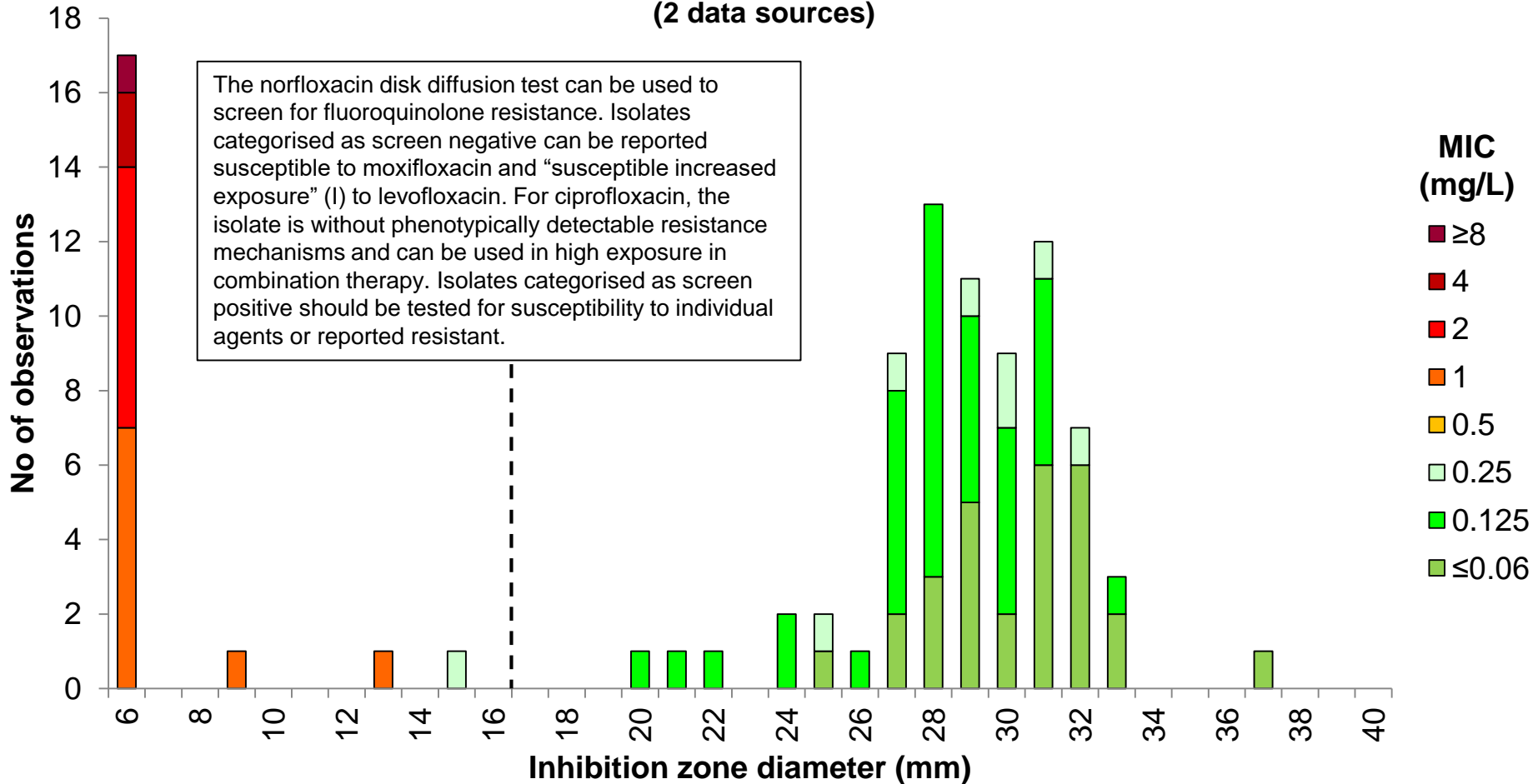
Norfloxacin zone diameter (screen)

$S \geq 17$, $R < 17$ mm

Norfloxacin 10 µg vs. Moxifloxacin MIC

CoNS, 93 isolates

(2 data sources)



Breakpoints

Moxifloxacin MIC

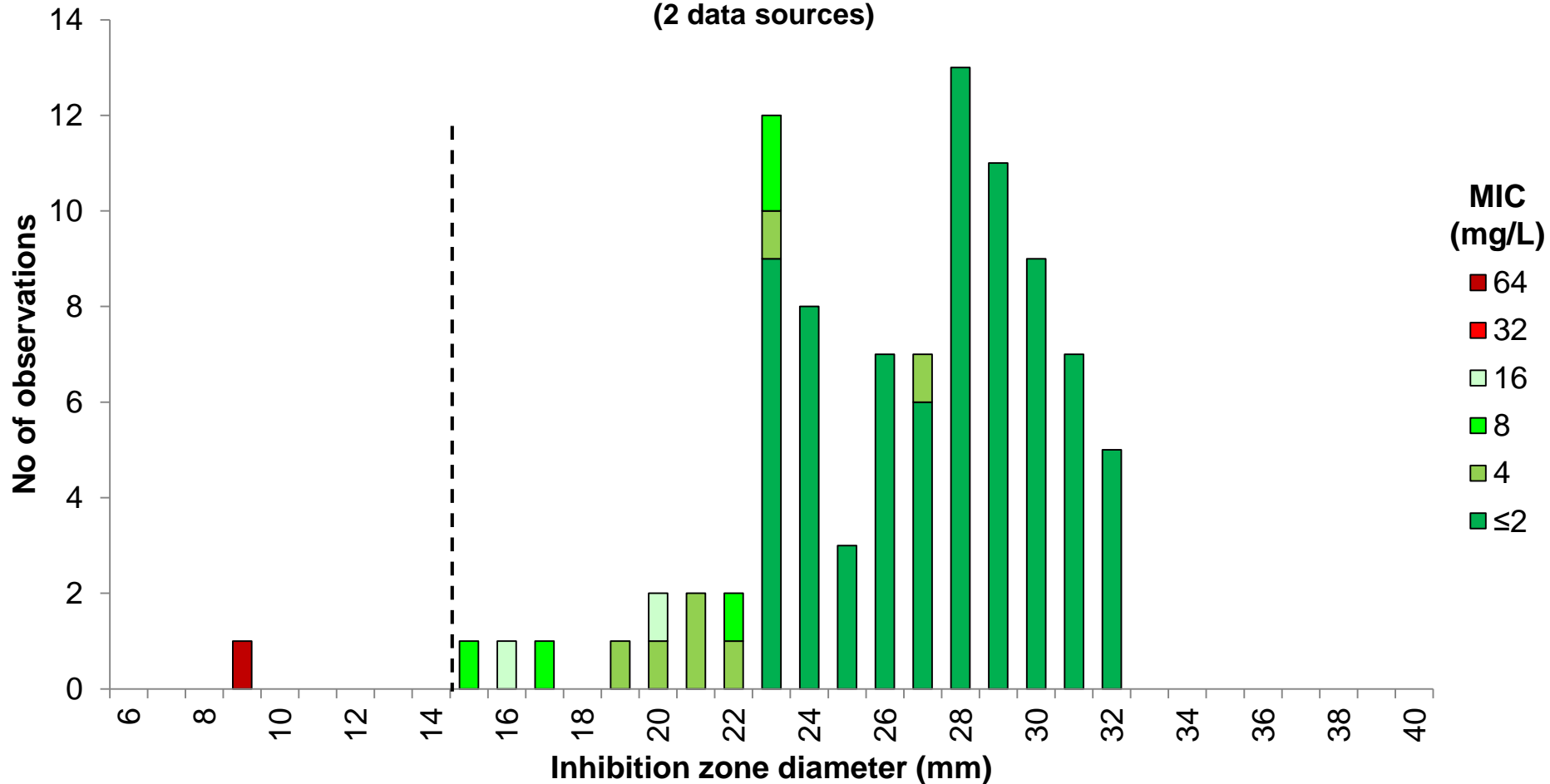
S ≤ 0.25, R > 0.25 mg/L

Norfloxacin zone diameter (screen)

S ≥ 17, R < 17 mm

Amikacin 30 µg vs. MIC CoNS, 93 isolates

(2 data sources)



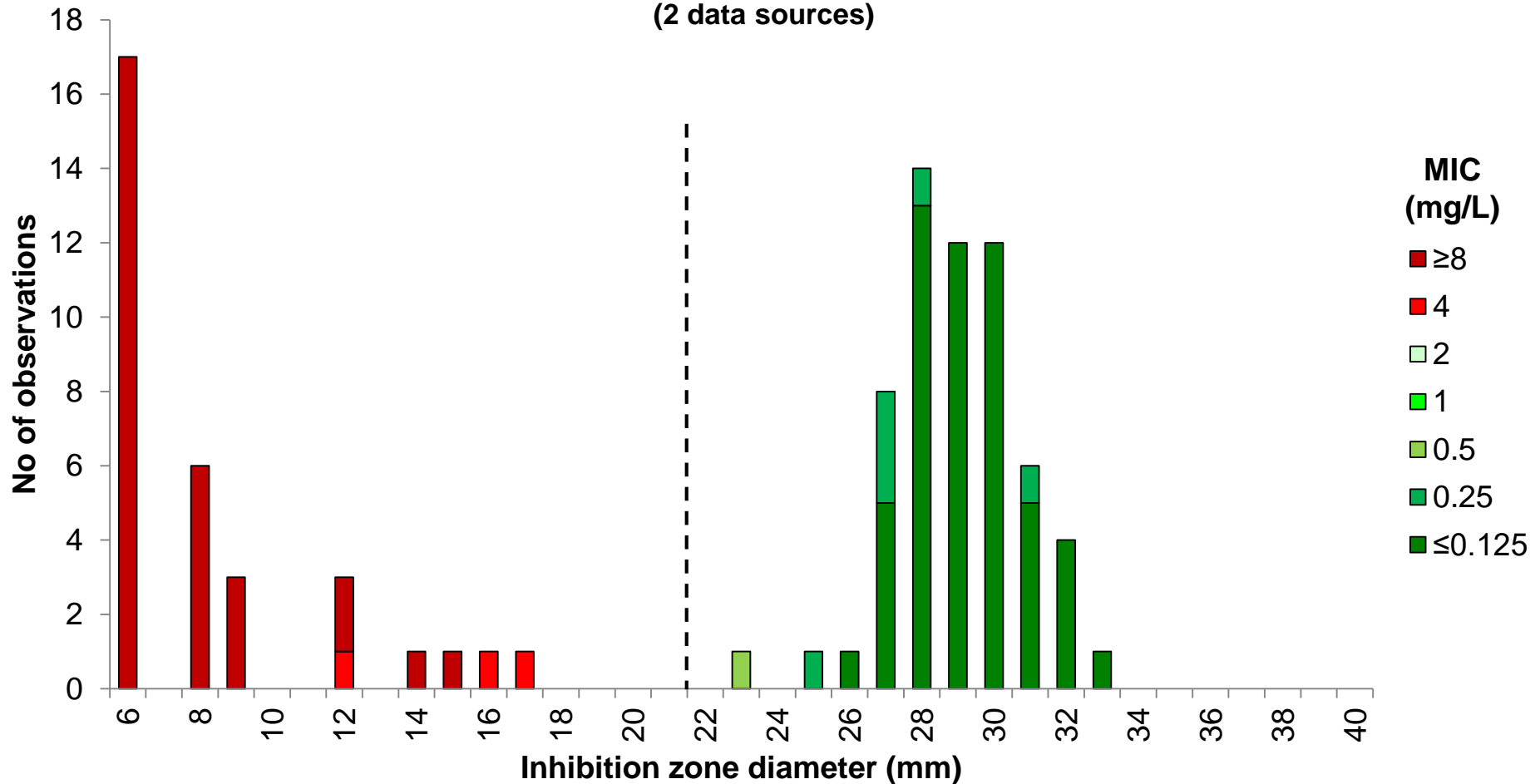
Breakpoints

MIC S ≤ 16, R > 16 mg/L

Zone diameter S ≥ 15, R < 15 mm

Gentamicin 10 µg vs. MIC CoNS, 93 isolates

(2 data sources)



Breakpoints

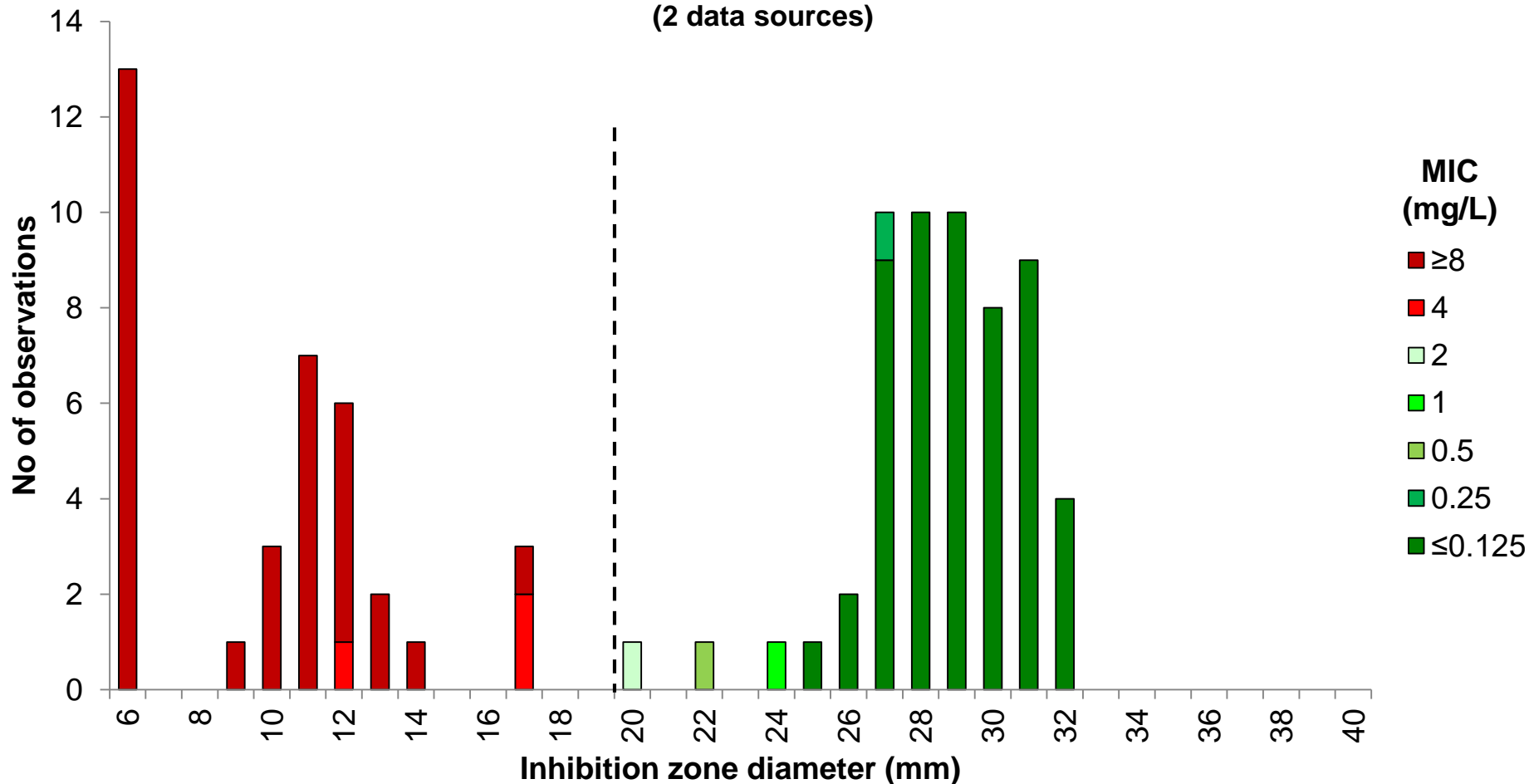
MIC S ≤ 2, R > 2 mg/L

Zone diameter S ≥ 22, R < 22 mm

Tobramycin 10 µg vs. MIC

CoNS, 93 isolates

(2 data sources)



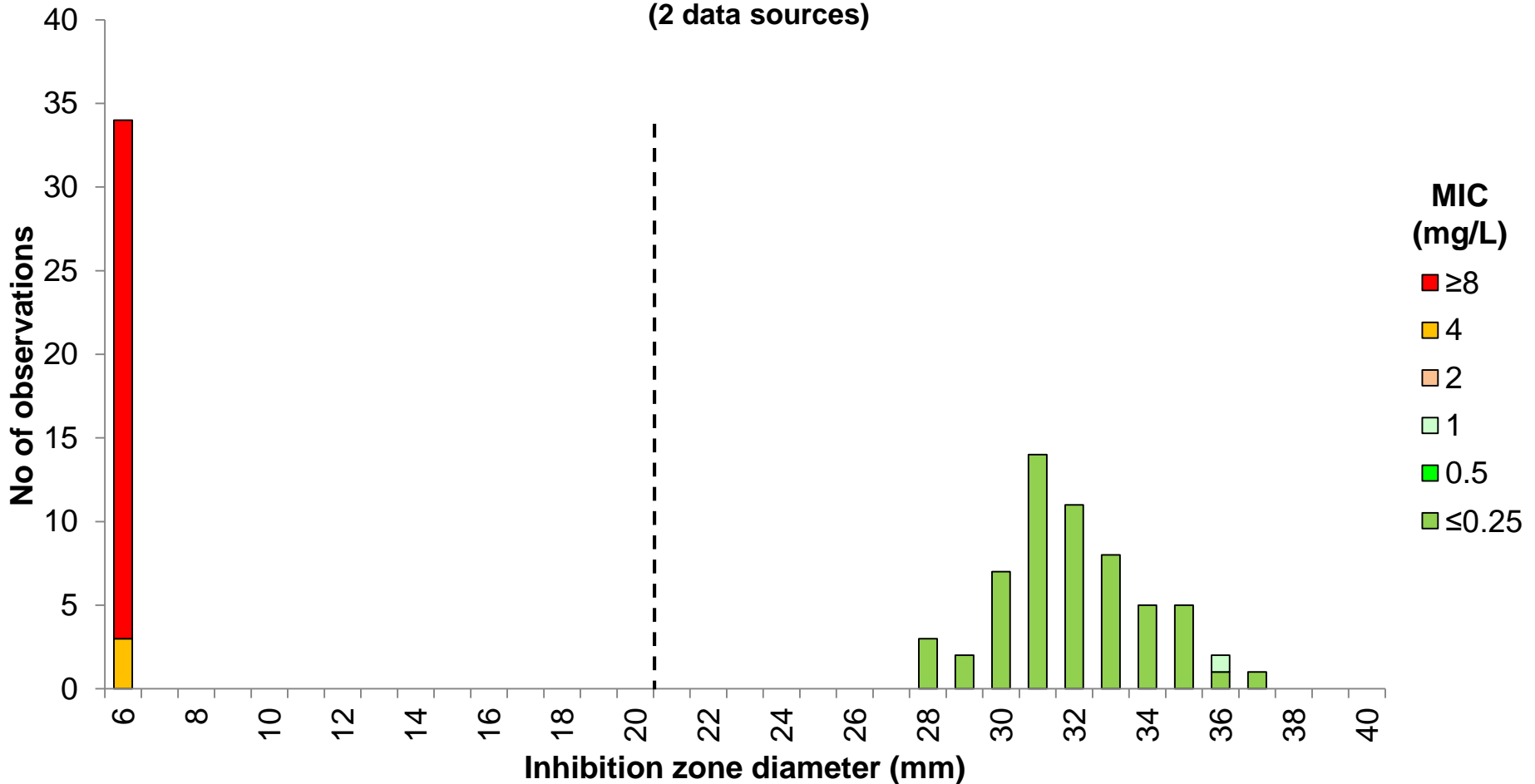
Breakpoints

MIC S ≤ 2, R > 2 mg/L

Zone diameter S ≥ 20, R < 20 mm

Erythromycin 15 µg vs. MIC CoNS, 92 isolates

(2 data sources)



Breakpoints

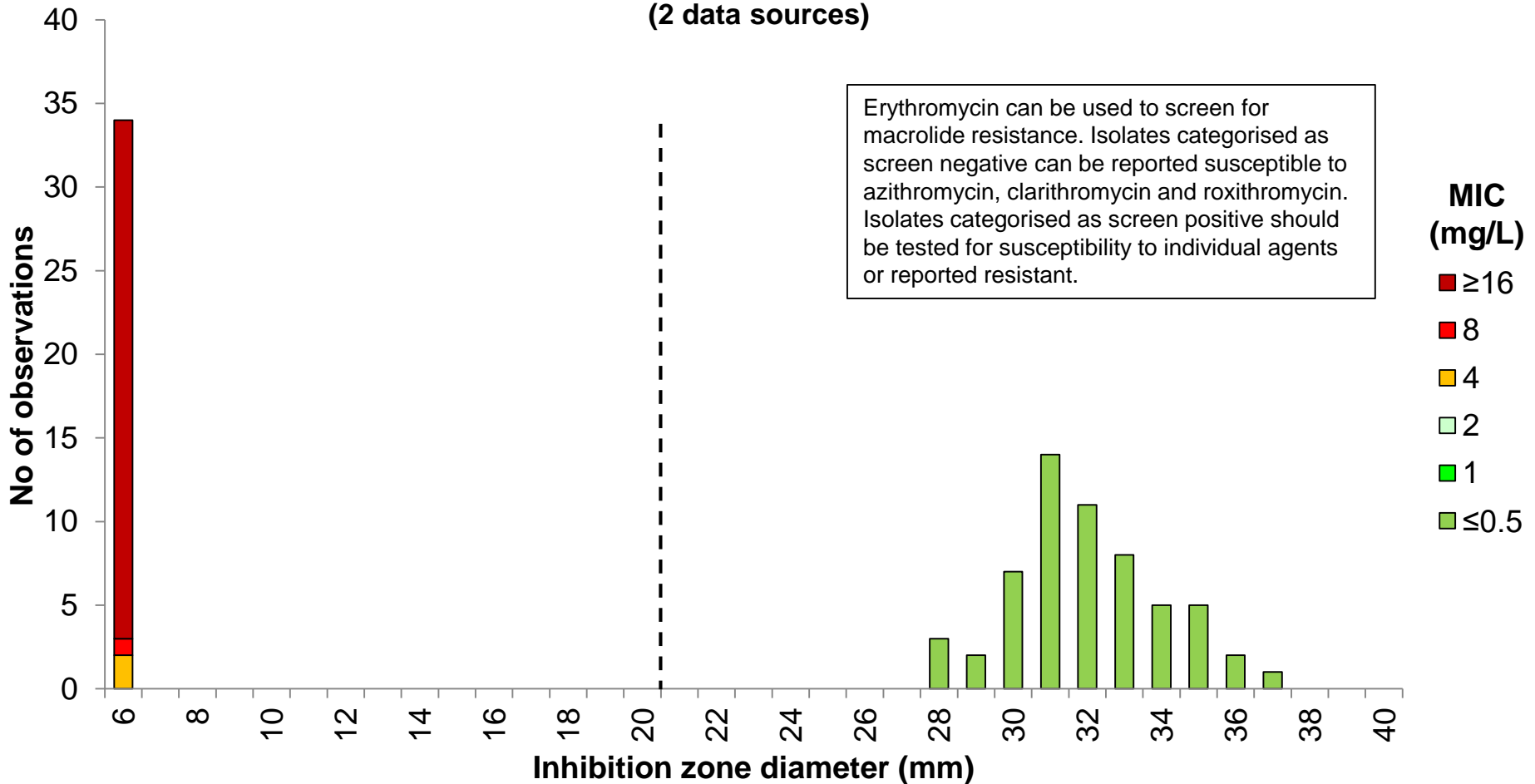
MIC $S \leq 1, R > 1$ mg/L

Zone diameter $S \geq 21, R < 21$ mm

Erythromycin 15 µg vs. Azithromycin MIC

CoNS, 92 isolates

(2 data sources)



Breakpoints

Azithromycin MIC

S ≤ 2, R > 2 mg/L

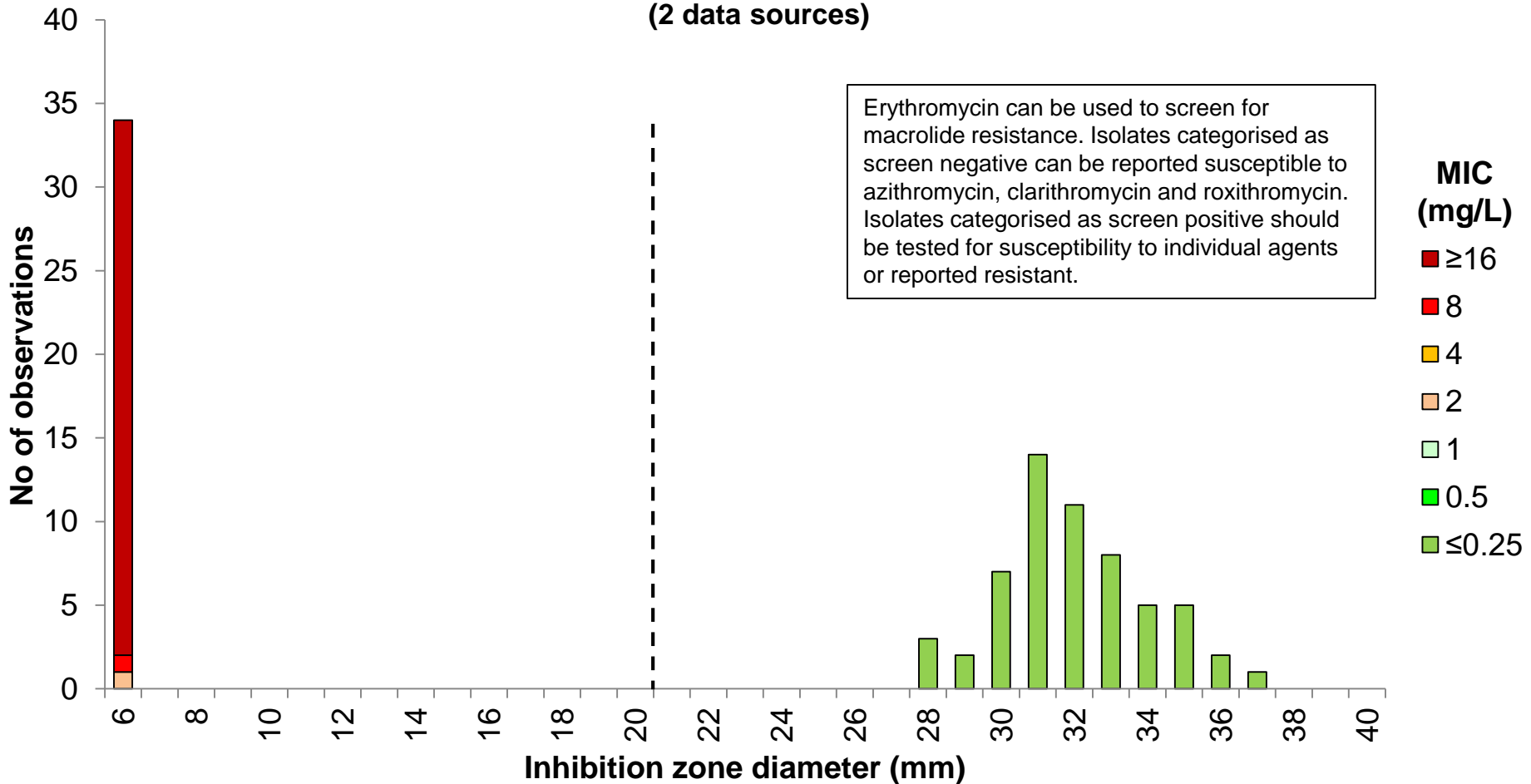
Erythromycin zone diameter

S ≥ 21, R < 21 mm

Erythromycin 15 µg vs. Clarithromycin MIC

CoNS, 92 isolates

(2 data sources)



Breakpoints

Clarithromycin MIC

S \leq 1, R>1 mg/L

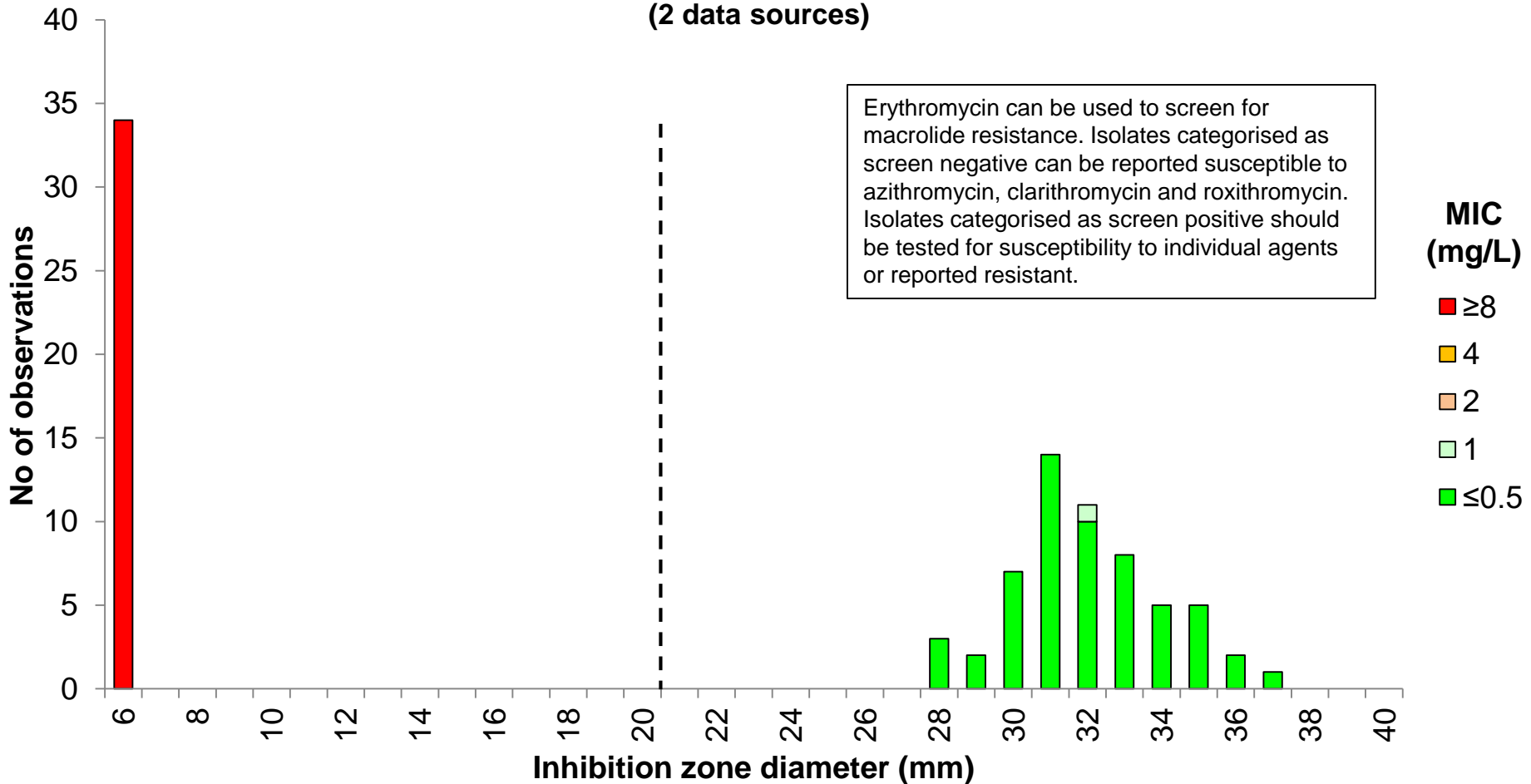
Erythromycin zone diameter

S \geq 21, R<21 mm

Erythromycin 15 µg vs. Roxithromycin MIC

CoNS, 92 isolates

(2 data sources)



Breakpoints

Roxithromycin MIC

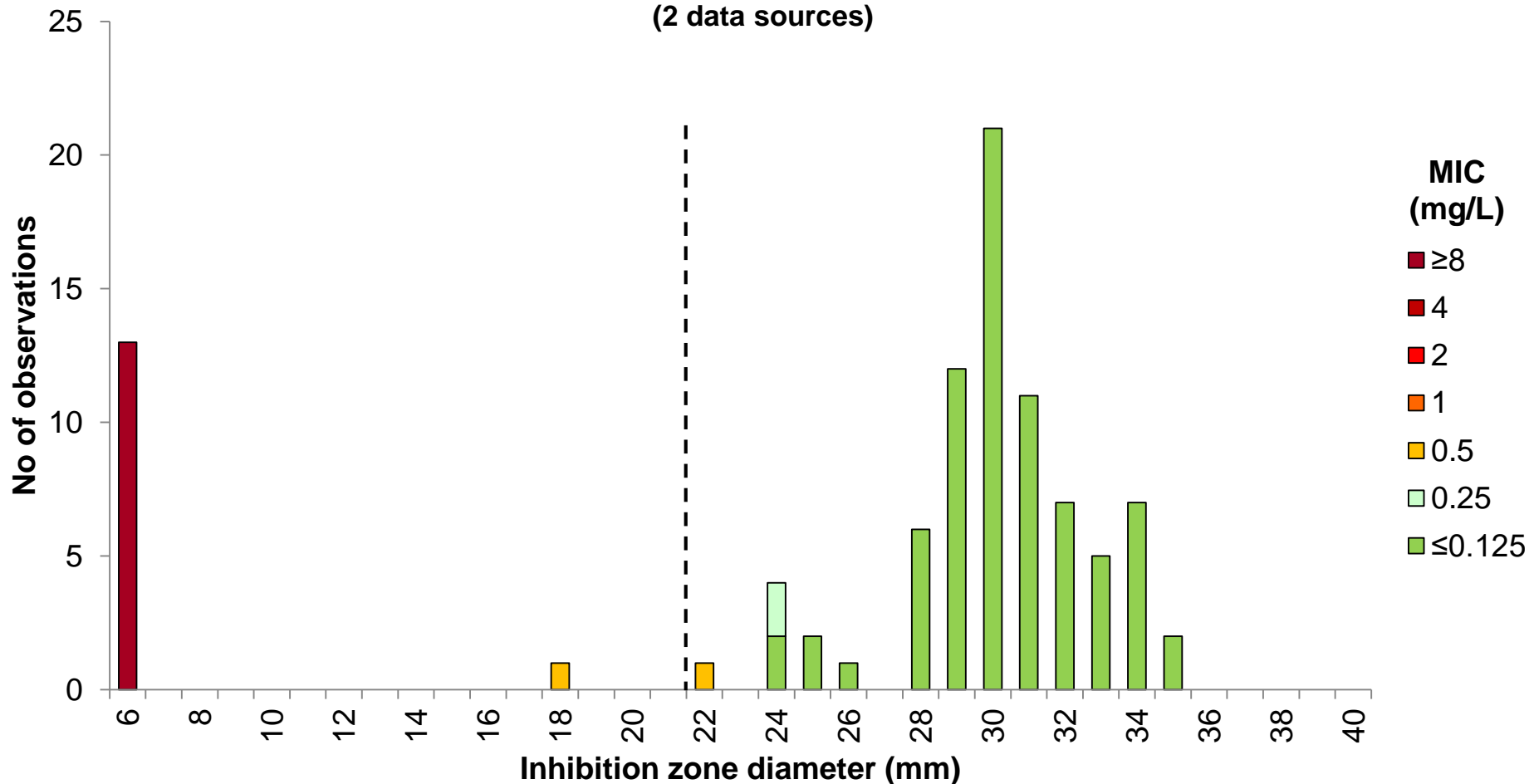
S ≤ 1, R > 1 mg/L

Erythromycin zone diameter

S ≥ 21, R < 21 mm

Clindamycin 2 µg vs. MIC CoNS, 93 isolates

(2 data sources)



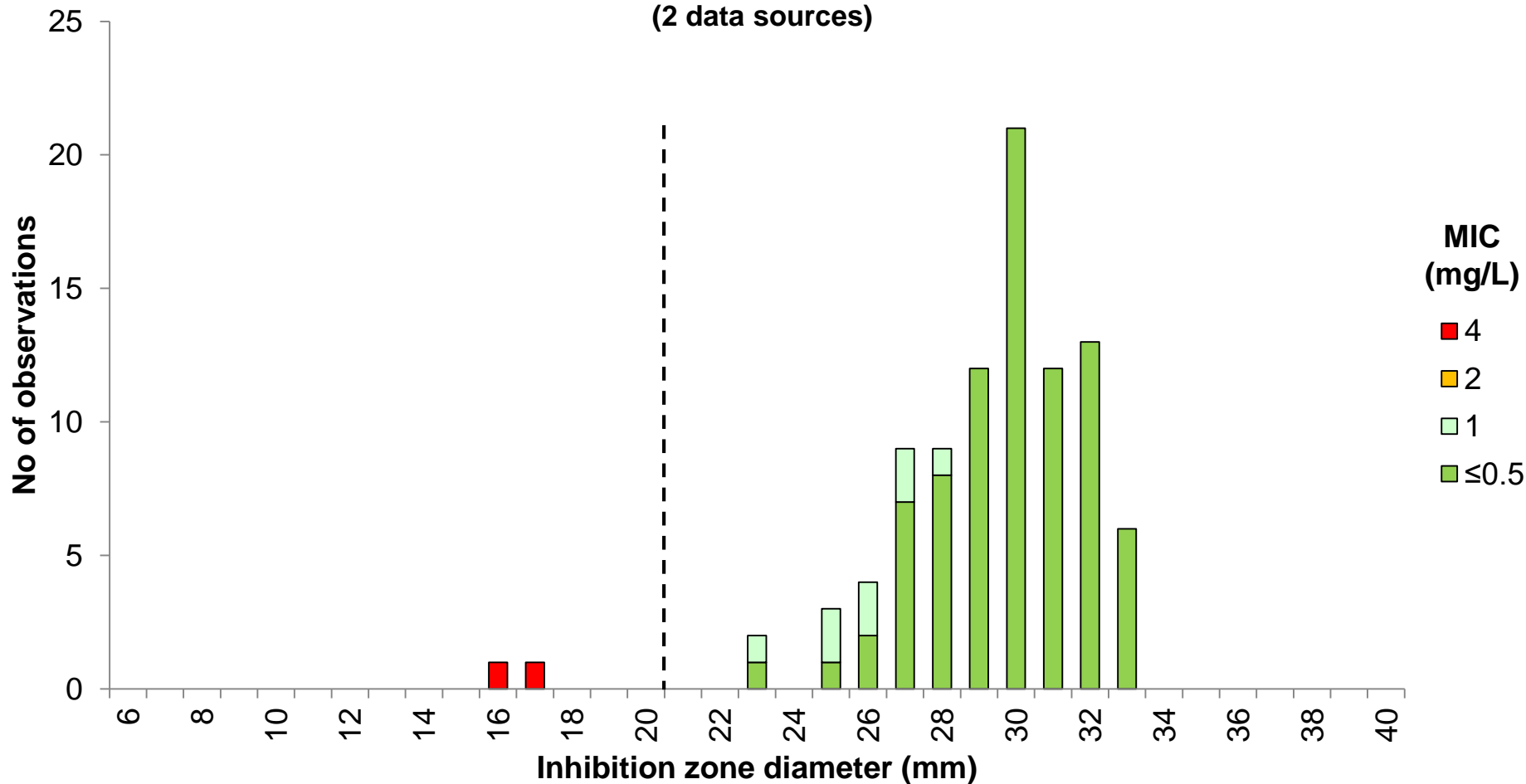
Breakpoints

MIC S ≤ 0.25, R > 0.25 mg/L

Zone diameter S ≥ 22, R < 22 mm

Quinupristin-dalfopristin 15 µg vs. MIC CoNS, 93 isolates

(2 data sources)



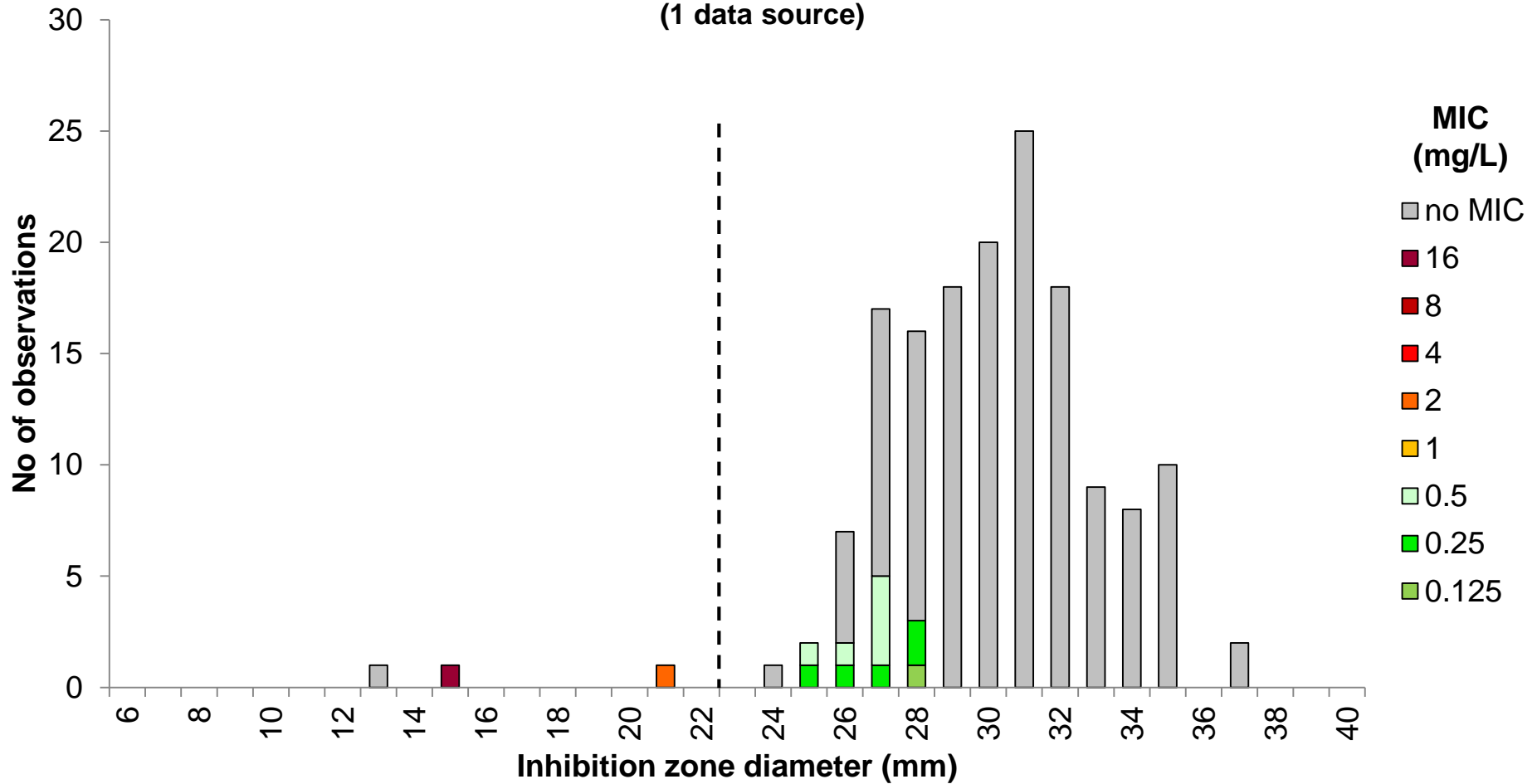
Breakpoints

MIC $S \leq 1, R > 1$ mg/L

Zone diameter $S \geq 21, R < 21$ mm

Minocycline 30 µg vs. MIC CoNS, 156 isolates

(1 data source)



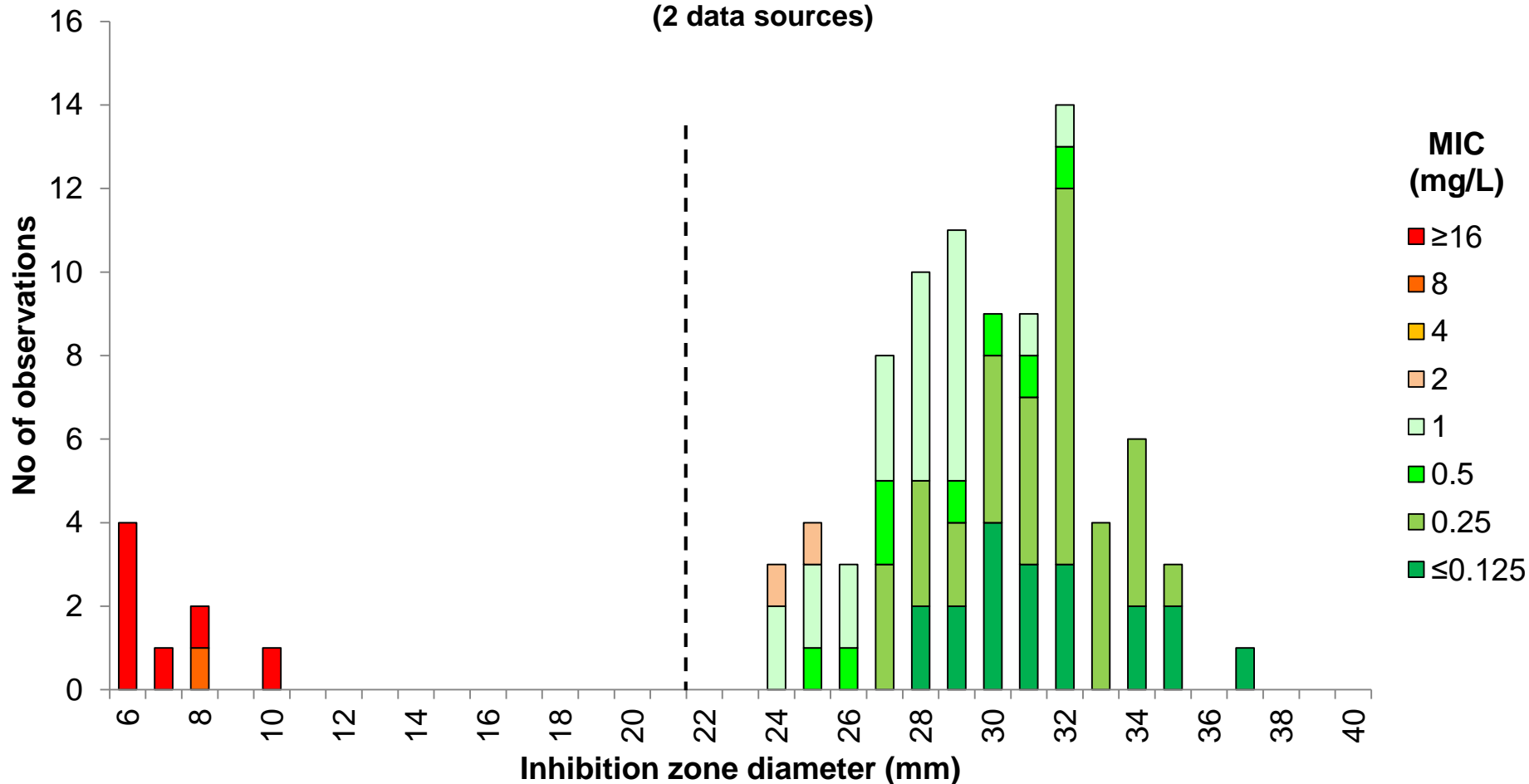
Breakpoints

MIC $S \leq 0.5$, $R > 0.5$ mg/L

Zone diameter $S \geq 23$, $R < 23$ mm

Tetracycline 30 µg vs. MIC CoNS, 93 isolates

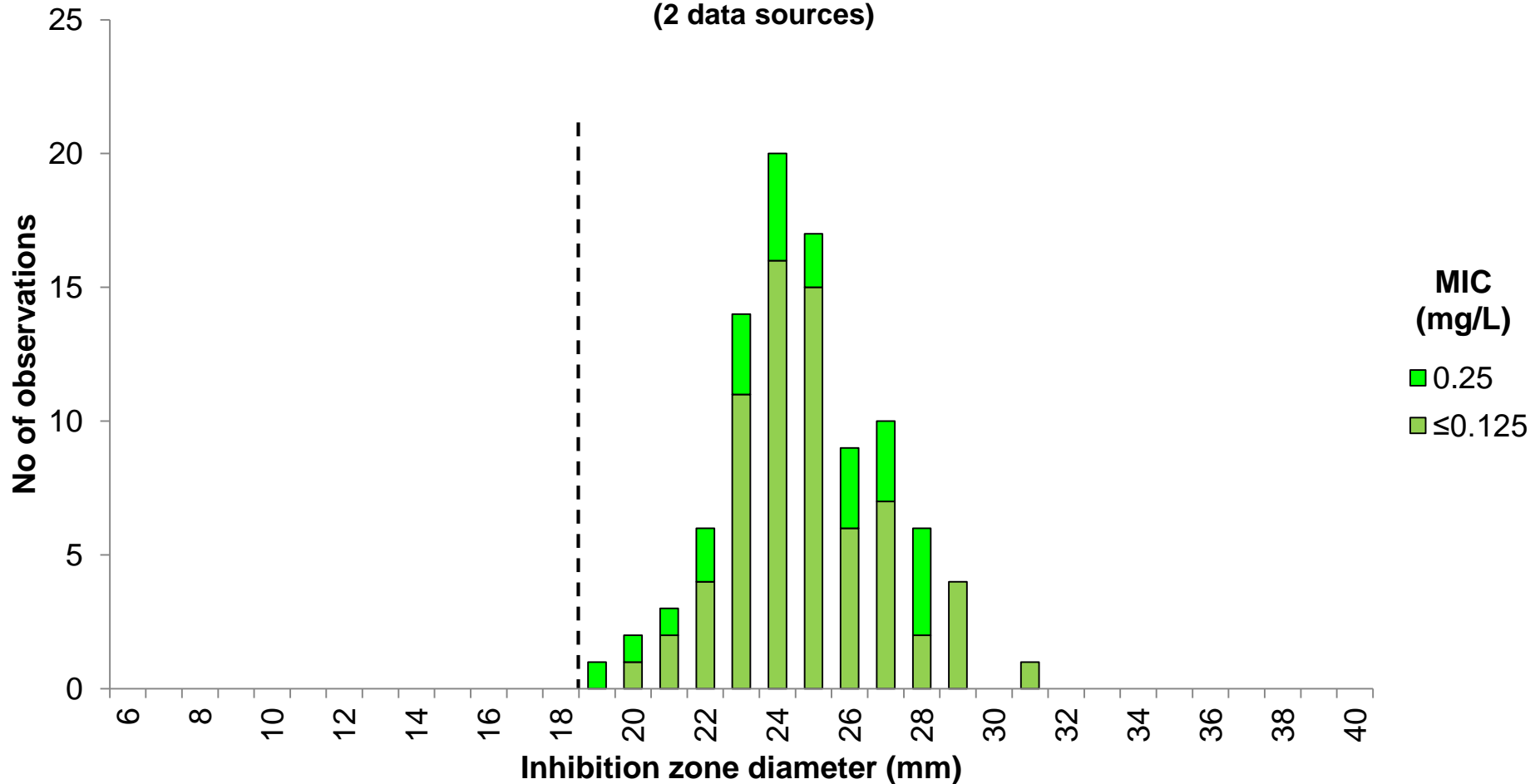
(2 data sources)



Breakpoints	
MIC	S ≤ 1 , R > 1 mg/L
Zone diameter	S ≥ 22 , R < 22 mm

Tigecycline 15 µg vs. MIC CoNS, 93 isolates

(2 data sources)



Breakpoints

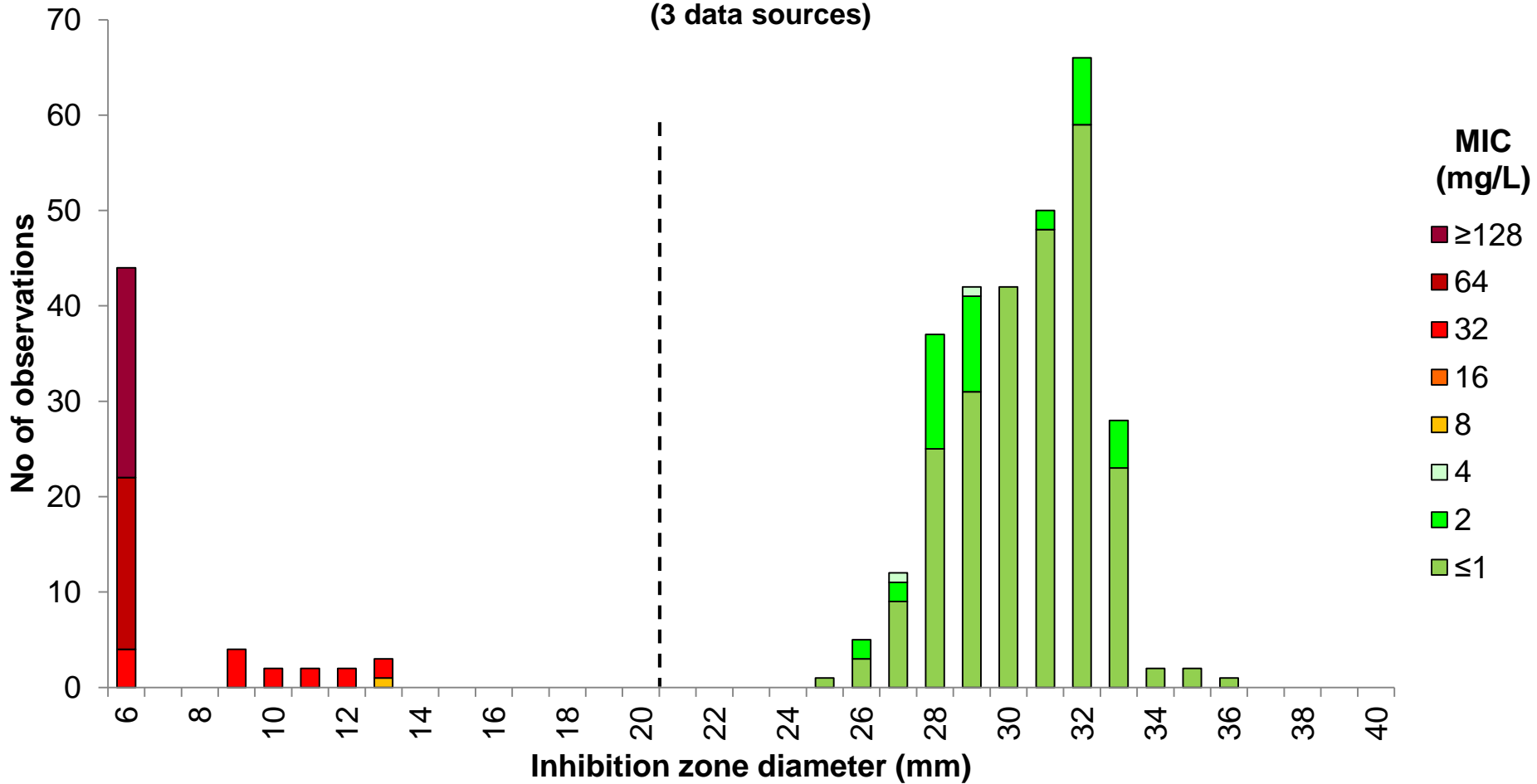
MIC S ≤ 0.5, R > 0.5 mg/L

Zone diameter S ≥ 19, R < 19 mm

Linezolid 10 µg vs. MIC

CoNS, 131 isolates (345 correlates)

(3 data sources)



Breakpoints

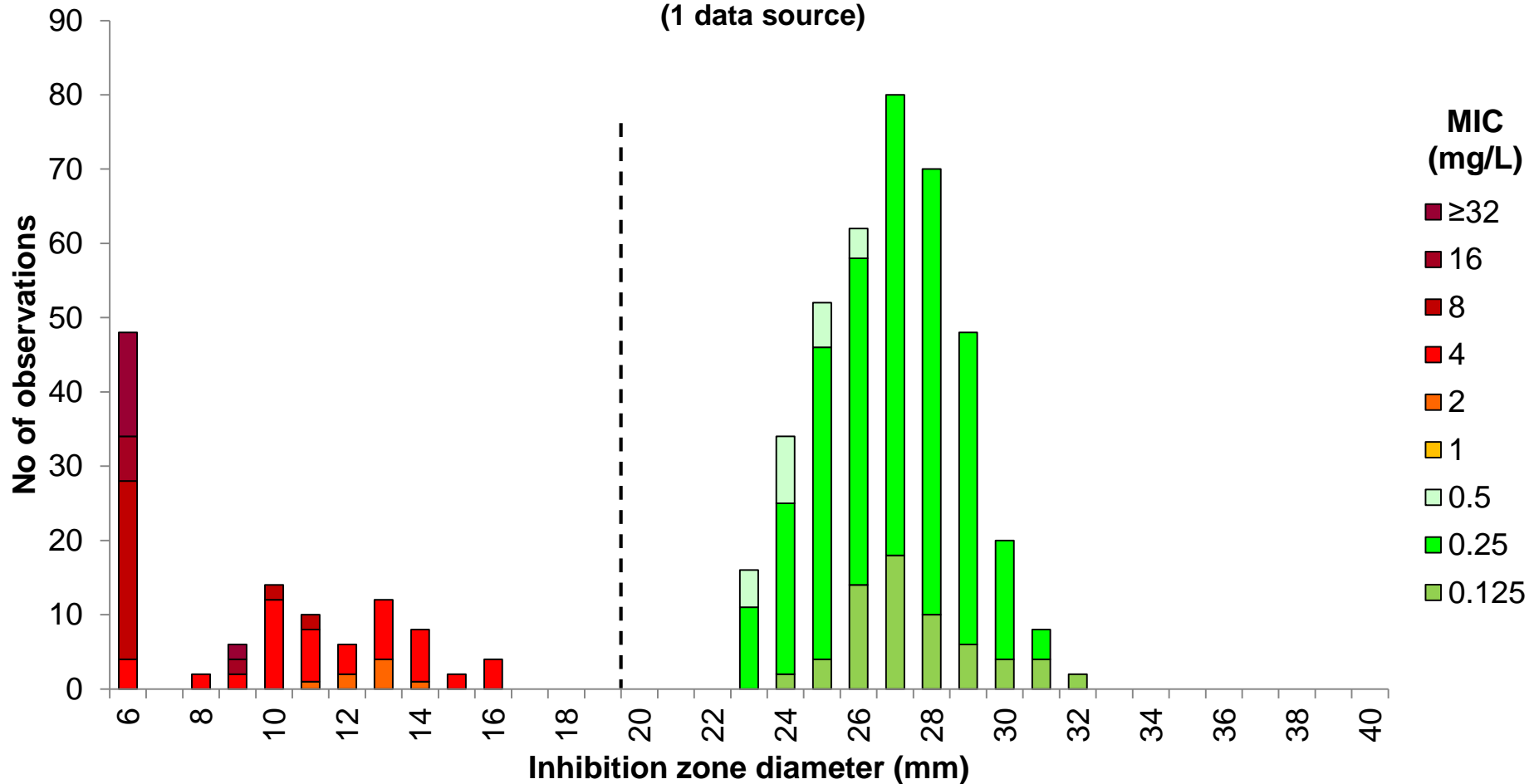
MIC S ≤ 4 , R > 4 mg/L

Zone diameter S ≥ 21 , R < 21 mm

Tedizolid 2 μg vs. MIC

CoNS, 63 isolates (504 correlates)

(1 data source)



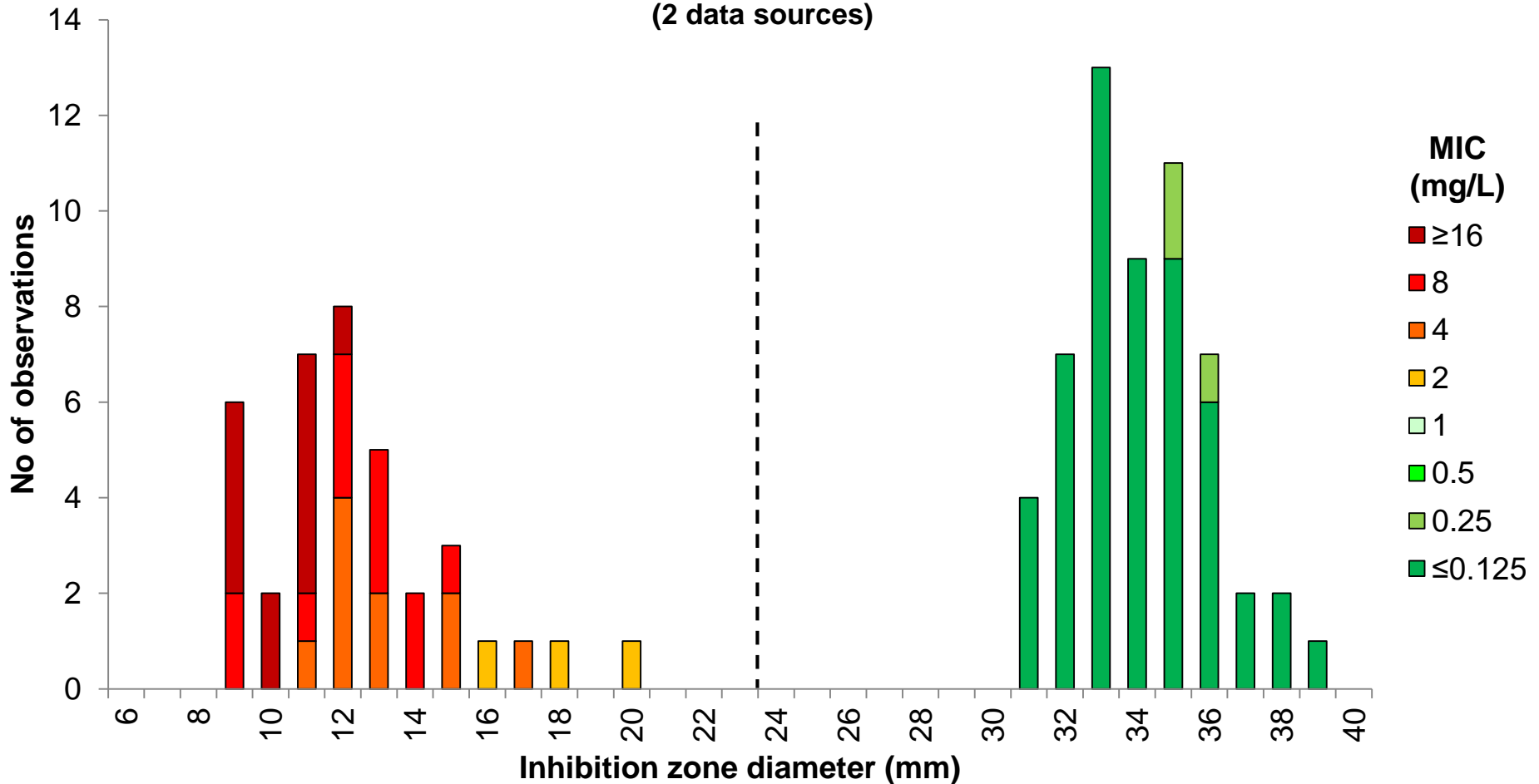
Breakpoints

MIC $S \leq 0.5, R > 0.5$ mg/L

Zone diameter $S \geq 20, R < 20$ mm

Fusidic acid 10 µg vs. MIC CoNS, 93 isolates

(2 data sources)



Breakpoints

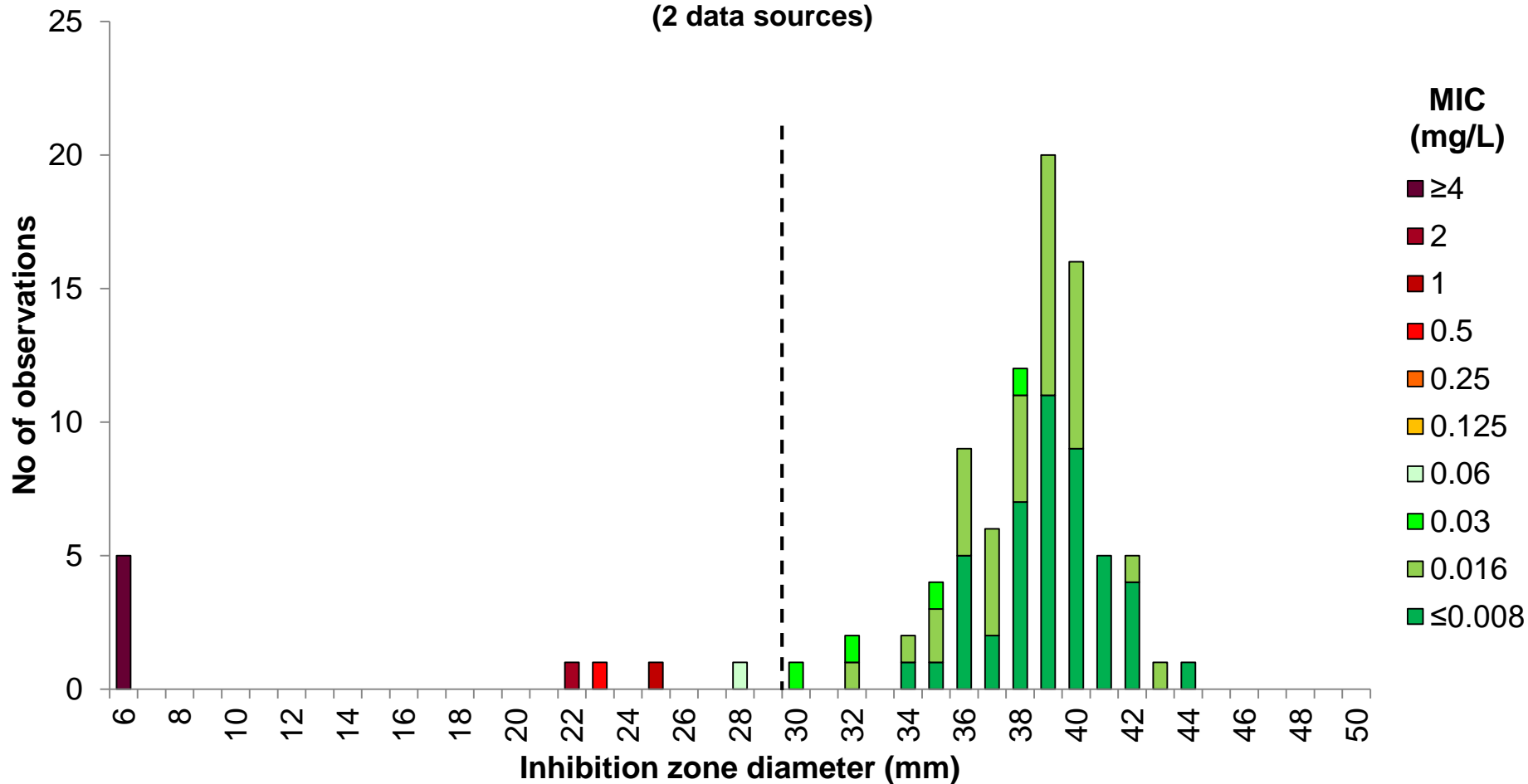
MIC S ≤ 1, R > 1 mg/L

Zone diameter S ≥ 24, R < 24 mm

Rifampicin 5 µg vs. MIC

CoNS, 93 isolates

(2 data sources)



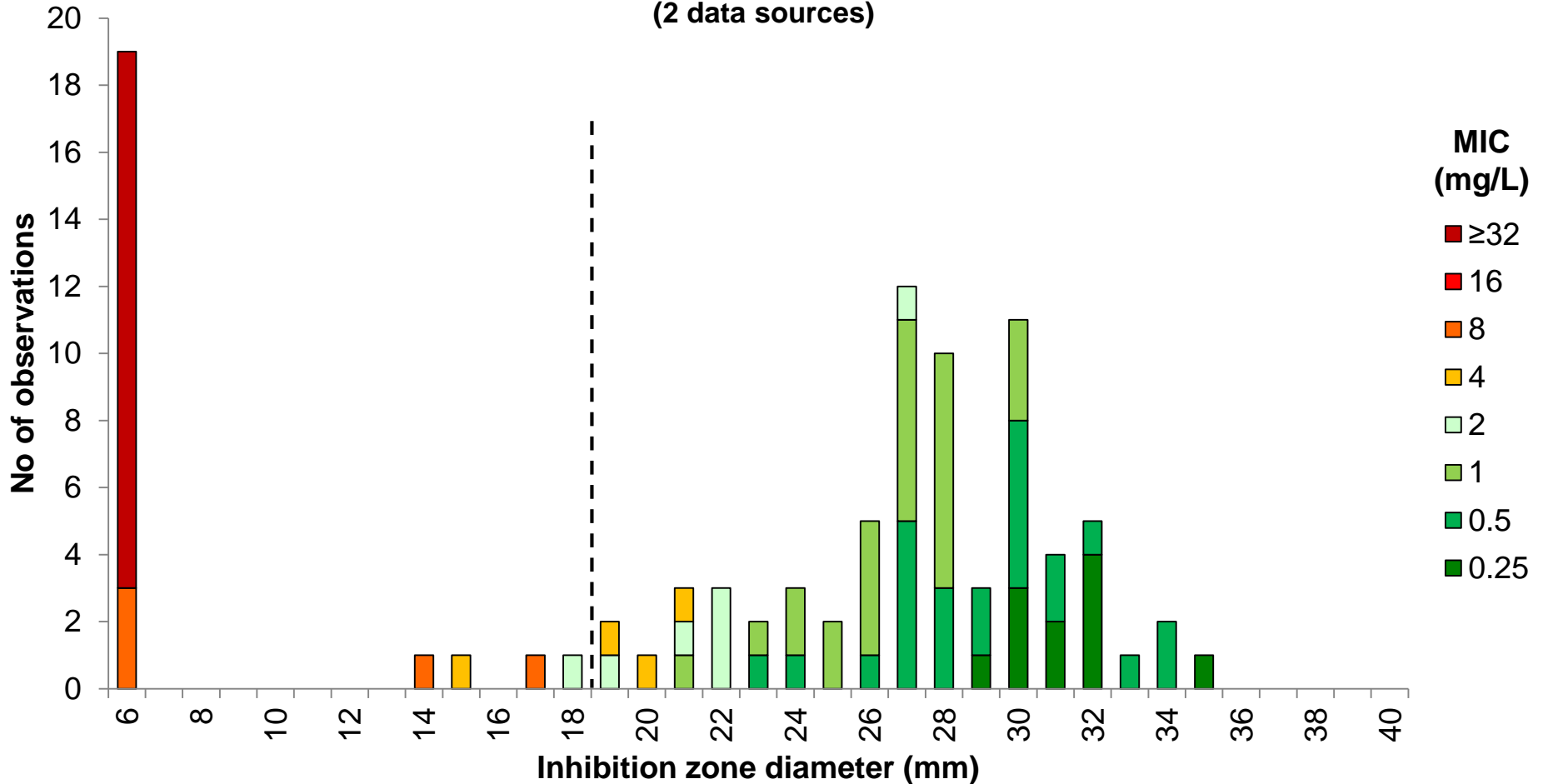
Breakpoints

MIC $S \leq 0.06$, $R > 0.06$ mg/L

Zone diameter $S \geq 30$, $R < 30$ mm

Trimethoprim 5 µg vs. MIC CoNS, 93 isolates

(2 data sources)



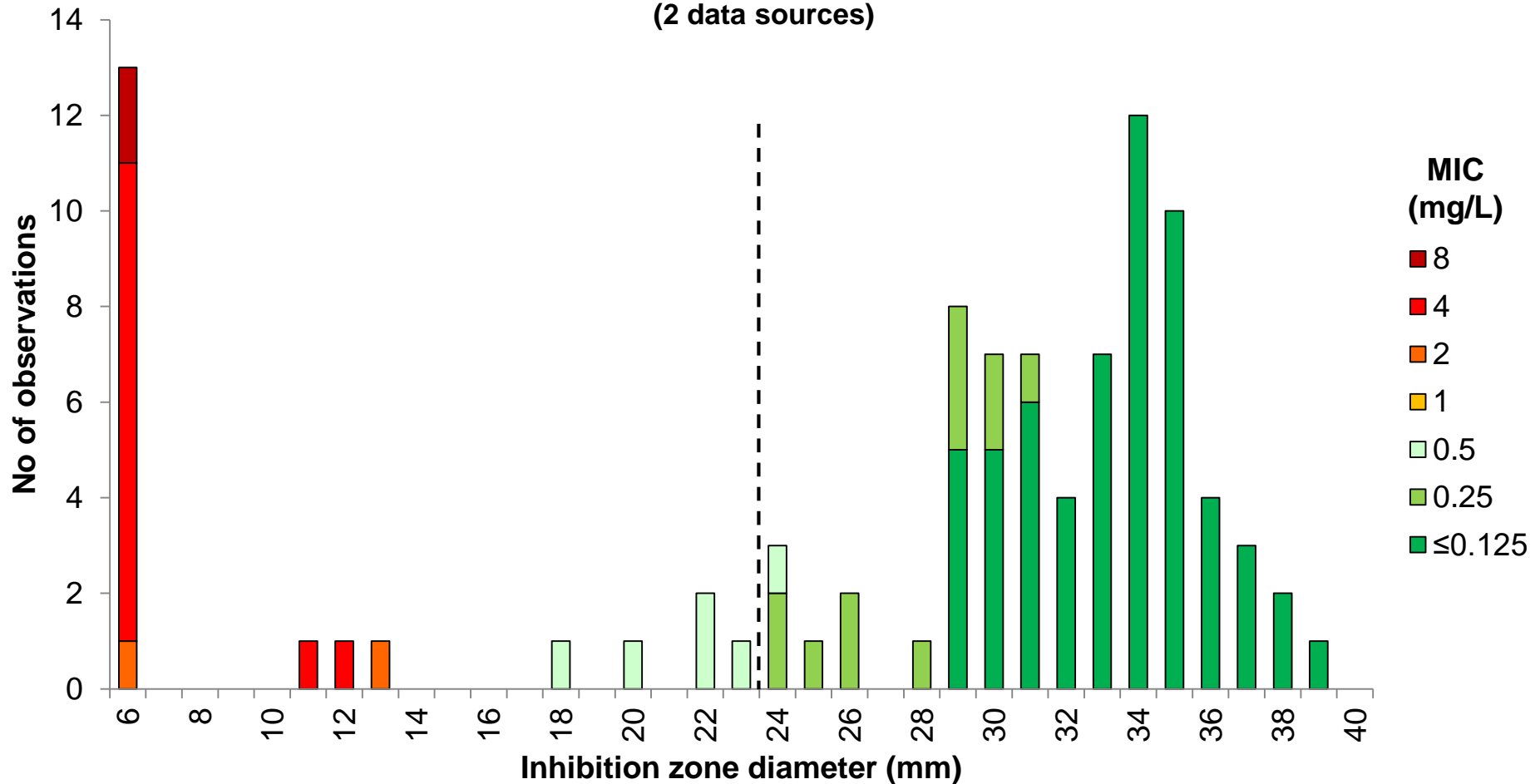
Breakpoints

MIC $S \leq 2, R > 2$ mg/L

Zone diameter $S \geq 19, R < 19$ mm

Trimethoprim-sulfamethoxazole 1.25-23.75 µg vs. MIC CoNS, 93 isolates

(2 data sources)



Breakpoints

MIC $S \leq 0.5$, $R > 0.5$ mg/L

Zone diameter $S \geq 24$, $R < 24$ mm

Coagulase-negative staphylococci

Cefoxitin 30 µg as screen for
methicillin resistance

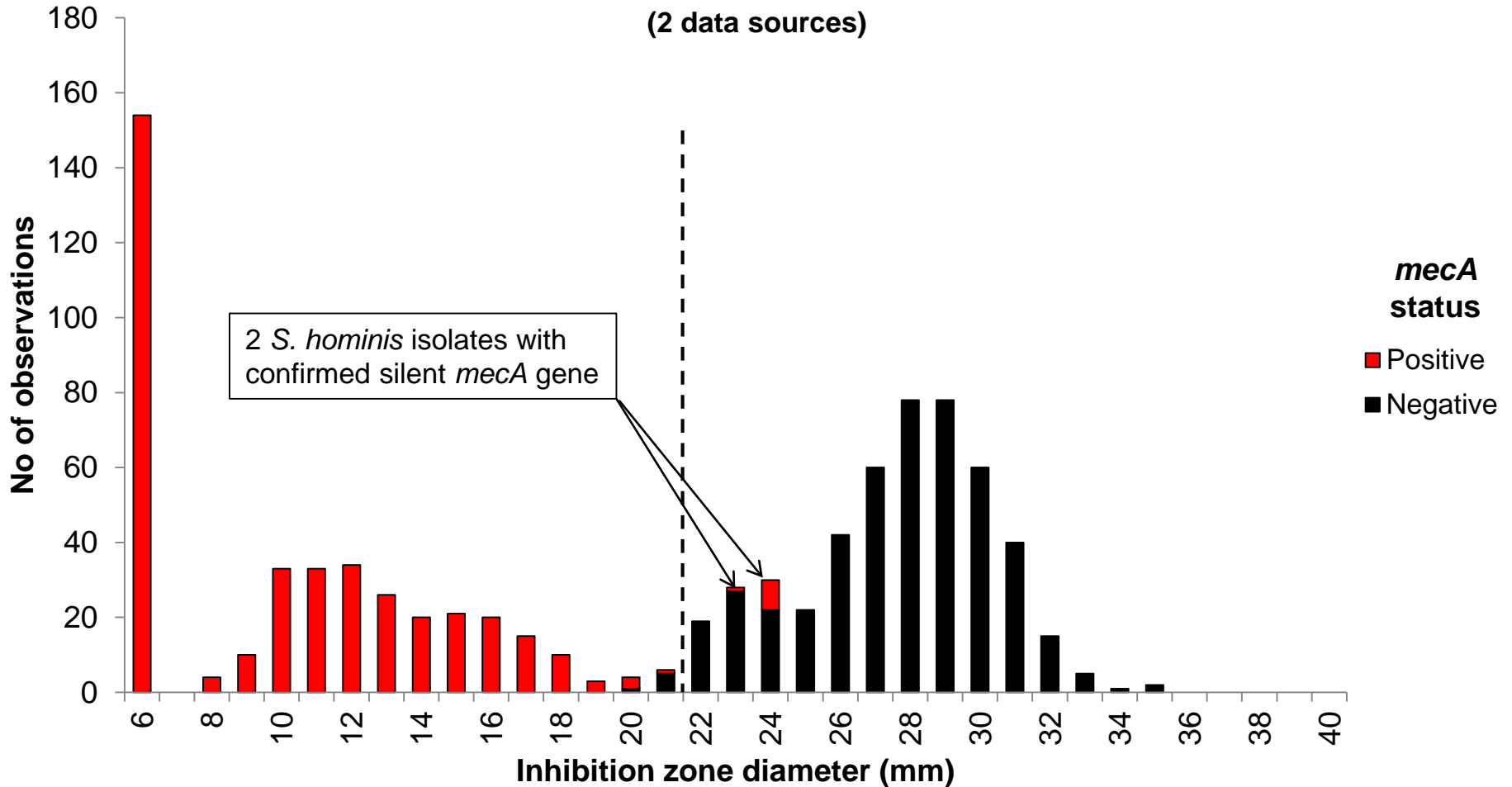
Coagulase-negative staphylococci

- Cefoxitin 30 μg can be used to screen for methicillin resistance in coagulase-negative staphylococci (CoNS).
- For CoNS other than *S. epidermidis* and *S. lugdunensis*, the cefoxitin screening breakpoint is $S \geq 22$ and $R < 22$ mm (same as for *S. aureus*).
- For *S. epidermidis* and *S. lugdunensis*, the cefoxitin screening breakpoint is $S \geq 27$ and $R < 27$ mm.
- If CoNS are not identified to species level, a screening breakpoint of $S \geq 25$ and $R < 25$ mm must be used.

Cefoxitin 30 µg vs. *mecA* status

CoNS (not *S. epid* and *S. lugd*), 276 isolates (873 correlates)

(2 data sources)

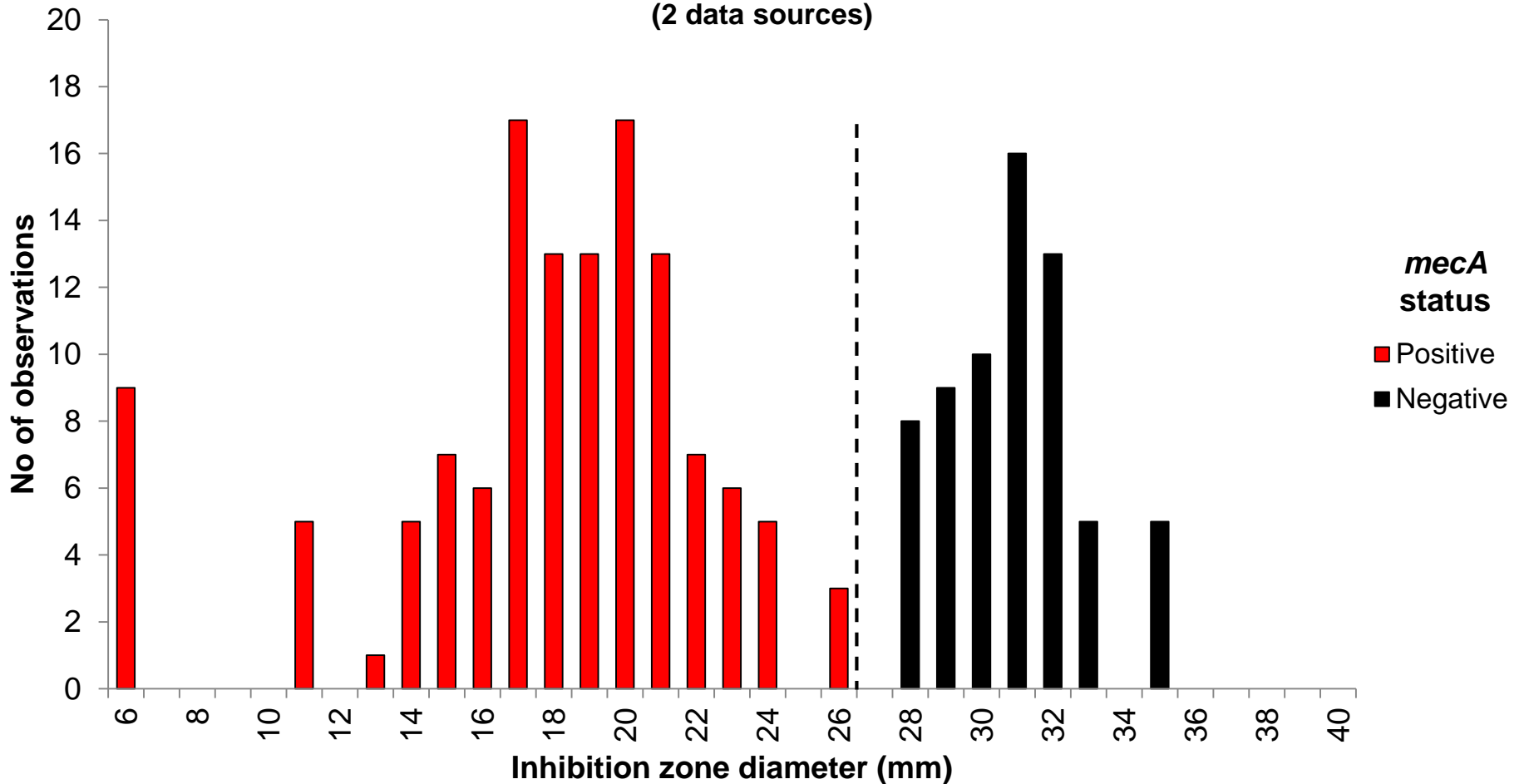


Breakpoints

Zone diameter (screen)

$S \geq 22$, $R < 22$ mm

Cefoxitin 30 μ g vs. *mecA* status
***S. epidermidis*, 100 isolates (193 correlates)**
(2 data sources)

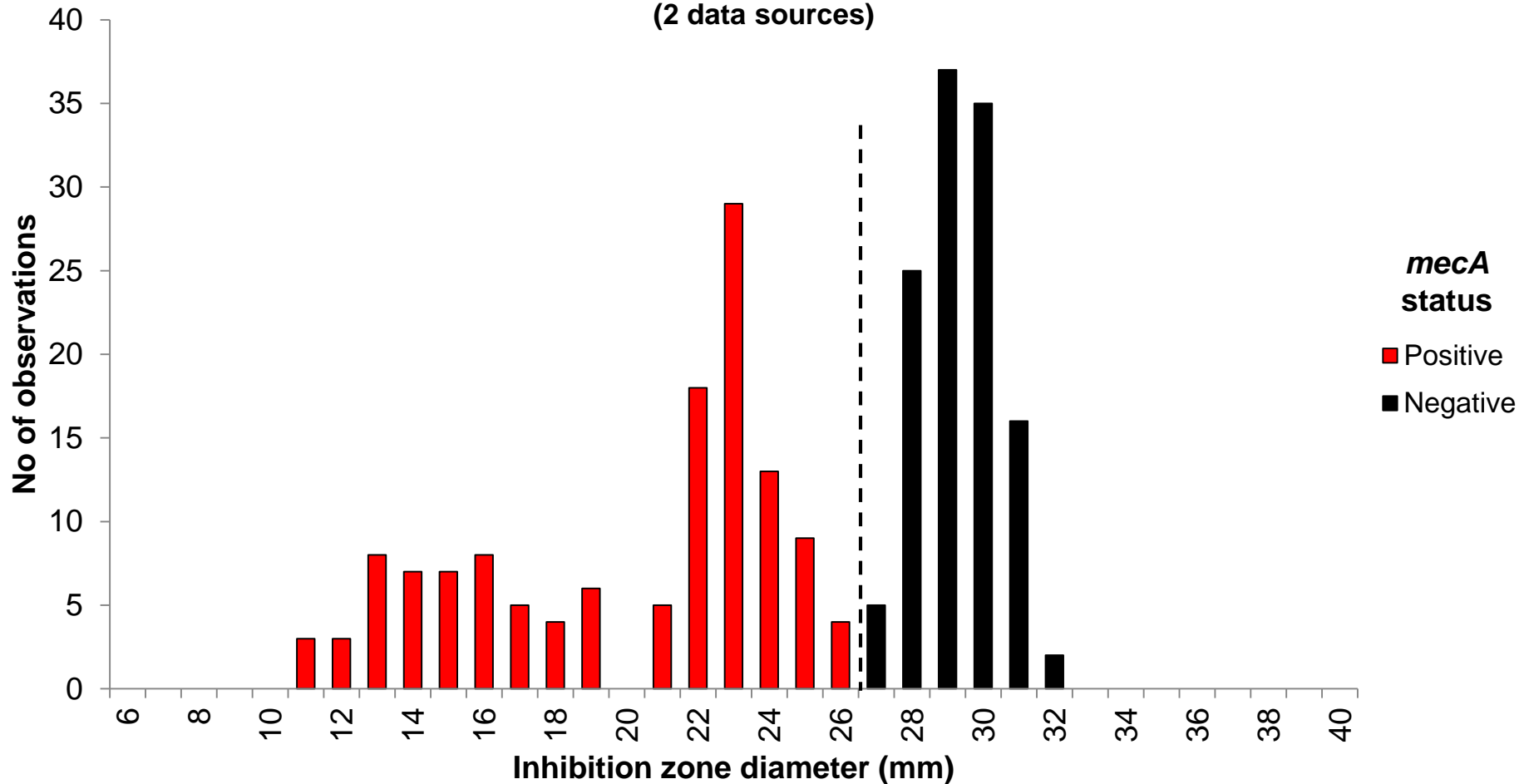


Breakpoints

Zone diameter (screen)

$S \geq 27$, $R < 27$ mm

Cefoxitin 30 μ g vs. *mecA* status
***S. lugdunensis*, 43 isolates (249 correlates)**
(2 data sources)

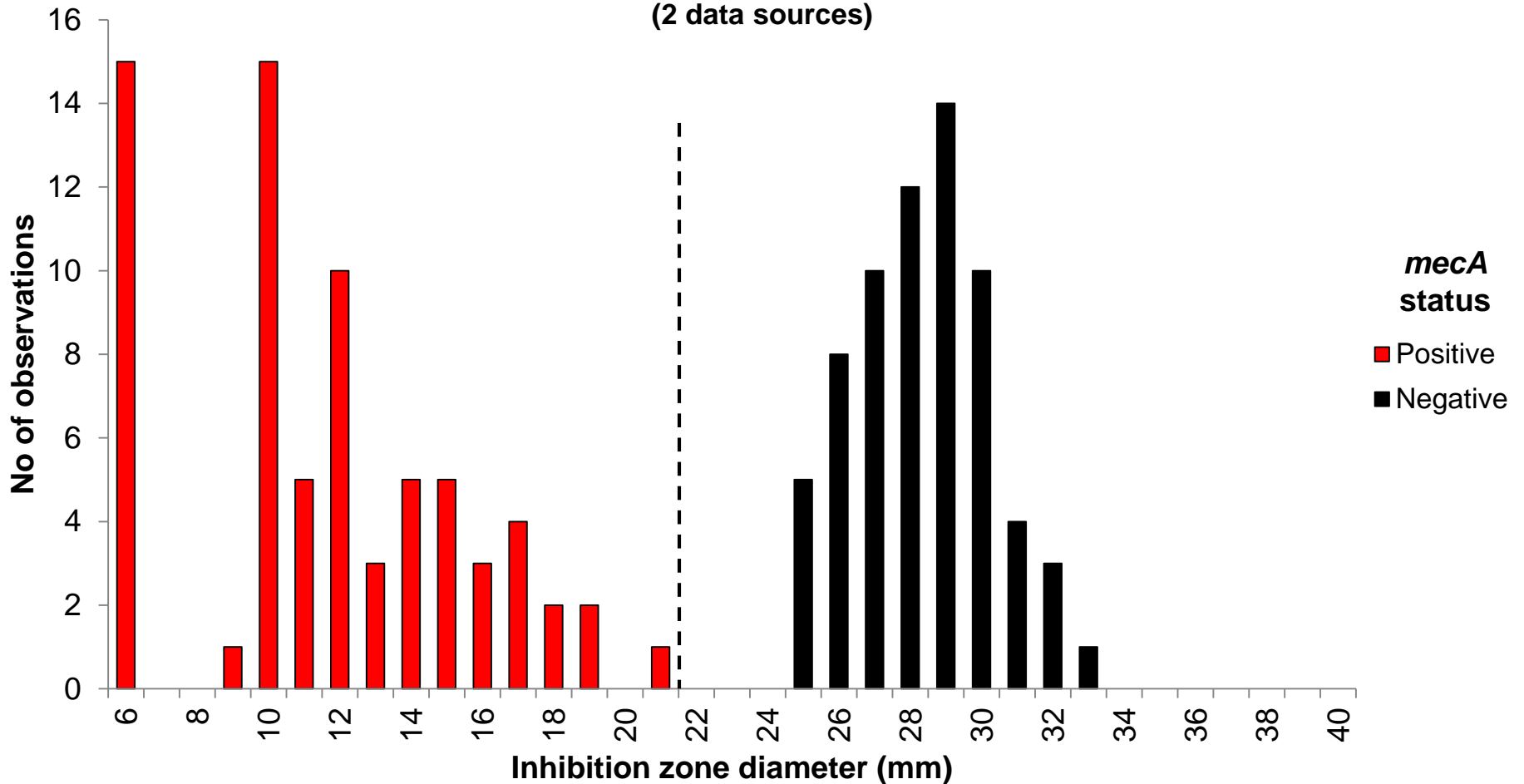


Breakpoints

Zone diameter (screen) $S \geq 27$, $R < 27$ mm

Cefoxitin 30 µg vs. *mecA* status *S. capitis*, 57 isolates (138 correlates)

(2 data sources)



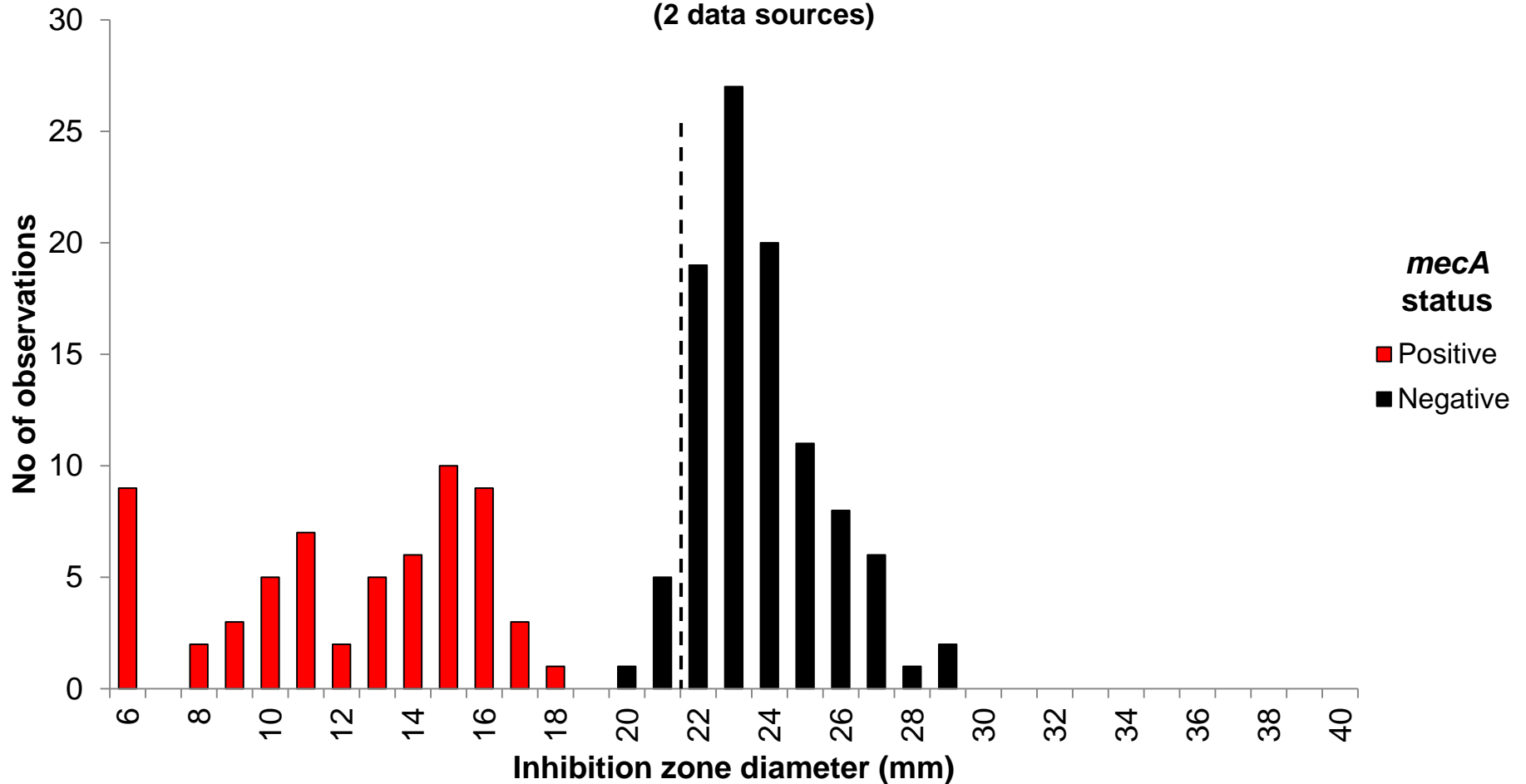
Breakpoints

Zone diameter (screen)

$S \geq 22$, $R < 22$ mm

Cefoxitin 30 μ g vs. *mecA* status *S. cohnii*, 45 isolates (162 correlates)

(2 data sources)



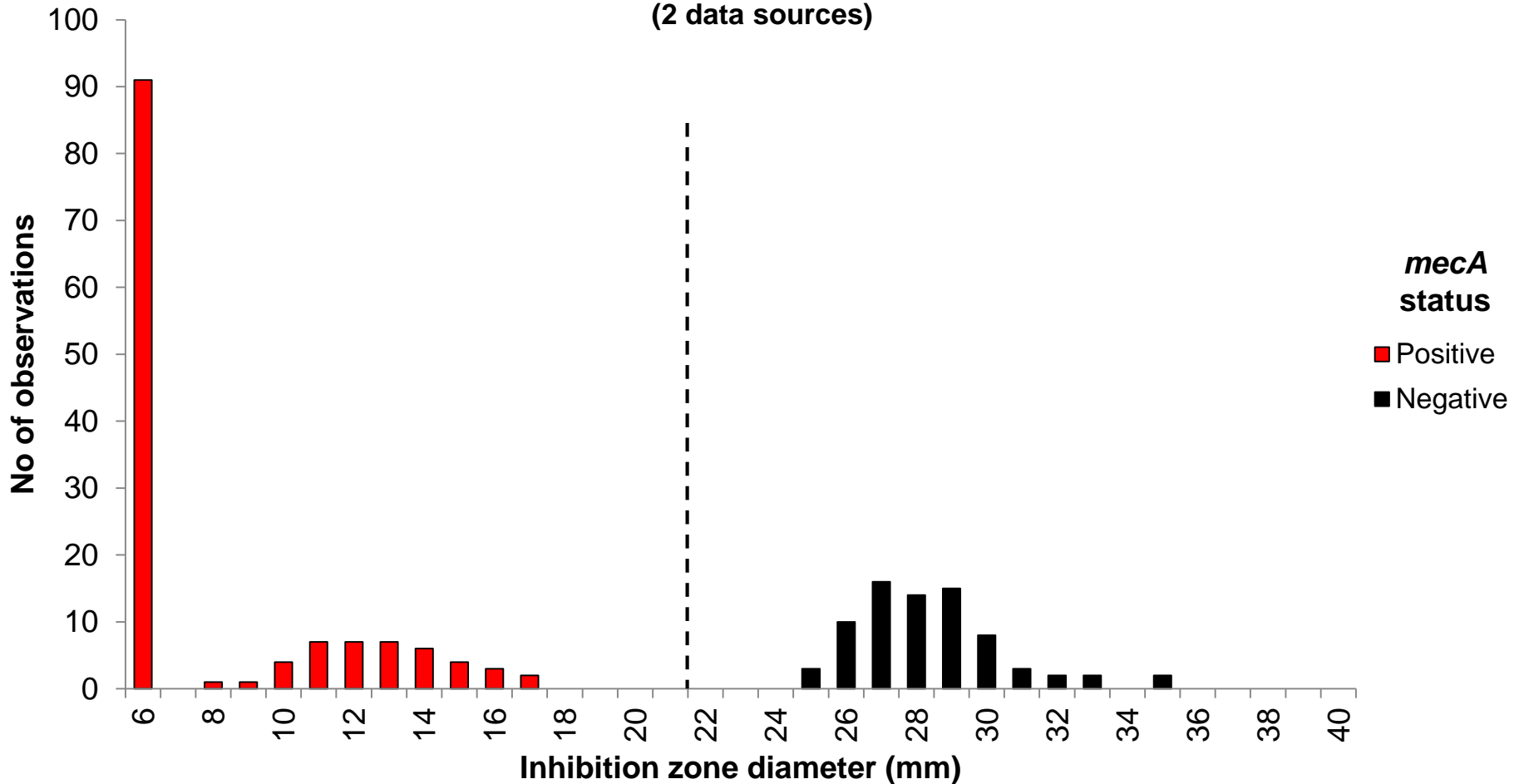
Breakpoints

Zone diameter (screen)

$S \geq 22$, $R < 22$ mm

Cefoxitin 30 µg vs. *mecA* status *S. haemolyticus*, 64 isolates (208 correlates)

(2 data sources)



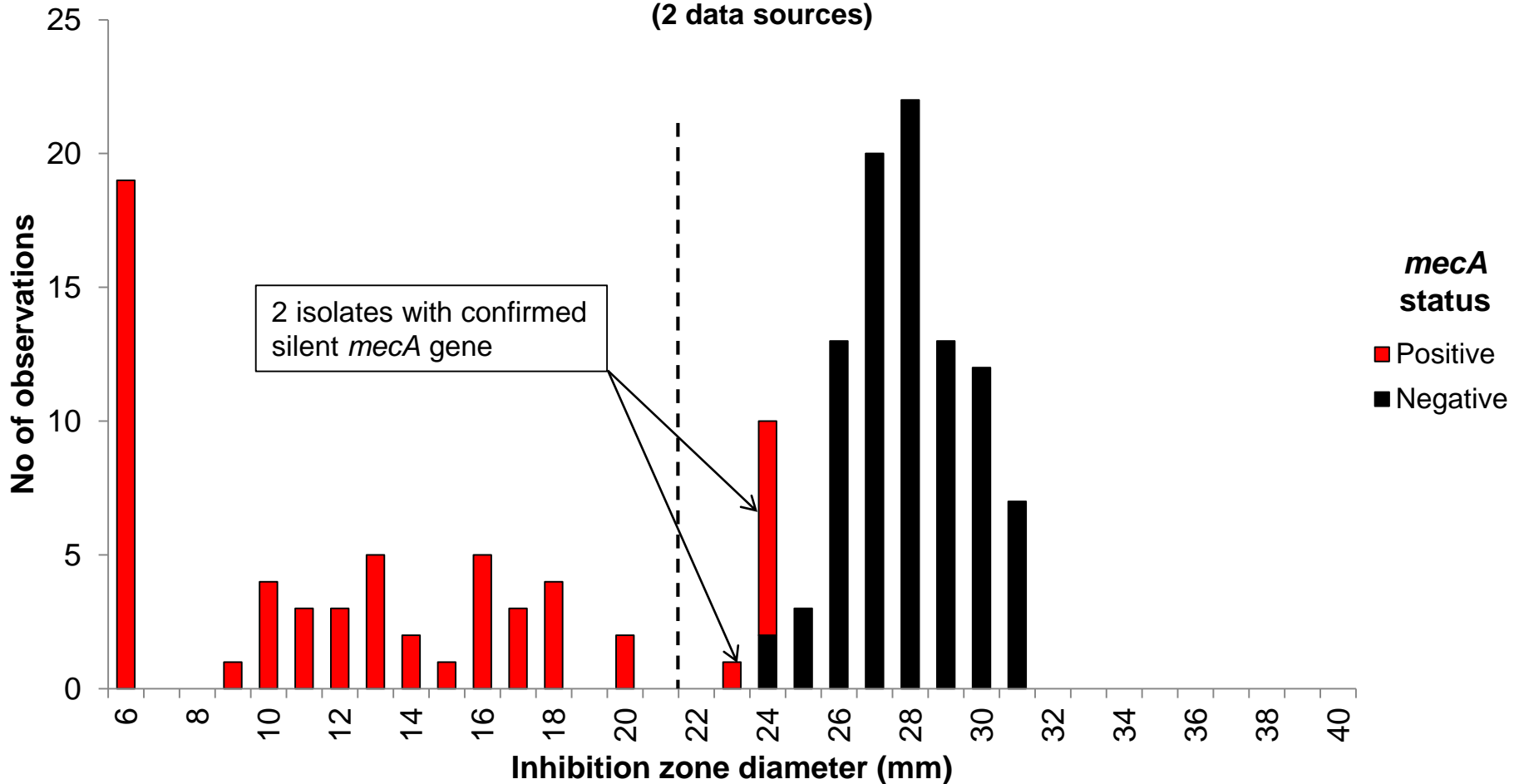
Breakpoints

Zone diameter (screen)

$S \geq 22$, $R < 22$ mm

Cefoxitin 30 µg vs. *mecA* status *S. hominis*, 54 isolates (153 correlates)

(2 data sources)



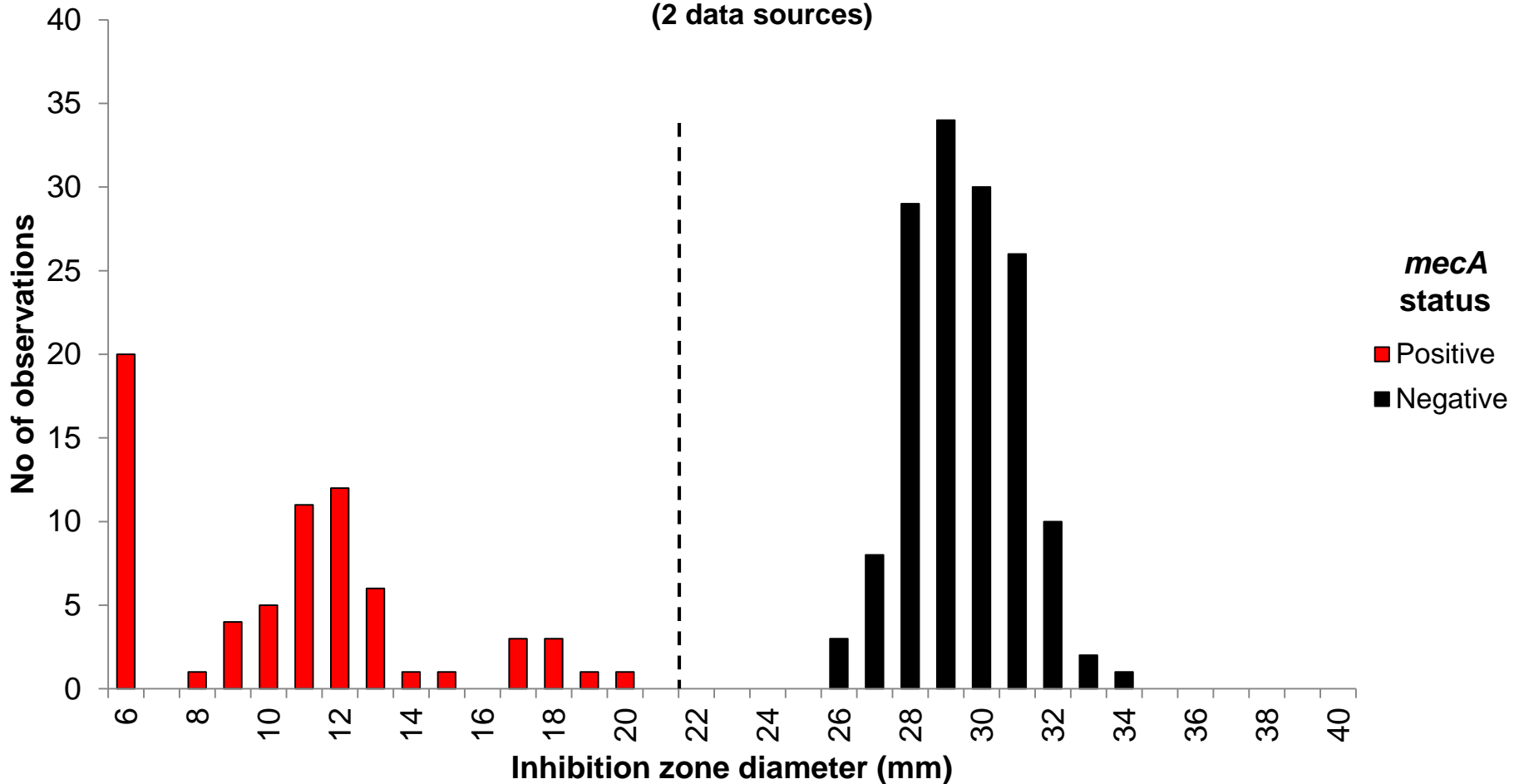
Breakpoints

Zone diameter (screen)

$S \geq 22$, $R < 22$ mm

Cefoxitin 30 μ g vs. *mecA* status *S. warneri*, 56 isolates (212 correlates)

(2 data sources)



Breakpoints

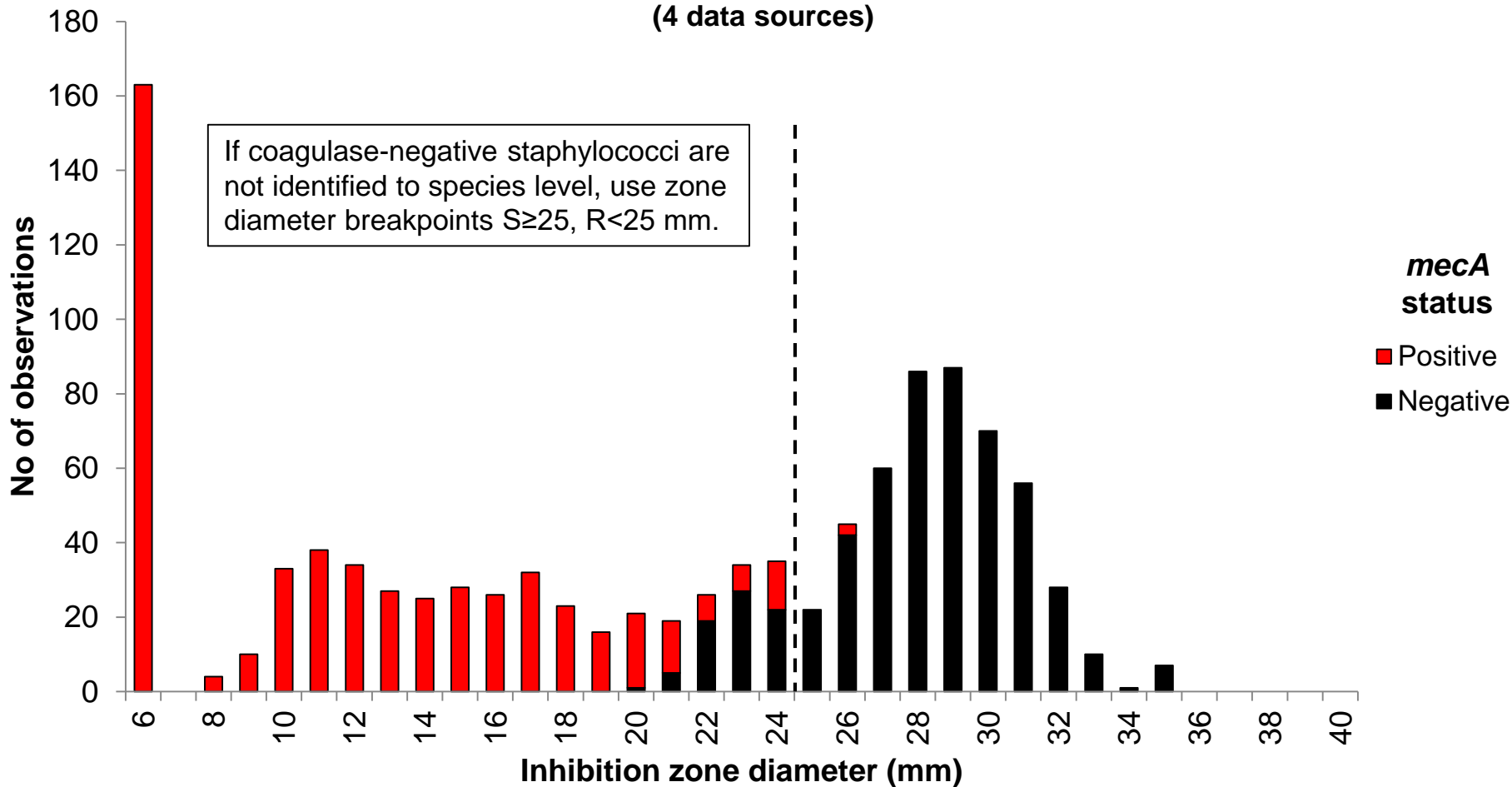
Zone diameter (screen)

$S \geq 22$, $R < 22$ mm

Cefoxitin 30 μ g vs. *mecA* status

CoNS (non-specified), 419 isolates (1315 correlates)

(4 data sources)



Breakpoints
 Zone diameter (screen) $S \geq 25$, $R < 25$ mm



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