

Comparison of Solithromycin MIC Against Respiratory Streptococci Determined by EUCAST and CLSI Broth Microdilution Methodology

ECCMID 2014 – eP190

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Objectives: Solithromycin is a fourth generation macrolide, the first fluoroketolide, that is currently undergoing Phase III clinical development for the treatment of community-acquired bacterial pneumonia and is being developed as oral capsules, intravenous and pediatric suspension. This study evaluated the *in vitro* activity of solithromycin against respiratory streptococcal isolates tested by the Clinical Laboratory and Standards Institute (CLSI) and European Committee on Antimicrobial Susceptibility Testing (EUCAST) broth microdilution methods.

Methods: A total of 165 streptococci, 113 *S. pneumoniae* and 52 *S. pyogenes*, collected from Europe and North America in 2012 were investigated. Minimum inhibitory concentration (MIC) for solithromycin was determined by broth microdilution in Mueller Hinton broth supplemented with 3% lysed horse blood (CLSI) and in Mueller Hinton broth supplemented with 5% defibrinated horse blood & 5 mg/L NAD (EUCAST).

Results: Very similar MIC values were obtained by either method. When CLSI MIC was plotted against EUCAST MIC the r^2 was 0.75 for *S. pneumoniae* and 0.79 for *S. pyogenes*. MIC distribution for combined streptococci is given in the Figure ($r^2 = 0.75$)

		<u>Solithromycin MIC distribution</u>											
EUCAST MIC (mg/L)	0.50										2	3	1
	0.25										4		
	0.12								2	1	1		
	0.06						1	6					
	0.03	1		1	7	15	4	3					
	0.015				7	18	3						
	0.008				45	26	1						
	0.004			1	9	1							
	0.002		1		1								
			≤ 0.001	0.002	0.004	0.008	0.015	0.03	0.06	0.12	0.25	0.5	1
		CLSI MIC (mg/L)											

Conclusions: Solithromycin showed very consistent activity against pneumococci and *S. pyogenes* using CLSI or EUCAST methods. Although susceptibility breakpoints are not yet available for solithromycin these data suggest that testing by either method in the future will be comparable.