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Oritavancin Activity against Gram-positive Pathogens Isolated from United States and European Medical Centres (2008-2009)

Contact info:
Rodrigo Mendes, Ph.D.
JMI Laboratories
345 Beaver Kreek Centre, Suite A
North Liberty, IA 52317 USA
Tel: 319-665-3370 ext 218
Email: rodrigo-mendes@jmilabs.com

R.E. Mendes, R.N. Jones, H.S. Sader

JMI Laboratories, North Liberty, Iowa, USA

Abstract

Objectives: To evaluate the antimicrobial susceptibility of Gram-positive organisms collected from United States (USA) and European medical centres. The International Oritavancin Surveillance Program was initiated in 2008 as part of the SENTRY Antimicrobial Surveillance Program to monitor the activity of oritavancin and various comparators in the USA and Europe. We report the results obtained by this programme during the 2008-2009 period.

Methods: Gram-positive isolates (11,853) were consecutively collected from 55 hospitals in the USA (61.0%) and 13 European member states. Isolates were submitted to a central laboratory where bacterial identifications were confirmed using standard algorithms and Vitek 2. Isolates were tested for susceptibility against oritavancin and comparators by CLSI methods (M07-A8, 2009). CLSI (M100-S20, 2010) and EUCAST (2009) interpretative criteria were applied, when available.

Results: Infection sites included: blood (bacteremia; 43%), skin and skin structure (26%) and lower respiratory tract (19%). Oritavancin (MIC_{90}, 0.06 mg/L) was 8-fold more potent than daptomycin (MIC_{90}, 0.5 mg/L) and 16 to 32-fold more active than vancomycin (MIC_{90}, 1-2 mg/L) or linezolid (MIC_{90}, 1-2 mg/L) against staphylococci. Clindamycin (MIC_{90}, >2 mg/L; 54.0-81.3% susceptible) and levofloxacin (MIC_{90}, >4 mg/L; 25.8-61.9% susceptible) exhibited limited activity against staphylococci. While tetracycline (≥90.0% susceptible) and trimethoprim/sulfamethoxazole (≥98.6% susceptible) showed generally higher susceptibility rates against *S. aureus*, sub-optimal activity was noted against coagulase-negative staphylococci (51.9-86.4% susceptible). Oritavancin tested against *E. faecalis* (MIC_{90},0.03 mg/L; 4.2% vancomycin-resistant) displayed an MIC_{90} value 2-fold lower when compared to *E. faecium* (0.06 mg/L; 60.5% vancomycin-resistant). Among the comparators, only daptomycin and linezolid were active against enterococci (MIC_{90}, 2 mg/L; ≥99.3% susceptible), whereas *E. faecalis* were also susceptible to ampicillin (MIC_{90}, 2 mg/L; ≥99.8% susceptible). Oritavancin (MIC_{90}, 0.008 mg/L) was ≥128-fold more active than vancomycin (MIC_{90}, ≤1 mg/L), linezolid (MIC_{90}, 1 mg/L), levofloxacin (MIC_{90}, 1 mg/L) and ceftriaxone (MIC_{90}, 1 mg/L) against *S. pneumoniae*. The activity of oritavancin (MIC_{90}, 0.12 mg/L) was comparable to that of penicillin (MIC_{90}, 0.06 mg/L; 100.0% susceptible) against β-haemolytic streptococci.

Organism (No. tested)	ORT	Vancomycin			Daptomycin			Linezolid		
	MIC_{90} [a]	MIC_{90}	%S[a]	%S[b]	MIC_{90}	%S[a]	%S[b]	MIC_{90}	%S[a]	%S[b]
S. aureus (6,731)	0.06	1	100.0	100.0	0.5	99.9	99.9	2	>99.9	>99.9
MRSA (3,020)	0.06	1	100.0	100.0	0.5	99.8	99.8	2	99.9	99.9
CoNS (1,082)	0.06	2	100.0	99.3	0.5	99.6	99.6	1	98.9	98.9
MRCoNS (792)	0.06	2	100.0	99.1	0.5	99.7	99.7	1	98.6	98.6
E. faecium (669)	0.06	>16	39.0	39.0	2	99.4	–	2	99.3	99.3
E. faecalis (1,178)	0.03	2	95.6	95.6	2	100.0	–	2	100.0	100.0
SPN (1,198)	0.008	≤1	100.0	100.0	–	–	–	1	100.0	100.0
BHS (526)	0.12	0.5	100.0	100.0	0.25	100.0	100.0	1	100.0	100.0
VGS (199)	0.03	0.5	100.0	100.0	0.5	99.5	99.5	1	100.0	100.0

(a) CLSI and (b) EUCAST interpretation criteria, if available.
MRSA = methicillin-resistant *S. aureus*; CoNS = coagulase-negative staphylococci; MRCoNS = methicillin-resistant CoNS; SPN = *S. pneumoniae*; BHS = β-haemolytic streptococci; VGS = viridans group streptococci; – = not available.

Conclusions: Based on MIC_{90} values, oritavancin demonstrated potent in vitro activity against this contemporary collection of Gram-positive pathogens. In addition, the oritavancin activity was not adversely affected by resistance to other currently-marketed antimicrobial agents.

Introduction

Antimicrobial resistance among Gram-positive bacteria continues to be a primary concern among health care providers and public health officials. This is especially true for methicillin (oxacillin)-resistant *Staphylococcus aureus* (MRSA) and coagulase-negative staphylococci (MRCoNS), vancomycin-resistant *Enterococcus* spp. (VRE) and *Streptococcus pneumoniae* non-susceptible to β-lactams and macrolides.

Oritavancin is a semisynthetic bactericidal lipoglycopeptide that inhibits cell wall synthesis by blocking the transglycosylation step in peptidoglycan biosynthesis. In addition, oritavancin partially inhibits RNA synthesis and increases membrane permeability. These combinations of modes of action provide oritavancin with attractive characteristics such as, rapid and concentration-dependent bactericidal activity against most Gram-positive organisms.

The International Oritavancin Surveillance Program was initiated in 2008 as part of the SENTRY Antimicrobial Surveillance Program to monitor the activity of oritavancin and various comparators in the United States (USA) and Europe. The aim of this study was to evaluate the antimicrobial susceptibility of Gram-positive organisms collected from USA and European medical centres. We report the results obtained by this program during the 2008 – 2009 period.

Methods

Bacterial isolates. A total of 11,853 Gram-positive isolates were collected from patients in the USA (27 hospitals; 61.0%) and 13 European member states, including Turkey and Israel (28 hospitals) during 2008 and 2009. Isolates were collected in a prevalence mode and mostly from bacteremia (43%), skin and skin structure infections (26%) or pneumonia (19%). Bacterial species identifications were confirmed using standard algorithms and the automated Vitek 2 System (bioMérieux, Hazelwood, Missouri, USA).

Antimicrobial susceptibility testing. All isolates were tested for susceptibility by reference broth microdilution methods using the Clinical Laboratory Standards Institute (CLSI; M07-A8, 2009) recommendations. Susceptibility testing was performed by using validated broth microdilution panels manufactured by TREK Diagnostics Systems/Sensititre (Cleveland, Ohio, USA). Categorical interpretation of comparator MIC values were performed according to CLSI (M100-S20, 2010) and European Committee on Antimicrobial Susceptibility Testing (EUCAST, 2009) criteria, when available.

Validation of the minimum inhibitory concentration (MIC) values was assured by concurrent testing of CLSI-recommended (M100-S20, 2010) quality control (QC) strains: *Enterococcus faecalis* ATCC 29212, *S. aureus* ATCC 29213, *Escherichia coli* ATCC 25922, *Pseudomonas aeruginosa* ATCC 27853 and *S. pneumoniae* ATCC 49619. MIC results for oritavancin and comparator agents tested were within published limits found in the CLSI M100-S20 (2010) document.

Results-1

- Oritavancin was very potent against staphylococci ($MIC_{50/90}$, 0.03/0.06 mg/L), inhibiting all *S. aureus* and CoNS isolates at ≤0.5 and ≤0.25 mg/L, respectively (Table 1). Vancomycin, daptomycin and linezolid were also very active when tested against MRSA (≥99.3% susceptible) or the entire population of CoNS isolates (≥98.9% susceptible) when using either CLSI or EUCAST breakpoint criteria (Table 2).
- Oritavancin (MIC_{90}, 0.06 mg/L) was eight-fold more potent than daptomycin (MIC_{90}, 0.5 mg/L) and 16 to 32-fold more active than vancomycin (MIC_{90}, 1 – 2 mg/L) or linezolid (MIC_{90}, 1 – 2 mg/L) when tested against MRSA and CoNS (Table 1 and 2).
- Overall, *E. faecalis* strains were very susceptible (≥95.6%) to ampicillin (MIC_{90}, 2 mg/L), vancomycin (MIC_{90}, 2 mg/L), teicoplanin (MIC_{90}, ≤2 mg/L), daptomycin (MIC_{90}, 2 mg/L) and linezolid (MIC_{90}, 2 mg/L). However, oritavancin (MIC_{90}, 0.03 mg/L; Table 2) demonstrated up to 64-fold greater potency than these cited comparator agents.
- A total of 61.0% *E. faecium* exhibited a non-susceptible phenotype to vancomycin (Table 1). Only daptomycin ($MIC_{50/90}$, 2/2 mg/L; 99.5% susceptible), linezolid ($MIC_{50/90}$, 1/2 mg/L; 98.8% susceptible) and quinupristin/dalfopristin ($MIC_{50/90}$, 1/1 mg/L; 95.8% susceptible) were active against vancomycin-non-susceptible *E. faecium.*
- Vancomycin-non-susceptible *E. faecium* showed higher (16-fold) oritavancin MIC_{90} values (0.12 mg/L) than their respective susceptible counterparts (MIC_{90}, 0.008 mg/L; Table 1). However, oritavancin inhibited all *E. faecium* isolates at ≤0.5 mg/L.
- High resistance rates against penicillin (12.2 – 21.2%), erythromycin (37.7%), clindamycin (21.8%), tetracycline (26.0%) and trimethoprim/sulfamethoxazole (23.0%) were noted among *S. pneumoniae* (Table 2) when applying the CLSI or EUCAST breakpoint criteria.
- Only vancomycin, levofloxacin and linezolid demonstrated good coverage (≥98.9% susceptible) against *S. pneumoniae*, while ceftriaxone showed a compromised activity (78.3% susceptible; Table 2) according to the EUCAST breakpoints.
- Oritavancin was very potent when tested against *S. pneumoniae* ($MIC_{50/90}$, ≤0.04/0.008 mg/L), viridans group streptococci ($MIC_{50/90}$, 0.008/0.03 mg/L) and β-haemolytic streptococci ($MIC_{50/90}$, 0.03/0.12 mg/L; Tables 1 and 2).

Results-2

Table 1. MIC distribution of oritavancin tested against Gram-positive species/groups and resistant subsets submitted as part of the 2008 – 2009 international oritavancin surveillance program.

Organism (number tested)	MIC (mg/L)		Number (cumulative %) inhibited at each oritavancin MIC (mg/L)								
	50%	90%	≤0.004	0.008	0.015	0.03	0.06	0.12	0.25	0.5	1
***S. aureus* (6,731)**	0.03	0.06	12(0.2)	106(1.7)	1324(21.4)	3738(77.0)	1373(97.4)	163(99.8)	14(>99.9)	1(100.0)	
Oxacillin-susceptible (3,711)	0.03	0.06	8(0.2)	65(2.0)	770(22.7)	2037(77.6)	741(97.6)	84(99.8)	6(100.0)		
Oxacillin-resistant (3,020)	0.03	0.06	4(0.1)	41(1.5)	554(19.8)	1701(76.2)	632(97.1)	79(99.7)	8(>99.9)	1(100.0)	
CoNS (1,082)	0.03	0.06	63(5.8)	126(17.5)	144(30.8)	408(68.5)	297(95.9)	40(99.6)	4(100.0)		
Oxacillin-susceptible (290)	0.03	0.06	29(10.0)	47(26.2)	57(45.9)	104(81.7)	49(98.6)	4(100.0)			
Oxacillin-resistant (792)	0.03	0.06	34(4.3)	79(14.3)	87(25.2)	304(63.6)	248(94.9)	36(99.5)	4(100.0)		
***E. faecalis* (1,178)**	0.015	0.03	29(2.5)	257(24.3)	480(65.0)	306(91.0)	66(96.6)	0.12(97.3)	15(98.6)	15(99.8)	2(100.0)
Vancomycin-susceptible (1,126)	0.015	0.03	28(2.5)	251(24.8)	475(67.0)	302(93.8)	65(99.6)	4(99.9)	1(100.0)		
Vancomycin-non-susceptible (52)	0.25	0.5	1(1.9)	6(13.5)	5(23.1)	4(30.8)	1(32.7)	4(40.4)	14(67.3)	15(96.1)	2(100.0)
***E. faecium* (669)**	0.03	0.06	214(32.0)	83(44.4)	34(49.5)	149(71.7)	134(91.8)	47(98.8)	6(99.7)	2(100.0)	
Vancomycin-susceptible (261)	≤0.004	0.008	193(73.9)	62(97.7)	6(100.0)						
Vancomycin-non-susceptible (408)	0.03	0.12	21(5.1)	21(10.2)	28(17.2)	149(53.7)	134(86.5)	47(98.0)	6(99.5)	2(100.0)	
***S. pneumoniae* (1,198)**	≤0.004	0.008	1068(89.1)	114(98.7)	6(99.2)	9(99.9)	1(100.0)				
Penicillin-susceptible (745)	≤0.004	≤0.004	677(90.9)	60(98.9)	3(99.3)	5(100.0)					
Penicillin-non-susceptible (453)	≤0.004	0.008	391(86.3)	54(98.2)	3(98.9)	4(99.8)	1(100.0)				
Viridans group streptococci (199)	0.008	0.03	93(46.7)	37(65.3)	31(80.9)	22(92.0)	11(97.5)	3(99.0)	2(100.0)		
Penicillin-susceptible (147)	≤0.004	0.03	80(54.4)	27(72.8)	19(85.7)	13(94.6)	6(98.6)	1(99.3)	1(100.0)		
Penicillin-non-susceptible (52)	0.015	0.06	13(25.0)	10(44.2)	12(67.3)	9(84.6)	5(94.2)	2(98.1)	1(100.0)		
β-haemolytic streptococci (526)	0.03	0.12	12(2.3)	36(9.1)	86(25.5)	165(56.8)	153(85.9)	58(97.0)	12(99.4)	2(99.8)	1(100.0)
Group A (213)	0.03	0.06	1(0.5)	26(12.7)	59(40.4)	63(69.9)	46(91.5)	15(98.6)	1(99.1)	1(99.5)	1(100.0)
Group B (235)	0.06	0.12	1(0.4)	6(3.0)	22(12.3)	75(44.3)	88(81.7)	32(95.3)	10(99.6)	1(100.0)	
Group C (20)	0.03	0.06	3(15.0)	1(20.0)	9(65.0)	6(95.0)	1(100.0)				
Group G (37)	0.06	0.12	1(2.7)	2(8.1)	3(16.2)	11(45.9)	10(73.0)	9(97.3)	1(100.0)		

CoNS = coagulase-negative staphylococci.

Table 2. Antimicrobial activity of oritavancin and comparators tested against Gram-positive clinical isolates collected as part of the 2008 – 2009 international oritavancin surveillance program.

Organism/phenotype (no. tested) Antimicrobial agent	MIC (mg/L)		% susceptible / % resistant[a]	
	50%	90%	CLSI	EUCAST
MSSA (3,711)				
Oritavancin	0.03	0.06	[b] / -	- / -
Vancomycin	1	1	100.0 / 0.0	100.0 / 0.0
Teicoplanin	≤2	≤2	100.0 / 0.0	99.8 / 0.2
Erythromycin	≤0.25	>2	74.8 / 24.1	75.5 / 24.1
Clindamycin	≤0.25	≤0.25	95.5 / 4.3	95.2 / 4.5
Tetracycline	≤2	≤2	95.0 / 4.4	94.6 / 5.4
Levofloxacin	≤0.5	≤0.5	91.4 / 8.1	91.4 / 8.1
Daptomycin	0.25	0.5	100.0 / -	100.0 / 0.0
Linezolid	2	2	100.0 / 0.0	100.0 / 0.0
Trimethoprim/sulfamethoxazole	≤0.5	≤0.5	99.0 / 1.0	99.0 / 1.0
MRSA (3,020)				
Oritavancin	0.03	0.06	- / -	- / -
Vancomycin	1	1	100.0 / 0.0	100.0 / 0.0
Teicoplanin	≤2	≤2	100.0 / 0.0	99.3 / 0.7
Erythromycin	>2	>2	12.7 / 86.5	13.2 / 86.5
Clindamycin	≤0.25	>2	63.7 / 35.8	63.0 / 36.3
Tetracycline	≤2	4	90.6 / 8.9	89.8 / 10.2
Levofloxacin	>4	>4	25.8 / 73.5	25.8 / 73.5
Daptomycin	0.25	0.5	99.8 / -	99.8 / 0.2
Linezolid	2	2	99.9 / 0.1	99.9 / 0.1
Trimethoprim/sulfamethoxazole	≤0.5	≤0.5	98.6 / 1.4	98.6 / 1.4
CoNS[c] (1,082)				
Oritavancin	0.03	0.06	- / -	- / -
Oxacillin	>2	>2	26.8 / 73.2	26.8 / 73.2
Vancomycin	1	2	100.0 / 0.0	99.3 / 0.7
Teicoplanin	≤2	8	95.7 / 0.8	87.1 / 12.9
Erythromycin	>2	>2	33.6 / 65.8	34.0 / 65.8
Clindamycin	≤0.25	>2	65.5 / 32.1	63.5 / 34.5
Tetracycline	≤2	>8	86.4 / 12.8	84.3 / 15.7
Levofloxacin	4	>4	44.0 / 53.8	44.0 / 53.8
Daptomycin	0.25	0.5	99.6 / -	99.6 / 0.4
Linezolid	1	1	98.9 / 1.1	98.9 / 1.1
Trimethoprim/sulfamethoxazole	≤0.5	>2	61.2 / 38.8	61.2 / 38.8
***E. faecalis* (1,178)**				
Oritavancin	0.015	0.03	- / -	- / -
Ampicillin	≤1	2	100.0 / 0.0	99.8 / 0.0
Vancomycin	1	2	95.6 / 4.2	95.6 / 4.4
Teicoplanin	≤2	≤2	96.9 / 3.1	96.7 / 3.3
Erythromycin	>2	>2	5.6 / 66.4	- / -
Gentamicin (high-level)	≤500	>1000	68.6 / 31.4	- / -
Tetracycline	>8	>8	26.4 / 73.6	- / -
Levofloxacin	1	>4	65.6 / 34.1	- / -
Daptomycin	1	2	100.0 / -	- / -
Linezolid	1	2	100.0 / 0.0	100.0 / 0.0
Quinupristin/dalfopristin	>2	>2	1.3 / 96.0	1.3 / 96.0
***E. faecium* (vancomycin-susceptible; 261)**				
Oritavancin	≤0.004	0.008	- / -	- / -
Ampicillin	>16	>16	14.6 / 85.4	13.8 / 85.4
Teicoplanin	≤2	≤2	100.0 / 0.0	99.6 / 0.4
Erythromycin	>2	>2	6.5 / 86.6	- / -
Gentamicin (high-level)	≤500	>1000	72.8 / 27.2	- / -
Tetracycline	≤2	>8	64.0 / 36.0	- / -
Levofloxacin	>4	>4	12.6 / 80.1	- / -
Daptomycin	2	2	99.2 / -	- / -
Linezolid	1	2	100.0 / 0.0	100.0 / 0.0
Quinupristin/dalfopristin	1	>2	69.7 / 24.1	69.7 / 24.1
Oritavancin	0.03	0.12	- / -	- / -
Ampicillin	>16	>16	0.0 / 100.0	0.0 / 100.0
Teicoplanin	>16	>16	3.2 / 92.9	2.5 / 97.5
Erythromycin	>2	>2	2.9 / 95.3	- / -
Gentamicin (high-level)	≤500	>1000	82.3 / 17.7	- / -
Tetracycline	≤2	>8	58.3 / 41.2	- / -
Levofloxacin	>4	>4	2.0 / 97.8	- / -
Daptomycin	2	2	99.5 / -	- / -
Linezolid	1	2	98.8 / 1.2	98.8 / 1.2
Quinupristin/dalfopristin	1	1	95.8 / 1.7	95.8 / 1.7
***S. pneumoniae* (1,198)**				
Oritavancin	≤0.004	0.008	- / -	- / -
Vancomycin	≤1	≤1	100.0 / -	100.0 / 0.0
Penicillin[d]	≤0.03	4	87.8 / 0.7	- / -
Penicillin[e]	≤0.03	4	62.2 / 21.2	62.2 / 12.2
Ceftriaxone	≤0.25	1	90.4 / 1.8	78.3 / 1.8
Piperacillin/tazobactam	≤0.5	8	- / -	- / -
Erythromycin	≤0.25	>2	62.1 / 37.7	62.1 / 37.7
Clindamycin	≤0.25	>2	77.8 / 21.8	78.2 / 21.8
Tetracycline	≤2	>8	74.0 / 25.5	74.0 / 26.0
Levofloxacin	1	1	98.9 / 1.0	98.9 / 1.1
Linezolid	1	1	100.0 / -	100.0 / 0.0
Trimethoprim/sulfamethoxazole	≤0.5	>2	67.4 / 23.0	74.0 / 23.0
Viridans group streptococci[f] (199)				
Oritavancin	0.008	0.03	- / -	- / -
Vancomycin	0.5	0.5	100.0 / -	100.0 / 0.0
Teicoplanin	≤2	≤2	- / -	99.5 / 0.5
Penicillin	0.06	1	73.9 / 7.5	78.9 / 7.5
Erythromycin	0.5	>2	48.7 / 46.7	- / -
Clindamycin	≤0.25	≤0.25	90.5 / 9.0	91.0 / 9.0
Tetracycline	≤2	>8	67.8 / 26.1	- / -
Levofloxacin	1	2	91.0 / 8.0	- / -
Daptomycin	0.25	0.5	99.5 / -	- / -
Linezolid	1	1	100.0 / -	- / -
Trimethoprim/sulfamethoxazole	≤0.5	2	- / -	- / -
β-haemolytic streptococci[g] (526)				
Oritavancin	0.03	0.12	- / -	- / -
Vancomycin	0.5	0.5	100.0 / -	100.0 / 0.0
Teicoplanin	≤2	≤2	- / -	100.0 / 0.0
Penicillin	≤0.015	0.06	100.0 / -	100.0 / 0.0
Erythromycin	≤0.25	>2	75.1 / 23.6	75.1 / 23.6
Clindamycin	≤0.25	>2	88.0 / 11.8	88.2 / 11.8
Tetracycline	≤2	>8	51.7 / 45.4	51.7 / 48.3
Levofloxacin	≤0.5	1	99.2 / 0.6	95.2 / 0.8
Daptomycin	≤0.06	0.25	100.0 / -	100.0 / 0.0
Linezolid	1	1	100.0 / -	100.0 / 0.0
Trimethoprim/sulfamethoxazole	≤0.5	≤0.5	- / -	98.9 / 0.8

a. Breakpoint susceptibility criteria as published by CLSI M100-S20 (2010) and EUCAST (2009).
b. - : indicates no susceptibility and/or resistant breakpoints are available for the respective drug/organism combination.
c. CoNS = coagulase-negative staphylococci and includes: *S. auricularis* (9 strains), *S. capitis* (44 strains), *S. caprae* (1 strain), *S. carnosus* (1 strain), *S. chromogenes* (3 strains), *S. cohnii* (2 strains), *S. epidermidis* (491 strains), *S. haemolyticus* (55 strains), *S. hominis* (89 strains), *S. intermedius* (1 strain), *S. kloosii* (3 strains), *S. lugdunensis* (31 strains), *S. saprophyticus* (17 strains), *S. schiri* (3 strains), *S. simulans* (4 strains), *S. warneri* (22 strains), *S. xylosus* (11 strains), and unspeciated CoNS (304 strains).
d. Parenteral penicillin (non-meningitis).
e. Oral penicillin (penicillin V).
f. Includes: *S. acidominimus* (1 strain), *S. angiosus* (21 strains), *S. constellatus* (11 strains), *S. gordonii* (4 strains), *S. intermedius* (5 strains), *S. milleri* (8 strains), *S. mitis* (50 strains), *S. oralis* (9 strains), *S. parasanguinis* (12 strains), *S. salivarius* (13 strains), *S. sanguinis* (8 strains), *S. vestibularis* (1 strain), unspeciated alpha-hemolytic streptococci (2 strains), and unspeciated viridans group streptococci (54 strains).
g. Includes: *S. dysgalactiae* (11 strains), *S. equi* (3 strains), *S. equisimilis* (1 strain), Group A streptococcus (213 strains), Group B streptococcus (235 strains), Group C streptococcus (20 strains), Group F streptococcus (6 strains), and Group G streptococcus (37 strains).

Conclusions

- Oritavancin continues to demonstrate higher potency than the comparator agents when tested against several species/groups and resistant subsets of contemporary (2008 – 2009) clinical Gram-positive isolates in the USA and Europe.
- The activity of oritavancin was not adversely affected by resistance to other agents, except when tested against vancomycin-non-susceptible enterococci, yet inhibiting all isolates at ≤1 mg/L.
- The potent in vitro results shown here suggest oritavancin as a promising agent for the treatment of infections caused by a wide variety of Gram-positive isolates on two continents when this drug becomes clinically available.

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