

Synergistic effect of ceftazidime and flavonoids against *Streptococcus pyogenes*

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Results

The minimum inhibitory concentrations (MICs) for the ceftazidime, luteolin, baicalein and quercetin against *S. pyogenes* ATCC 19615 are shown in Table 1. This strain was susceptible to ceftazidime, luteolin, baicalein and quercetin at MIC of 0.25 µg/ml, 128 µg/ml, >256 µg/ml and 128 µg/ml respectively. Other results include:

Checkerboard assay: The fraction inhibitory concentration of ceftazidime plus isolated luteolin, baicalein and quercetin were 0.625, <0.625 and 0.531 respectively (Table 1). The results showed that ceftazidime at concentration of 0.25 µg/ml was significantly reduced when combined with isolated flavonoids against this strain.

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Table 1. Minimum Inhibitory Concentrations (MICs), fractional inhibitory concentrations (FICs) and FIC indexes

<i>S. pyogenes</i> ATCC 19615	MIC (µg/ml)	FIC (CF + FV) (µg/ml)	FIC index
Ceftazidime	0.25	-	-
Luteolin	128	0.125 + 16	0.625
Baicalein	>256	0.125 + <32	<0.625
Quercetin	128	0.125 + 4	0.531

CF = Ceftazidime; FV = Flavonoids

Viability curve The synergistic activity of ceftazidime in combination with luteolin, baicalein and quercetin were confirmed in viability curve.

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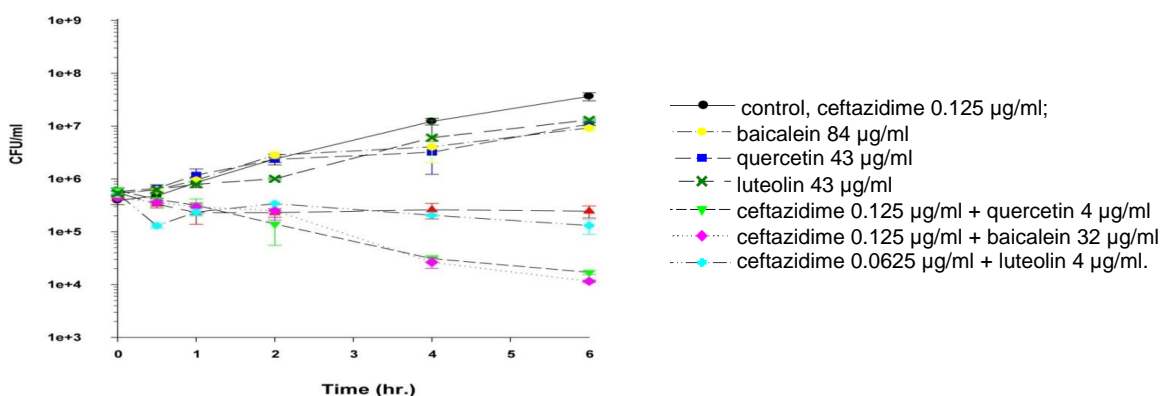


Figure 1. Viability of *S. pyogenes* ATCC 19615 after treatment with ceftazidime alone and in combined with flavonoids (the bars represent the standard deviations of three replicates)

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