

Cefiderocol Remains Active Against US Clinical Isolates of
Stenotrophomonas maltophilia Non-Susceptible to Comparator Agents:
Results from the SENTRY Antimicrobial Surveillance Program (2020–2024)

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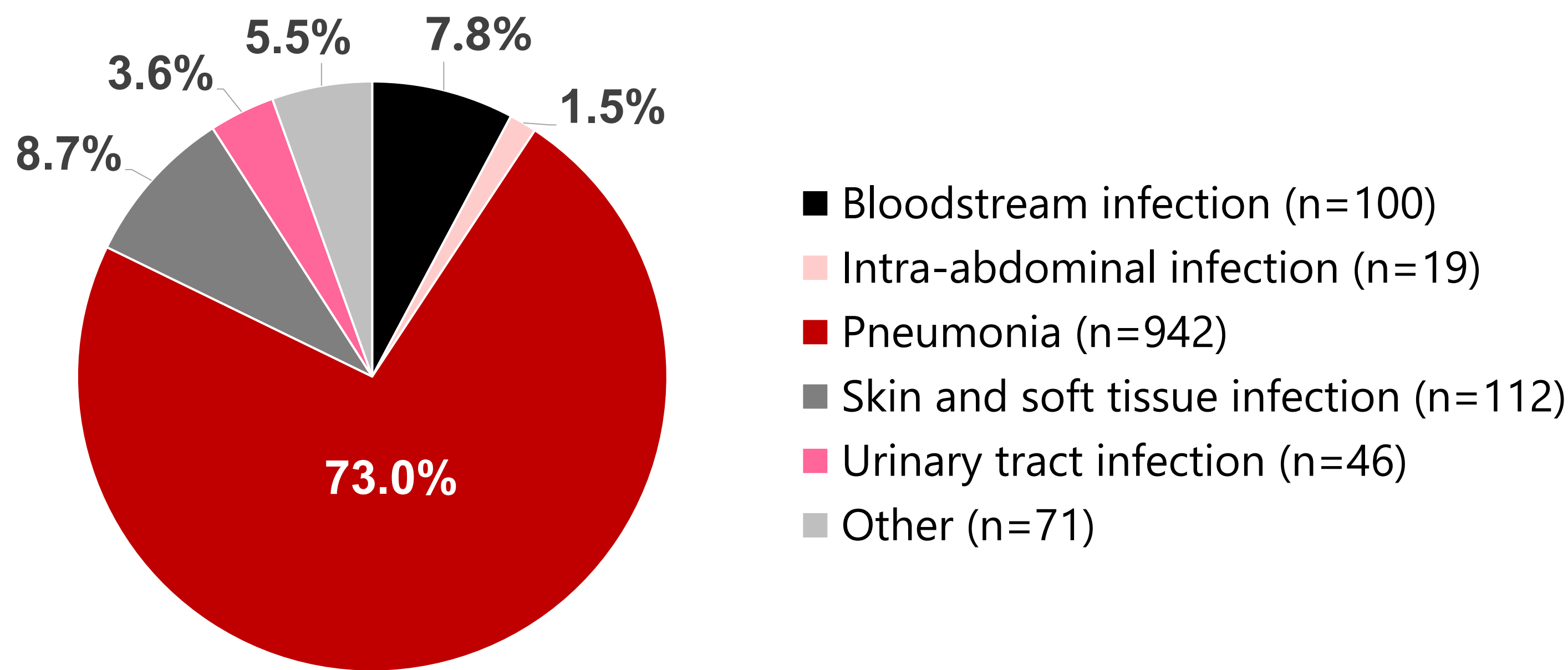
INTRODUCTION

- Stenotrophomonas maltophilia* is a non-fermenting, multidrug-resistant opportunistic pathogen, against which limited treatment options are available due to intrinsic resistance mechanisms, such as the production of the chromosomally encoded metallo- β -lactamase, L1, and the extended-spectrum β -lactamase, L2.
- The Infectious Diseases Society of America has listed cefiderocol, a siderophore-conjugated cephalosporin with broad activity against Gram-negative bacteria, as a preferred agent in combination therapy for *S. maltophilia* infections.
- In this analysis, the *in vitro* activities of cefiderocol and comparators were evaluated against *S. maltophilia* clinical isolates, including non-susceptible subsets, collected in the USA in 2020–2024 as part of the SENTRY Antimicrobial Surveillance Program.

METHODS

- A total of 1,290 *S. maltophilia* isolates were consecutively collected from US adult and pediatric patients between 2020 and 2024.
- Minimum inhibitory concentrations (MICs) were determined by using iron-depleted cation-adjusted Mueller–Hinton broth (ID-CAMHB) for cefiderocol and CAMHB for comparators.
- MIC₅₀, MIC₉₀, and MIC ranges were calculated.
- Susceptibility was determined using Clinical and Laboratory Standards Institute (CLSI) breakpoints (2025). Cefiderocol US Food and Drug Administration MIC susceptibility breakpoint for *S. maltophilia* is equivalent with CLSI MIC breakpoint.

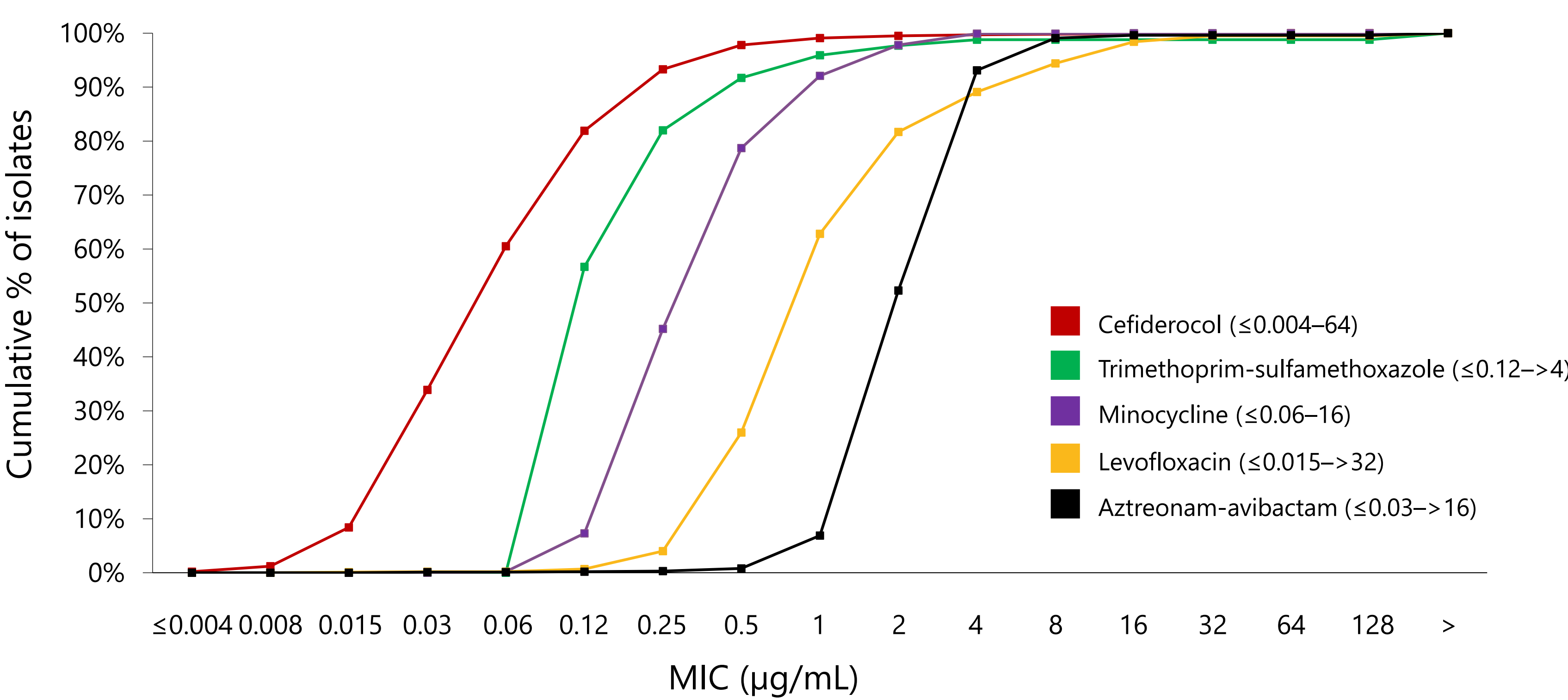
Figure 1. Distribution of infection types of *S. maltophilia* isolates collected from medical centers in the USA (N=1,290)



RESULTS

- The most common infection types from which isolates were collected included pneumonia (n=942; 73.0%), skin/soft tissue infection (n=112; 8.7%), and bloodstream infection (n=100; 7.8%) (Figure 1).
- Cefiderocol was the most potent agent tested, with MIC_{50/90} values of 0.06/0.25 μ g/mL and 99.1% of the isolates being susceptible (Table 1; Figure 2).
 - Susceptibilities to trimethoprim-sulfamethoxazole, levofloxacin, and minocycline were 97.7%, 81.8%, and 92.1%, respectively. MIC_{50/90} of aztreonam-avibactam was 2/4 μ g/mL (no CLSI or FDA breakpoint established).

Figure 2. Cumulative percentage distributions of cefiderocol and comparator MICs against *S. maltophilia* (N=1,290)



- Cefiderocol maintained high susceptibility ($\geq 96.7\%$) against isolates that were non-susceptible to trimethoprim-sulfamethoxazole, levofloxacin, and/or minocycline.
 - All 12 *S. maltophilia* isolates non-susceptible to trimethoprim/sulfamethoxazole, levofloxacin, and minocycline remained susceptible to cefiderocol (Table 1).
 - 89 *S. maltophilia* isolates had an MIC of ≥ 8 μ g/mL to aztreonam/avibactam. Among these isolates, cefiderocol maintained 100% susceptibility, whereas susceptibilities to trimethoprim-sulfamethoxazole, levofloxacin, and minocycline were 95.5%, 73.0%, and 89.9%, respectively (Table 1).

CONCLUSIONS

- Cefiderocol showed potent *in vitro* activity against *S. maltophilia* collected in the USA in 2020–2024, including against isolates non-susceptible to comparator antibiotics.
- These results suggest that cefiderocol is an important therapeutic option for infections caused by *S. maltophilia*.

Table 1. *In vitro* activity of cefiderocol and comparator agents against US isolates of *S. maltophilia* (2020–2024)

Phenotype/ Antimicrobial agent	MIC (µg/mL)			% Susceptibility (CLSI 2025) ^a
	MIC ₅₀	MIC ₉₀	MIC range	
<i>S. maltophilia</i> (N=1,290)				
Cefiderocol	0.06	0.25	≤0.004 to 64	99.1
Trimethoprim/sulfamethoxazole	≤0.12/2.28	0.5/9.5	≤0.12 to >4	97.7
Levofloxacin	1	8	≤0.015 to >32	81.8
Minocycline	0.5	1	≤0.06 to 16	92.1
Aztreonam/avibactam ^b	2	4	≤0.03 to >16	NA
Levofloxacin-NS (n=235)				
Cefiderocol	0.06	0.25	0.008 to 4	99.6
Trimethoprim/sulfamethoxazole	0.25/4.75	2/38	≤0.12 to >4	90.6
Minocycline	1	4	0.12 to 16	63.0
Aztreonam/avibactam ^b	2	4	0.25 to >16	NA
Minocycline-NS (n=102)				
Cefiderocol	0.06	0.25	0.008 to 1	100
Trimethoprim/sulfamethoxazole	0.25/4.75	4/76	≤0.12 to >4	88.2
Levofloxacin	8	32	0.06 to >32	14.7
Aztreonam/avibactam ^b	2	4	0.12 to >16	NA
Trimethoprim-sulfamethoxazole-NS (n=30)				
Cefiderocol	0.06	0.25	0.03 to 2	96.7
Levofloxacin	16	32	0.5 to >32	26.7
Minocycline	1	4	0.12 to 16	60.0
Aztreonam/avibactam ^b	2	8	1 to >16	NA
Levofloxacin, minocycline, and trimethoprim-sulfamethoxazole-NS (n=12)				
Cefiderocol	0.06	1	0.03 to 1	100
Aztreonam/avibactam ^b	2	>16	1 to >16	NA
Aztreonam-avibactam^b MIC ≥8 µg/mL (n=89)				
Cefiderocol	0.12	0.5	0.015 to 1	100
Levofloxacin	2	16	0.25 to >32	73.0
Trimethoprim/sulfamethoxazole	0.25/4.75	1/19	≤0.12 to >4	95.5
Minocycline	0.5	2	0.12 to 16	89.9

CLSI, Clinical and Laboratory Standards Institute; FDA, US Food and Drug Administration; MIC, minimum inhibitory concentration; NA, not applicable; NS, non-susceptible; S, susceptible. ^aBreakpoints as published by CLSI (2025): cefiderocol, S ≤ 1 μ g/mL (CLSI and FDA); levofloxacin, S ≤ 2 μ g/mL; trimethoprim-sulfamethoxazole, S $\leq 2/38$ μ g/mL; minocycline, S ≤ 1 μ g/mL. ^bAztreonam-avibactam was tested at a fixed concentration of 4 μ g/mL avibactam.
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