510(k) SUBSTANTIAL EQUIVALENCE DETERMINATION
DECISION SUMMARY
ASSAY ONLY

I Background Information:

A 510(k) Number

K193538

B Applicant

Thermo Fisher Scientific

C Proprietary and Established Names

Sensititre 18-24 hour MIC or Breakpoint Susceptibility System with Cefiderocol in the dilution range of 0.03-64 µg/mL

D Regulatory Information

Product Code(s)	Classification	Regulation Section	Panel
JWY, LRG, LTT	Class II	21 CFR 866.1640 - Antimicrobial Susceptibility Test Powder	MI - Microbiology

II Submission/Device Overview:

A Purpose for Submission:

To obtain a substantial equivalence determination for the addition of Cefiderocol at concentrations of 0.03 – 64 µg/mL to the Sensititre 18-24-hour MIC or Breakpoint Susceptibility System for testing Gram negative isolates

B Measurand:

Cefiderocol in the dilution range of 0.03 - 64 µg/mL

C Type of Test:

Quantitative Antimicrobial Susceptibility Test (AST), growth-based detection

Food and Drug Administration
10903 New Hampshire Avenue
Silver Spring, MD 20993-0002
www.fda.gov

III Intended Use/Indications for Use:

A Intended Use(s):

The Sensititre MIC and Breakpoint Susceptibility system is an *in vitro* diagnostic product for clinical susceptibility testing of non-fastidious gram negative isolates comprising of *Enterobacteriaceae*, *Pseudomonas aeruginosa* and other non-*Enterobacteriaceae* and of non-fastidious gram positive isolates, comprising of *Staphylococcus* spp., *Enterococcus* spp., and Beta-hemolytic *Streptococci* other than *S. pneumoniae*.

B Indication(s) for Use:

The Sensititre 18-24 hour MIC or Breakpoint Susceptibility System is an *in vitro* diagnostic product for clinical susceptibility testing of non fastidious isolates.

This 510(k) is for Cefiderocol in the dilution range of 0.03-64 µg/mL for testing non-fastidious Gram negative organisms on the Sensititre 18-24 hour MIC panel.

Cefiderocol has been shown to be active both clinically and *in vitro* against the following organisms according to the FDA drug label:

Gram-negative bacteria

Escherichia coli
Enterobacter cloacae complex
Klebsiella pneumoniae
Proteus mirabilis
Pseudomonas aeruginosa

C Special Conditions for Use Statement(s):

Rx - For Prescription Use Only

Studies of Cefiderocol with *Enterobacteriaceae* and *Pseudomonas aeruginosa* were performed using the AIM autoinoculator inoculation method and OptiRead and VIZION reading methods only. The use of alternative inoculation methods or alternative reading methods when testing Cefiderocol have not been evaluated.

The ability of the Sensititre system to detect resistance to Cefiderocol in the following species is unknown because resistant strains were not available at the time of comparative testing: *P. mirabilis* and *P. aeruginosa*. Isolates yielding cefiderocol MIC results suggestive of a resistant interpretative category should be submitted to a reference laboratory for further testing.

D Special Instrument Requirements:

Sensititre AIM for device inoculation
Sensititre VIZION or OptiRead for plate reading

IV Device/System Characteristics:

A Device Description:

Sensititre MIC Susceptibility MIC panels are multi-well microtiter plates, dosed with dried, stabilized antimicrobials. It is a miniaturized version of the classic broth dilution method and can provide both qualitative and quantitative susceptibility results. After inoculation, plates are sealed with an adhesive seal, incubated at 34 – 36 °C for 18 – 24 hours and examined for bacterial growth.

Antimicrobial susceptibility test results can be determined by reading growth using the digital device (VIZION) or automatically on an autoreader (OptiRead) using fluorescence.

B Principle of Operation:

The Sensititre 18-24 hour MIC or Breakpoint Susceptibility System includes multi-well plastic microtiter plates that contain doubled dilution of antibacterial agents. Each plate includes antimicrobial agents at appropriate dilutions. Results can be read by the digital device, VIZION, or by use of an automated reader (OptiRead).

The VIZION allows the panel image to be displayed on a touch screen directly from a video camera and allows the user to visually determine MIC results. The Sensititre OptiRead utilizes fluorescence technology to read the microbroth dilution plates after 18 to 24 hours incubation. The technology involves the detection of bacterial growth by monitoring the activity of specific surface enzymes produced by the test organism. Growth is determined by generating a fluorescent product from a fluorogenic substrate. The substrate is prepared by conjugating a fluorescent compound to the specific enzyme substrates with a bond which prevents fluorescence. The enzymatic action of the bacterial surface enzymes on the substrate cleaves the bond releasing fluorescence. The amount of fluorescence detected is directly related to bacterial growth. The MIC is determined by observing the lowest dilution of antimicrobial agent that inhibits growth of the organism. The substrate can be added to the inoculum broth which is dispensed into the test plate at the same time as the test organism, or, the plates can be prepared with the substrate already added to each micro-well.

V Substantial Equivalence Information:

A Predicate Device Name(s):
Sensititre 18-24 hour MIC or Breakpoint Susceptibility System with Omadacycline in the dilution range of 0.03-32 µg/ml

B Predicate 510(k) Number(s):
K183033

C Comparison with Predicate(s):

Table 1. Comparison with the Predicate Device

Device & Predicate Device(s):	**Device K193538**	**Predicate K183033**
Device Trade Name	Sensititre 18-24 hour MIC or Breakpoint Susceptibility System with Cefiderocol in the dilution range of 0.03-64 µg/ml	Sensititre 18-24 hour MIC or Breakpoint Susceptibility System with Omadacycline in the dilution range of

		0.03-32 µg/ml
General Device Characteristic Similarities		
Intended Use/Indications For Use	The Sensititre MIC and Breakpoint Susceptibility system is an *in vitro* diagnostic product for clinical susceptibility testing of non-fastidious Gram negative isolates, comprising of *Enterobacteriaceae, Pseudomonas aeruginosa*, and other non-*Enterobacteriaceae* and of non-fastidious gram positive isolates, comprising of *Staphylococcus* sp., *Enterococcus* sp., and Beta hemolytic *Streptococci* other than *S. pneumoniae.*	Same
Test Panel	96 well plate is dosed with selected antimicrobial agents and substrate for the fluorescent reads, then dried. The bacterial suspension in the appropriate broth is used to rehydrate the plate	Same
Test Organism	Non-fastidious Gram negative isolates	Same
Read Method	Results can be read using the following methods: 1) Automatically with the OptiRead (fluorescent substrate technology) 2) On the VIZION (digital viewing device)	Same
Incubation	18-24 hours	Same
General Device Characteristic Differences		
Antimicrobial Agent	Cefiderocol	Omadacycline
Antimicrobial Concentrations	0.03 – 64 µg/mL	0.03 – 32 µg/mL

VI Standards/Guidance Documents Referenced:

Guidance for Industry and FDA - Class II Special Controls Guidance Document: Antimicrobial Susceptibility Test (AST) Systems – August 28, 2009.

CLSI. *Performance Standards for Antimicrobial Susceptibility Testing*. 29th ed. CLSI supplement M100. Wayne, PA: Clinical and Laboratory Standards Institute; 2019.

CLSI. *Methods for Dilution Antimicrobial Susceptibility Tests for Bacteria that Grow Aerobically*. 11th ed. CLSI standard M07. Wayne, PA: Clinical and Laboratory Standards Institute; 2018.

VII Performance Characteristics (if/when applicable):

A Analytical Performance:

1. Precision/Reproducibility:

   A reproducibility study was performed at three sites using a panel comprised of 10 non-fastidious Gram negative organisms including one *P. aeruginosa* and nine strains of *Enterobacteriaceae:* (*K. pneumoniae* (three isolates), *E. cloacae* (two isolates), *E. coli* (four isolates). All isolates were tested in triplicate over three days with each read method (i.e., VIZION and OptiRead). The Sensititre Aim inoculator was used for plate inoculation. The mode MIC value was determined and the reproducibility was calculated based on MIC values falling within ±1 dilution of the mode MIC value. Reproducibility was 95% for best case scenario and 84.8% for worst case scenario for both read methods and was considered to be acceptable. The <95% worst case scenario performance was due to a single *E. cloacae* isolate for which all MIC values for Cefiderocol were off-scale.

2. Linearity:

   Not applicable

3. Analytical Specificity/Interference:

   Not applicable

4. Assay Reportable Range:

   Not applicable

5. Traceability, Stability, Expected Values (Controls, Calibrators, or Methods):

Quality control strains recommended by the CLSI were tested with Cefiderocol at three sites. The QC organisms tested were *E. coli* ATCC 25922 and *P. aeruginosa* ATCC 27853. The QC strains were initially tested a minimum of 20 times per site and read using the VIZION and OptiRead (Table 2). Additional QC testing was performed during further clinical performance testing of clinical and challenge isolates (Table 3).

The results demonstrate that the Sensititre 18-24 hour MIC or Breakpoint panel with Cefiderocol produced quality control results for *E. coli* ATCC 25922 in the recommended range >95% of the time (Table 2 and Table 3). Quality control results for *P. aeruginosa* ATCC 27853 were not in the recommended range 95% of the time using the VIZION and OptiRead method during initial testing (Table 2). In order to address the lower performance for *P. aeruginosa* ATCC 27853, additional quality control study was conducted which showed results within the expected range 100% of the time (Table 3) and was considered acceptable. Quality control results for *P. aeruginosa* ATCC 27853 were not in the recommended range 95% of the time with the reference method during both phases of the method comparison study. However, these data were considered acceptable and had no impact on clinical or challenge isolate test results since no *P. aeruginosa* clinical or challenge isolates were tested during days quality control results were out of recommended range. When the strains were tested the following day (per protocol), all quality control results were in-range. Furthermore, 19 additional QC tests were performed on 11 frozen reference panels and were 100% within the recommended range using the CLSI reference method (data not shown).

Table 2. Quality Control Results for Sensititre 18 – 24 hour MIC or Breakpoint Susceptibility System with Cefiderocol with the VIZION and OptiRead Methods

QC Organism	Cefiderocol Range (µg/mL)	Concentration (µg/mL)	Reference	Sensititre	
				Read method	
				VIZION	OptiRead
E. coli ATCC 25922[a]	0.06-0.5	0.03	0	0	0
		0.06	0	1	1
		0.12	11	20	20
		0.25	50	41	40
		0.5	1	2	2
		1	0	0	1
P. aeruginosa ATCC 27853[b]	0.06-0.5	0.03	0	0	0
		0.06	0	0	0
		0.12	1	4	2
		0.25	22	30	27
		0.5	34	25	26
		1	5	5	9

[a]*E. coli* ATCC 25922 in-range QC results: Reference, 100%; VIZION, 100%; OptiRead, 98.4%
[b]*P. aeruginosa* ATCC 27853 in-range QC results: Reference, 91.9%; VIZION, 85.9%; OptiRead, 92.2%

Table 3. Additional Quality Control Results for Sensititre 18 – 24 hour MIC or Breakpoint Susceptibility System with Cefiderocol with the VIZION and OptiRead Methods

QC Organism	Cefiderocol Range (µg/mL)	Concentration (µg/mL)	Reference	Sensititre	
				Read method	
				VIZION	OptiRead
E. coli ATCC 25922[a]	0.06-0.5	0.03	0	2	2
		0.06	0	17	18
		0.12	6	27	28
		0.25	56	22	20
		0.5	9	6	5
		1	0	0	0
P. aeruginosa ATCC 27853[b]	0.06-0.5	0.03	0	0	0
		0.06	0	3	3
		0.12	9	4	18
		0.25	38	42	42
		0.5	18	25	11
		1	6	0	0
		1	5	5	9

[a]*E. coli* ATCC 25922 in-range QC results: Reference, 100%; VIZION, 97.3%; OptiRead, 97.3%
[b]*P. aeruginosa* ATCC 27853 in-range QC results: Reference, 91.5%; VIZION, 100%; OptiRead, 100%

Inoculum Density. Inoculum density checks were performed a sufficient number of times; all organism suspensions were in the acceptable range.

Purity Checks. Purity checks were performed on all isolates following plate inoculation. Only results from pure cultures were evaluated.

Growth failures. All gram-negative isolates tested showed growth in the Sensititre panels.

6. Detection Limit:

Not applicable

7. Assay Cut-Off:

Not applicable

B Comparison Studies:

1. Method Comparison with Predicate Device:

For this review, the interpretative criteria are applied to *Enterobacteriaceae* and *Pseudomonas aeruginosa* according to the FDA STIC website. As required under 511A(2)(2)(B) of the Federal Food, Drug and Cosmetic Act, the following statements are added to the Sensititre 18-24 hour MIC or Breakpoint Susceptibility System package insert:

Per the FDA-Recognized Susceptibility Test Interpretive Criteria website, the safety and efficacy of antimicrobial drugs, for which antimicrobial susceptibility is tested by this AST device, may or may not have been established in adequate and well-controlled clinical trials for treating clinical infections due to microorganisms outside of those found in the indications and usage in the drug label. The clinical significance of

susceptibility information in those instances is unknown. The approved labeling for specific antimicrobial drugs provides the uses for which the antimicrobial drug is approved.

Results obtained with Sensititre 18 – 24 hour MIC or Breakpoint Susceptibility System with Cefiderocol were compared to results obtained with the CLSI broth microdilution reference panel. To prepare the reference panel, drug dilutions were made using iron-depleted CAMHB as indicated in CLSI M100, 29th ed. Chelation was used for iron depletion, which also removed other cations (i.e., calcium, magnesium, and zinc). Following this process, cations were added back to the medium in the following concentrations: calcium 20-25 mg/L, magnesium 10-12.5 mg/L, and zinc 0.5-1.0 mg/L.

The dried Sensititre panels have a similar media composition using an alternative preparation method to produce final media in accordance with CLSI requirements.

Clinical testing was performed at three clinical study sites in the U.S. A total of 268 *Enterobacteriaceae* isolates were tested compromised of the following species: *E. coli* (90 isolates), *E. cloacae* (74 isolates), *K. pneumoniae* (89 isolates) and *P. mirabilis* (15 isolates). A total of 60 *P. aeruginosa* isolates were tested. All of the clinical isolates tested were fresh isolates. During the course of the clinical trial, all Sensititre dried MIC panels were inoculated using the Sensititre Autoinoculator (AIM) and the same panel was read on both the VIZION and the OptiRead in a blinded manner. The sponsor added the following limitations to the device labeling to reflect these inoculation and read methods:

Studies of Cefiderocol with Enterobacteriaceae and Pseudomonas aeruginosa were performed using the AIM autoinoculator inoculation method and OptiRead and VIZION reading methods only. The use of alternative inoculation methods or alternative reading methods when testing Cefiderocol have not been evaluated.

A total of 103 challenge isolates were tested at a single site. Species tested included *E. coli* (29 isolates), *E. cloacae* (16 isolates), *K. pneumoniae* (27 isolates), *P. mirabilis* (10 isolates), and *P. aeruginosa* (21 isolates).

For the *Enterobacteriaceae*, results were evaluated for essential agreement (EA) and category agreement (CA). For CA evaluation, the breakpoints (≤2, 4, ≥8 µg/mL) were used as noted on the FDA-Recognized Susceptibility Test Interpretive Criteria Website (STIC) (https://www.fda.gov/Drugs/DevelopmentApprovalProcess/DevelopmentResources/ucm575163.htm). The results from clinical and challenge testing determined with the VIZION demonstrated a combined EA of 93.7% and CA of 92.0%. Of the 354 isolates tested by the VIZION, 264 (75%) were determined to have evaluable results with an EA of evaluable results of 91.7% (Table 4).

Clinical and challenge isolate results for the *Enterobacteriaceae* determined with OptiRead demonstrated a combined EA of 92.9% and CA of 90.6%. Of the 354 isolates tested by the OptiRead, 262 (74%) were determined to have evaluable results with an EA of evaluable results of 90.5% (Table 5). There was one very major error for *E. coli* for both read methods, which was considered acceptable as a random error.

For *P. aeruginosa* results were evaluated for essential agreement (EA) and category agreement (CA). For CA evaluation, the STIC-recognized breakpoints (≤1, 2, ≥4 µg/mL) were used. The results from clinical and challenge testing determined with the VIZION demonstrated a combined EA of 97.5% and CA of 94.8%. Of the 81 isolates tested by the VIZION, 79 (97.5%) were determined to have evaluable results with an EA of evaluable results of 97.5% (Table 6). Clinical and challenge isolate results for the *P. aeruginosa* determined with OptiRead demonstrated a combined EA of 97.5% and CA of 92.6%. Of the 81 isolates

tested by the OptiRead, 80 (99%) were determined to have evaluable results with an EA of evaluable results of 97.5% (Table 7).

For *P. mirabilis* and *P. aeruginosa*, an insufficient number of resistant strains were encountered during the clinical evaluation. The sponsor included the following limitation in the device labeling:

The ability of the Sensititre system to detect resistance to Cefiderocol in the following species is unknown because resistant strains were not available at the time of comparative testing: P. mirabilis and P. aeruginosa. Isolates yielding cefiderocol MIC results suggestive of a resistant interpretive category should be submitted to a reference laboratory for further testing.

Table 4. Performance of *Enterobacteriaceae* Clinical and Challenge Isolates, Read Using VIZION

	Tot	EA N	EA %	Eval Tot	Eval EA N	Eval EA %	CA Tot	CA %	No. R	No. S	Min	maj	vmj
Enterobacteriacaeae [a]**, ≤2(S), 4(I), ≥8 (R)**													
Clinical	268	253	94.4	195	180	92.3	258	96.3	7	250	10	0	0
Challenge	82	75	91.5	69	62	89.9	64	78.0	25	41	17	0	1
Total	350	328	93.7	264	242	91.7	322	92.0	32	291	27	0	1

[a]Includes *E. coli, E. cloacae, K. pneumoniae* and *P. mirabilis*

EA – Essential Agreement (+/- 1 dilution)
CA – Category Agreement
EVAL – Evaluable isolates
R – Resistant isolates

min – minor discrepancies
maj – major discrepancies
vmj – very major discrepancies

Essential agreement (EA) occurs when the result of the reference method and that of the Sensititre panel are within plus or minus one serial two-fold dilution of the antibiotic. Evaluable results are those that are on scale for both the reference method and the Sensititre panel. Category agreement (CA) occurs when the interpretation of the result of the reference method agrees exactly with the interpretation of the Sensititre panel.

Table 5. Performance of *Enterobacteriaceae* Clinical and Challenge Isolates, Read Using OptiRead

	Tot	EA N	EA %	Eval Tot	Eval EA N	Eval EA %	CA Tot	CA %	No. R	No. S	Min	maj	vmj
Enterobacteriacaeae [a]**, ≤2(S), 4(I), ≥8 (R)**													
Clinical	268	250	93.3	193	175	90.7	258	96.3	7	250	10	0	0
Challenge	82	75	91.5	69	62	89.9	59	72.0	25	41	22	0	1
Total	350	325	92.9	262	237	90.5	317	90.6	32	291	32	0	1

[a]Includes *E. coli, E. cloacae, K. pneumoniae* and *P. mirabilis*

Table 6. Performance of *P. aeruginosa* Clinical and Challenge Isolates, Read Using VIZION

	Tot	EA N	EA %	Eval Tot	Eval EA N	Eval EA %	CA Tot	CA %	No. R	No. S	Min	maj	vmj
***P. aeruginosa*, ≤1(S), 2(I), ≥4 (R)**													
Clinical	60	58	96.7	58	56	96.6	59	98.3	0	58	1	0	0
Challenge	21	21	100	21	21	100	18	85.7	0	20	3	0	0
Total	81	79	97.5	79	77	97.5	77	94.8	0	78	4	0	0

Table 7. Performance of *P. aeruginosa* Clinical and Challenge Isolates, Read Using OptiRead

	Tot	EA N	EA %	Eval Tot	Eval EA N	Eval EA %	CA Tot	CA %	No. R	No. S	Min	maj	vmj
***P. aeruginosa*, ≤1(S), 2(I), ≥4 (R)**													
Clinical	60	58	96.7	59	57	96.6	58	96.7	0	58	2	0	0
Challenge	21	21	100	21	21	100	17	81.0	0	20	4	0	0
Total	81	79	97.5	80	78	97.5	75	92.6	0	78	6	0	0

Resistance Mechanisms

Challenge isolates of *Enterobacteriaceae* harboring various molecular mechanisms of resistance noted in the FDA drug label were tested with cefiderocol. The following resistance mechanisms were evaluated: ESBLs (TEM, SHV, CTX-M, oxacillinase [OXA]), AmpC, AmpC-type ESBL (CMY), serine carbapenemases (such as KPC, OXA-48), and metallo-carbapenemases (such as NDM and VIM) and OmpK35/36 porin deletion.

MIC Trending

An analysis of trending was conducted using the combined clinical and challenge data for each organism group. This trending calculation takes into account MIC values that are determined to be one or more doubling dilutions lower or higher compared to the reference method irrespective of whether the device MIC values are on-scale or not. Trending results are shown in Table 8 for *Enterobacteriaceae* and for *P. aeruginosa* in Table 9. Results for *Enterobacteriaceae* were also stratified by species to determine if particular trends were observed. The acceptable percent difference between higher and lower dilution readings is <30%.

Table 8. Trending in *Enterobacteriaceae*, Clinical and Challenge Isolates

Organism (Read Method)	Total evaluable for trending	≥ 1 dilution lower No. (%)	Exact No (%)	≥ 1 dilution higher No (%)	Percent Difference (CI)	Trending Noted
E.coli (VIZION)	93	47 (50.5)	28 (30.1)	18 (19.4)	-31.2 (-43.2 to -17.6)	Yes
E.coli (OptiRead)	93	51 (54.8)	26 (28.0)	16 (17.2)	-37.6 (-49.2 to -24.2)	Yes
E. cloacae (VIZION)	87	34 (39.1)	34 (39.1)	19 (21.8)	-17.2 (-30.1 to -3.6)	No
E. cloacae (OptiRead)	86	40 (46.5)	32 (37.2)	14 (16.3)	-30.2 (-42.5 to -16.5)	Yes
K. pneumoniae (VIZION)	98	35 (35.7)	39 (39.8)	24 (24.5)	-17.2 (-29.5 to -4.2)	No
K. pneumoniae (OptiRead)	96	45 (46.9)	30 (31.2)	21 (21.9)	-25.0 (-37.2 to -11.6)	No
P. mirabilis (VIZION)	10	5 (50.0)	3 (30.0)	2 (20.0)	-30.0 (-60.0 to 10.7)	Yes
P. mirabilis (OptiRead)	10	5 (50.0)	3 (30.0)	2 (20.0)	-30.0 (-60.0 to 10.7)	Yes
Enterobacteriaceae (VIZION)	288	121 (42.0)	104 (36.1)	63 (21.9)	-20.1 (-27.4 to -12.6)	No
Enterobacteriaceae (OptiRead)	285	141 (49.5)	91 (31.9)	53 (18.6)	-30.9 (-38.0 to -23.3)	Yes

Table 9. Trending in *P. aeruginosa*, Clinical and Challenge Isolates

Organism (Read Method)	Total evaluable for trending	≥ 1 dilution lower No. (%)	Exact No (%)	≥ 1 dilution higher No (%)	Percent Difference (CI)	Trending Noted
P. aeruginosa (VIZION)	80	13 (16.3)	39 (48.8)	28 (35.0)	18.8 (5.2 to 31.5)	No
P. aeruginosa (OptiRead)	81	9 (11.1)	37 (45.7)	35 (43.2)	32.1 (18.7 to 44.1)	Yes

A trend toward lower MIC readings was observed for *E. coli* and *P. mirabilis* with both VIZION and OptiRead. A trend toward lower MIC readings was observed for *E. cloacae* for OptiRead; a trend toward higher MIC readings was observed for *P. aeruginosa* for OptiRead. The sponsor included the following footnotes to the performance table to address the trending observed with Cefiderocol:

Cefiderocol MIC values tended to be in exact agreement or at least one dilution higher when testing P. aeruginosa with OptiRead compared to the CLSI reference broth microdilution. MIC values tended to be in exact agreement or one dilution lower when testing E. coli, P. mirabilis and E. cloacae.

Cefiderocol MIC values tended to be in exact agreement or at least one dilution lower when testing E. coli and P. mirabilis with VIZION compared to the CLSI reference broth microdilution.

2. Matrix Comparison:

Not applicable

C Clinical Studies:

1. Clinical Sensitivity:

Not applicable

2. Clinical Specificity:

Not applicable

3. Other Clinical Supportive Data (When 1. and 2. Are Not Applicable):

Not applicable

D Clinical Cut-Off:

Not applicable

E Expected Values/Reference Range:

The FDA-identified susceptibility interpretative criteria for Cefiderocol are listed in Table 10.

Table 10: FDA-Identified Interpretative Criteria[a] for Cefiderocol (µg/mL)

	Susceptible (S)	Intermediate (I)	Resistant (R)
Enterobacteriaceae[b]	≤2	4	≥8
Pseudomonas aeruginosa	≤1	2	≥4

[a]FDA STIC Webpage

[b]Includes *Escherichia coli*, *Klebsiella pneumoniae*, *Proteus mirabilis* and *Enterobacter cloacae* complex

VIII Proposed Labeling:

The labeling supports the finding of substantial equivalence for this device.

IX Conclusion:

The submitted information in this premarket notification is complete and supports a substantial equivalence decision.

To support the implementation of changes to FDA-recognized susceptibility test interpretive criteria (i.e., breakpoints), this submission included a breakpoint change protocol that was reviewed and accepted by FDA. This protocol addresses future revisions to device labeling in response to breakpoint changes that are recognized on the FDA STIC webpage (https://www.fda.gov/Drugs/DevelopmentApprovalProcess/DevelopmentResources/ucm410971.htm). The protocol outlined the specific procedures and acceptance criteria that ThermoFisher intends to use to evaluate the Sensititre 18-24 hour MIC or Breakpoint Susceptibility System with Cefiderocol in the dilution range of 0.03 – 64 µg/mL when revised breakpoints for cefiderocol are published on the FDA STIC webpage. The breakpoint change protocol included with the submission indicated that if specific criteria are met, ThermoFisher will update the cefiderocol device label to include (1) the new breakpoints, (2) an updated performance section after re-evaluation of data in this premarket notification with the new breakpoints, and (3) any new limitations as determined by their evaluation.