development for the treatment of invasive candidiasis. This study evaluated the *in vitro* antifungal activity of SCY-078 against a collection of clinical *C. parapsilosis* isolates.

Methods. Retrospective analysis of data from 7 independent studies evaluating the activity of SCY-078 is presented. Data were available for 206 *C. parapsilosis* isolates collected between 2008 and 2015 in the US and EU. The collection included 186 wild-type isolates as well as 14 azole-resistant, and 6 echinocandin-resistant isolates. Minimum inhibitory concentrations (MIC) were determined according to the CLSI M27-A3 and EUCAST E.DEF 7.3 guidelines. Comparator compounds varied across studies and included fluconazole, micafungin (MCF), caspofungin (CSP), and anidulafungin (ANI). MIC_{50} and MIC_{90} values were defined as the concentrations inhibiting growth of 50% and 90% of isolates, respectively. Echinocandin and azole resistance were determined based on CLSI M27-A4 guidelines.

Results. The MIC_{50} values obtained for SCY-078 against the wild-type *C. parapsilosis* isolates across the 7 studies ranged from 0.25 to 1 µg/mL and the MIC_{90} values ranged from 0.25 -2 µg/mL. Among the echinocandins, MIC_{90} values ranged from 0.5 to 2 µg/mL (CSP), 1 to 4 µg/mL (MCF) and 2 to 4 µg/mL (ANI). SCY-078 was active against the 14 azole-resistant isolates (MIC ranging from 0.25 to 2 µg/mL). Similar activity was observed across the 6 echinocandin-resistant isolates with MIC values for SCY-078 ranging from 0.25 to 1 µg/mL. Among the 4 most recent studies in the US and EU (2013–2015) *C. parapsilosis* isolates represented 14 – 20% of the *Candida*isolates; rates were similar in the EU and US.

Conclusion. SCY-078 demonstrated potent activity against *C. parapsilosis* clinical isolates. Notably, SCY-078 was effective against all the echinocandin and azole resistant *C. parapsilosis* isolates tested.

Disclosures. **S. Barat**, Scynexis, Inc: Employee, Salary; **D. Angulo**, Scynexis, Inc.: Employee, Salary; **K. Borroto-Esoda**, Scynexis Inc.: Consultant, Consulting fee; **M. Ghannoum**, Scynexis, Inc.: Consultant, Investigator and Scientific Advisor, Consulting fee, Research grant and Research support

1207. Analysis of Oritavancin Activity against Gram-Positive Clinical Isolates Responsible for Bacterial Endocarditis in United States and European Hospitals (2008–2016)

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Background. Oritavancin (ORI) has documented *in vitro* activity against gram-positive (GP) isolates. This study analyzed ORI tested against organisms causing endocarditis in United States (US) and European (EU) sites.

Methods. A total of 424 organisms recovered from patients with a diagnosis of bacterial endocarditis at US and EU sites during the SENTRY Antimicrobial Surveillance Program (2008–2016) were included (see Table). Isolates were identified by standard biochemical algorithms and MALDI-TOF. Susceptibility (S) testing was performed by CLSI methods, and MICs were interpreted per CLSI and/or EUCAST criteria.

Results. Among the 424 isolates, 212 (50.0%) were *S. aureus* (SA; 31.6% methicillin-resistant [MRSA]), 47 (11.1%) were coagulase-negative staphylococci (CoNS), 81 (19.1%) were *E. faecalis* (EFC), 21 (5.0%) were *E. faecium* (EFM), 24 (5.7%) were BHS, and 39 (9.2%) were viridans group streptococci (VGS). ORI had similar MIC_{90} values (0.06 µg/mL) against SA and CoNS, inhibiting 98.8% of these isolates at ≤0.12 µg/mL. ORI MIC_{50} values were 8- to 32-fold lower than those for vancomycin (VAN), daptomycin (DAP), and ceftaroline (CPT) against staphylococci. ORI showed MICs against EFM ($MIC_{50/90}$, 0.008/0.03 µg/mL) that were 2-fold lower than against EFC ($MIC_{50/90}$, 0.015/0.03 µg/mL; 97.5%S against all or 100%S against indicated VAN-S isolates). ORI inhibited 98.0% of all enterococci, including VAN-resistant isolates at ≤0.12 µg/mL. VAN, DAP, ampicillin ($MIC_{50/90}$, ≤1/2 µg/mL), and linezolid (LZD) ($MIC_{50/90}$, 1/2 µg/mL) were similarly active against EFC, while DAP and LZD had coverage (100.0%S) against EFM. Overall, BHS were highly S to all agents tested, except for erythromycin (70.8%S) and tetracycline (43.5%S). ORI was the most active agent (MIC_{90}, 0.12 µg/mL) tested against VGS.

Conclusion. ORI showed potent *in vitro* activity against isolates recovered from patients with endocarditis in US and EU sites. The data presented here warrant further investigations to determine whether ORI has a role for treating endocarditis.

	Oritavancin			Vancomycin			Daptomycin			Ceftaroline		
	MIC (µg/mL)		%S[b]	MIC (µg/mL)		%S[b]	MIC (µg/mL)		%S[b]	MIC (µg/mL)		%S[b]
Organism[a] (no. tested)	50%	90%		50%	90%		50%	90%		50%	90%	
S. aureus (212)	0.03	0.06	99.1	1	1	100.0	0.25	0.5	100.0	0.25	1	93.5
MSSA (145)	0.03	0.06	100.0	1	1	100.0	0.25	0.5	100.0	0.25	0.25	100.0
MRSA (67)	0.03	0.06	97.0	1	1	100.0	0.25	0.5	100.0	0.5	2	80.0
CoNS (47)	0.03	0.06	-	1	2	100.0	0.25	0.5	100.0	0.25	-	-
E. faecalis (81)	0.015	0.03	97.5	1	2	96.3	1	2	100.0	NT	NT	-
E. faecium (21)	≤0.008	0.03	-	1	>16	57.1	2	2	100.0	NT	NT	-
BHS (24)	0.03	0.12	100.0	0.25	0.5	100.0	0.12	0.25	100.0	≤0.008	-	100.0
VGS (39)	0.015	0.12	100.0	0.5	0.5	100.0	0.25	0.5	100.0	0.015	-	-

[a] MSSA, methicillin (oxacillin)-susceptible *S. aureus*; MRSA, methicillin (oxacillin)-resistant *S. aureus*; CoNS, coagulase-negative staphylococci; BHS, β-hemolytic streptococci; and VGS, viridans group streptococci.
[b] %S, percentage susceptible according to CLSI (M100-S27, 2017). ORI breakpoint for *E. faecalis* vancomycin-susceptible applied to all isolates, including 3 vancomycin-resistant isolates. All vancomycin-susceptible *E. faecalis* were susceptible to oritavancin; -, breakpoints not available. NT, not tested.

Disclosures. **M. A. Pfaller**, The Medicines Company: Research Contractor, Research grant; **H. S. Sader**, The Medicines Company: Research Contractor, Research grant; **D. Shortridge**, The Medicines Company: Research Contractor, Research grant; **R. K. Flamm**, The Medicines Company: Research Contractor, Research grant; **R. E. Mendes**, The Medicines Company: Research Contractor, Research grant

1208. *In Vitro* Evaluation of Delafloxacin Activity when Tested Against Contemporary community-Acquired Bacterial Respiratory Tract Infection Isolates (2014–2016): Results from the Sentry Antimicrobial Surveillance Program

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Background. Delafloxacin (DLX) is a broad-spectrum fluoroquinolone (FQ) antibacterial that has completed clinical development (oral and intravenous formulations) with the new drug application currently under the Food and Drug Administration review for the treatment of acute bacterial skin and skin structure infections (ABSSSI). DLX is also in clinical trials for community-acquired bacterial pneumonia. In this study, *in vitro* susceptibility results for DLX and comparator agents were determined for clinical isolates from community-acquired respiratory tract infections (CA-RTI) collected in medical centers in the United States and Europe participating in the SENTRY surveillance program during 2014–2016.

Methods. A total of 3,093 isolates that included 1,673 *Streptococcus pneumoniae* (SPN), 805 *Haemophilus influenzae* (HI) and 555 *Moraxella catarrhalis* (MC) were collected during 2014–2016 and included only 1 isolate/patient/infection episode. Isolate identifications were confirmed at JMI Laboratories. Susceptibility testing was performed according to CLSI reference broth microdilution methodology, and results were interpreted per CLSI (2017) breakpoints. Other antibacterials tested included levofloxacin (LVX) and penicillin. B-lactamase production for HI and MC was determined by the nitrocephin disk test.

Results. DLX demonstrated potent *in vitro* activity against SPN ($MIC_{50/90}$ 0.015/0.03 mg/L). Activity remained the same for penicillin-intermediate or -resistant isolates. For 23 LVX nonsusceptible SPN, the DLX $MIC_{50/90}$ were 0.12/0.25 mg/L with all isolates having DLX MIC values ≤1 mg/L. For HI, the DLX $MIC_{50/90}$ were ≤0.001/0.004 mg/L, and for MC the $MIC_{50/90}$ were 0.008/0.008 mg/L. DLX activity was unaffected by the presence of β-lactamase for either HI or MC. Activity of DLX was similar for US and European isolates.

Conclusion. Delafloxacin demonstrated potent *in vitro* antibacterial activity against CA-RTI pathogens, including SPN, HI, and MC. These data support the continued study of DLX as a potential treatment for community-acquired pneumonia.

Disclosures. **D. Shortridge**, Melinta Therapeutics: Research Contractor, Research grant; **J. M. Streit**, Melinta Therapeutics: Research Contractor, Research grant; **M. D. Huband**, Melinta Therapeutics: Research Contractor, Research grant; **P. R. Rhomberg**, Melinta Therapeutics: Research Contractor, Research grant; **R. K. Flamm**, Melinta Therapeutics: Research Contractor, Research grant

1209. *In Vitro* Activity of Eravacycline and Comparator Antimicrobials Against 143 Strains of *Bacteroides* Species.

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Background. Eravacycline (ERV is the first fully synthetic fluorocycline with activity against tetracycline (TET)-resistant organisms. In addition, it is 2–8 times more potent than tigecycline (TGC). Like other tetracyclines, it inhibits protein synthesis by binding to the 30S ribosomal subunit exhibiting a broad spectrum of activity. To further explore its activity, we tested 143 clinical isolates of *Bacteroides* and included TET, TGC and other drugs frequently used to treat serious infections.

Methods. Clinical isolates recovered during the past 3 years from patients in southern California were saved as pure cultures in 20% skim milk at −70°C. Prior to testing, they were transferred at least twice to ensure purity and good growth. Antimicrobials included ERV, TET, TGC, piperacillin-tazobactam (P-T), meropenem (MER), clindamycin (CLI), and metronidazole (MET). The method was agar dilution as described in the CLSI M11-A8 document for testing anaerobes using Brucella agar and incubation in the anaerobic chamber at 36°C for 44h. The MIC was defined as the lowest dilution that completely inhibited growth or resulted in a marked reduction compared with a drug-free growth control.

Results. The MIC_{90} values (µg/ml) for *Bacteroides* and *Parabacteroides* are presented in the table:

Organism (no.)	ERV	TGC	TET	P-T	MER	CLI	MET
B. caccae (10)	2	16	>32	8	0.25	>32	1
B. fragilis (25)	2	8	>32	1	0.5	>32	1
B. theta (25)	4	16	>32	16	1	>32	1
B. ovatus (33)	4	32	>32	8	4	>32	2
B. vulgatus (25)	1	4	>32	8	1	>32	2
P. distasonis (25)	1	8	>32	8	1	>32	2

ERV showed excellent activity against these strains and was 4–8 times more potent than TGC. TET and CLI were poorly active with most strains showing marked resistance. The other antimicrobials showed modest to good activity.

Conclusion. This study confirmed the improved activity of ERV over TGC against *Bacteroides* and suggests that ERV may be an appropriate choice for infections involving these organisms.

Disclosures. **E. Goldstein**, Tetraphase Pharmaceuticals: Research Contractor, Research grant

1210. Broad *In Vitro* Activity Analysis of Tedizolid Compared with Other Agents against a Global Collection of Gram-Positive Isolates Causing Bloodstream Infections (2014–2016)

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Background. Tedizolid (TZD) is an oxazolidinone derivative with oral and intravenous formulations approved for the treatment of acute bacterial skin and skin structure infections in the US, European countries, and other regions. This study evaluated TZD's and comparators' activity against a collection of clinical isolates causing bloodstream infections (BSI).

Methods. A total of 7,284 gram-positive isolates collected during the Surveillance of Tedizolid Activity and Resistance (STAR) Program for 2014–2016 were included. Bacteria were identified by standard algorithms and MALDI-TOF-MS. Susceptibility (S) testing was performed by CLSI methods, and interpretation used CLSI and EUCAST criteria.

Results. This *Staphylococcus aureus* collection contained 33.8% methicillin-resistant isolates. TZD was the most potent agent tested against all *S. aureus* ($MIC_{50/90}$, 0.12/0.12 µg/mL; 100.0%S) and the MRSA subset (Table). Other tested agents described in Table also had *in vitro* MRSA coverage. 15.6% of enterococci were vancomycin-resistant, which were mostly *Enterococcus faecium* (59.8%). Linezolid (LZD), ampicillin, daptomycin (DAP), and vancomycin (VAN) showed equivalent MIC_{50} values (1 µg/mL) against *E. faecalis*, but these MIC_{50} results were 8-fold higher than TZD (MIC_{50}, 0.12 µg/mL). Although LZD and DAP were highly active (98.9–99.4%S) against *E. faecium*, TZD MICs were 8- to 16-fold lower that LZD and DAP. Ceftaroline (CPT) showed the lowest MIC values against *Streptococcus pneumoniae*, whereas TZD and VAN were similarly active. TZD and CPT showed the lowest MIC_{90} values against viridans group streptococci, while CPT, ceftriaxone, and penicillin had the lowest MIC_{90} results against β-hemolytic streptococci.

Conclusion. TZD had potent activities against this global population of gram-positive clinical isolates that caused BSI. This *in vitro* potency and a favorable pharmacodynamic profile may suggest TZD is a promising candidate for treating BSI caused by gram-positive isolates, especially *E. faecium*.

Organisms (no. tested)	MIC_{50}/MIC_{90} (µg/mL) and % susceptible for agents with oral formulations[a]				
	TZD	LZD	VAN	DAP	CPT
MRSA (1,365)	0.12/0.12/100.0	1/1/100.0	0.5/1/100.0	0.25/0.5/99.7	1/1/90.3
Enterococcus spp. (1,758)	0.12/0.25/-	1/2/99.5	1/>16/84.4	1/2/99.8	1/>8/68.6[c]
E. faecalis (1,089)	0.12/0.25/100.0	1/2/99.8	1/2/98.0	1/1/100.0	1/2/100.0[c]
E. faecium (620)	0.12/0.25/-	1/2/98.9	1/>16/59.8	2/2/99.4	>8/>8/11.1[c]
S. pneumoniae (373)	0.12/0.25/-	1/1/100.0	0.25/0.25/100.0	NA	≤0.015/0.12/100.0
VGS (388)	0.12/0.12/-	1/1/100.0	0.5/0.5/100.0	0.25/0.5/100.0	≤0.015/0.12/-
BHS (723)	0.12/0.25/-	1/1/100.0	0.25/0.5/100.0	0.12/0.25/100.0	≤0.015/≤0.015/100.0

[a] TZD, tedizolid; LZD, linezolid; VAN, vancomycin; DAP, daptomycin; CPT, ceftaroline. Susceptibility results displayed here were based on CLSI criteria.
[b] MRSA, methicillin-resistant *S. aureus*; VGS, viridans group streptococci; BHS, β-haemolytic streptococci.
[c] Represents ampicillin results.

Disclosures. **R. E. Mendes**, Merck: Research Contractor, Research grant; **D. Shortridge**, Merck: Research Contractor, Research grant; **H. S. Sader**, Merck: Research Contractor, Research grant; **L. R. Duncan**, Merck: Research Contractor, Research grant; **R. K. Flamm**, Merck: Research Contractor, Research grant

1211. *In vitro* Susceptibility Testing of Essential Oils against Gram-positive and Gram-negative Clinical Isolates, including Carbapenem-resistant *Enterobacteriaceae* (CRE)

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Background. In the era of antibiotic resistance, alternative anti-infectives must be explored. The National Action Plan for Combating Antibiotic-Resistant Bacteria calls for developing nontraditional therapeutics, including natural compounds such as essential oils (EOs) (Goal 4.4). A pilot study previously showed *in vitro* activity of EOs against CRE and warranted further study of their antibacterial activity. We studied cinnamon bark, clove, lavender, lemongrass, eucalyptus, oregano, rosemary, thyme, tea tree, manuka, and Thieves® blend (Young Living Essential Oils, Lehi UT) against an expanded panel of Gram-positive and Gram-negative isolates.

Methods. 30 Gram-positive and 70 Gram-negative clinical isolates, including CRE, were tested using CLSI methods. Isolates were grown overnight on TSA; 0.5 McFarland suspensions in sterile water were swabbed over Mueller–Hinton agar using the Kirby–Bauer method. 20 µl of full-strength oils were pipetted onto blank paper disks in a sterile dish. Disks were placed aseptically onto the plates immediately after inoculating disks. Vancomycin was tested with Gram-positives and meropenem with Gram-negatives. Median zone diameters are shown.

Results. EOs oregano, thyme, cinnamon bark, and lemongrass had the largest zones of inhibition against Gram-positive organisms and were larger than those of vancomycin for MRSA/MSSA. Cinnamon bark had the largest zone of inhibition against *P. aeruginosa* and was larger than that of meropenem. Oregano, thyme, cinnamon bark had the largest zones of inhibition against *Enterobacteriaceae* and were larger than those of meropenem against *K. pneumoniae* and *E. cloacae*.

Table 1. Median Zone Diameters (mm for Essential Oils)

Isolates	Oregano	Thyme	Cinnamon Bark	Lemongrass	Manuka	Clove	Tea Tree	Thieves®	Vanco	Mero
MRSA *n* = 10	23	26	30	30	13	13	9	18	18	ND
MSSA *n* = 10	26	30	29	30	18	15	8.5	19	19	ND
S. pyogenes n = 10	18	19.5	13	22	14	13	6.5	18.5	20.5	ND
E. coli n = 20	21.5	20	24	ND	6	12	13	13	ND	30
K. pneumoniae n = 20	20	15	22	ND	6	11.5	15	12	ND	13
Ps. aeruginosa n = 15	6	6	17	ND	6	6	6	8	ND	7
E. cloacae n = 15	20	16	21	ND	6	10	15	11	ND	25.5

ND=not done

Conclusion. Essential oils showed significant *in vitro* activity against clinical isolates, including CRE. Further study of the clinical activity of essential oils is warranted.

Disclosures. **J. E. Patterson**, Young Living Essential Oils: Independent Contractor, Salary

1212. Lysin CF-301 Demonstrates In Vitro Synergy with Conventional Antibiotics against *Staphylococcus aureus*

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Background. CF-301 is a novel, recombinantly-produced bacteriophage-derived lysin (cell wall hydrolase) and is the first agent of this class to enter clinical development in the US for the treatment of bacteremia including endocarditis due to *S.aureus*. This study evaluated the in vitro activity of CF-301 combined with each of 7 antistaphylococcal antibiotics including those considered to be current standard of care treatments for *S.aureus* bacteremia (daptomycin, vancomycin, oxacillin, nafcillin, and cefazolin) as well as linezolid and telavancin.

Methods. MICs for CF-301 were determined using a new AST medium for broth microdilution recently endorsed by the CLSI for use with CF-301. The testing medium consisted of cation-adjusted MHB supplemented with 25% horse serum and 0.5 mM DTT. Synergy was determined by checkerboard microdilution using the fractional inhibitory concentration index (FICI) for each combination in triplicate. For each antibiotic tested, an FIC mean was derived from each set of checkerboards by averaging 3 consecutive FIC values along the growth/no growth interface for each plate. Thus, 9 values were, used to generate the final mean. Synergy was defined as an FICI of ≤0.5; indifference was >0.5 to <2; and antagonism was ≥2. Each combination was examined against 10 MSSA and 10 MRSA strains.

Results. CF-301 synergized with daptomycin and vancomycin against each MSSA and MRSA strain, with FICI values between 0.254 and 0.5. Synergy was similarly observed against all 20 strains tested with oxacillin and nafcillin (FICI = 0.25–0.5); for the third β-lactam, cefazolin, synergy was observed with 17 strains (FICI = 0.75, for the remaining 3 strains). CF-301 synergized with televancin against 70% of the strains (FICI = 0.375–0.5), and was indifferent with the remainder (FICI = 0.625–1). CF-301 synergized with linezolid against 55% of the strains (FICI = 0.375–0.5), and was indifferent with the remainder (FICI = 0.625–0.75).

Conclusion. The broadly synergistic activity of CF-301 with conventional antistaphylococcal antibiotics against MSSA and MRSA suggests that CF-301 may afford therapeutic benefit by potentiating the activity antibiotics to treat serious infections for which there is an unmet medical need to improve outcomes.

Disclosures. **K. Sauve**, ContraFect Corp: Employee, Salary; **A. Jandourek**, ContraFect Corp: Employee, Salary; **C. Cassino**, ContraFect Corp: Employee, Salary; **R. Schuch**, ContraFect Corp: Employee, Salary

1213. Activity of Antistaphylococcal Lysin CF-301 against Contemporary *Staphylococcus aureus* Clinical Isolates from the USA and Europe

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Session: 147. Expanded Spectrum – New Antimicrobial Susceptibility Testing
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Background. CF-301 is a novel, recombinantly-produced bacteriophage-derived lysin (cell wall hydrolase) and is the first agent of this class in the US to enter into clinical development for the treatment of bacteremia including endocarditis due to *S. aureus*. Hallmark features of CF-301 include rapid and pathogen-specific bacteriolytic activity, synergy with antibiotics, biofilm-disrupting activity, a low propensity for resistance, and the capacity to suppress antibiotic resistance. This is the first report of an international surveillance study for CF-301.