Evaluation of disk diffusion testing of solithromycin using Mueller Hinton fastidious medium

Abstract 1603

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Objectives: Solithromycin (SOL), a novel fluoroketolide undergoing clinical development, will be tested by disk diffusion in both the US and Europe. This study was done to determine what effect the use of the different media recommended by EUCAST and CLSI for the target organisms [Streptococcus pneumoniae (SP), beta-haemolytic streptococci (BHS), and Haemophilus influenzae (HI)] might have on the inhibitory zone sizes obtained.

Methods: The following media were tested: CLSI; Mueller Hinton agar + 5% sheep blood [MHS] for SP, and Haemophilus Test Medium agar [HTM] for HI; EUCAST; Mueller-Hinton agar + 5% defibrinated horse blood and 20 mg/L beta-NAD [MH-F] for both SP and HI. Quality control organisms SP ATCC 49619, HI ATCC 49247, and HI NCTC 8468 were tested using two lot sources of SOL 15 mcg disks (MAST and BioRad) and MH-F from Oxoid and BD (Becton-Dickinson) and the results obtained were compared to the current CLSI quality control ranges. SOL zones obtained against HI and BHS clinical isolates tested on the different media were also analyzed.

Results:
The following table shows the SOL disk zones (mm) obtained against QC strains using MH-F.

	Approved CLSI	MH-F (Oxoid)		MH-F (BD)	
Organism	QC Range	MAST	Bio-Rad	MAST	Bio-Rad
SP	25 -- 33	31	32	31	32
ATCC 49619		30	30	31	32
		31	32	30	31
HI	16 -- 23	18	18	17	18
ATCC 49247		17	18	17	18
		17	18	17	18
HI	No Range	17	17	17	17
NCTC 8468		16	17	16	17
		17	18	17	17

Among the clinical isolates there was complete overlap between the zones obtained with MH-F (13 - 21 mm) and HTM (17 - 18 mm) for HI. BHS zones obtained with MH-F (24 - 33 mm) tended to be larger than zones obtained with MHS (20 - 30 mm), but the zones were comparable over all.

Conclusions: Comparable SOL disk diffusion results were obtained with the control strains and clinical strains tested with two different disk sources on agar from two different manufacturers. These findings indicate that SOL disk diffusion results are likely to be very similar for the target pathogens, regardless of which agar medium (CLSI or EUCAST) is used for testing.

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