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*Supplementary materials*

# Susceptibility assessment of clinical gram-negative and gram-positive bacterial strains to fosfomycin and significance of this antibiotic in infection treatment

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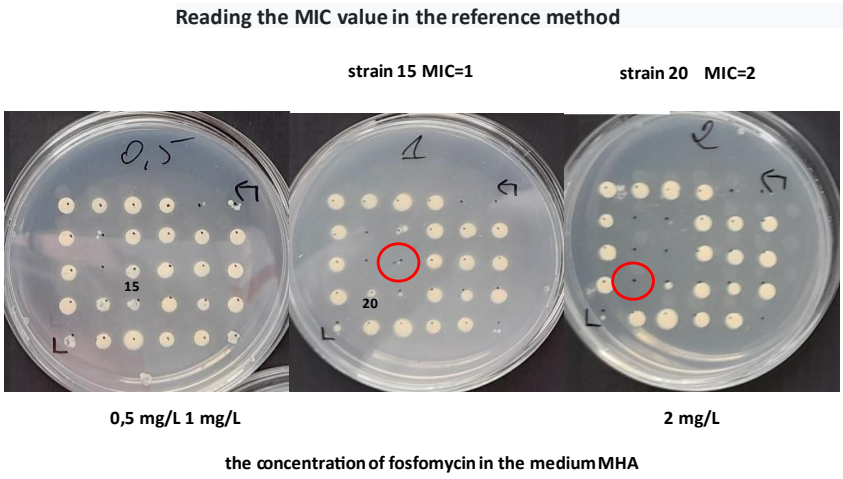


**Figure S1**. Reading the MIC value in the reference method

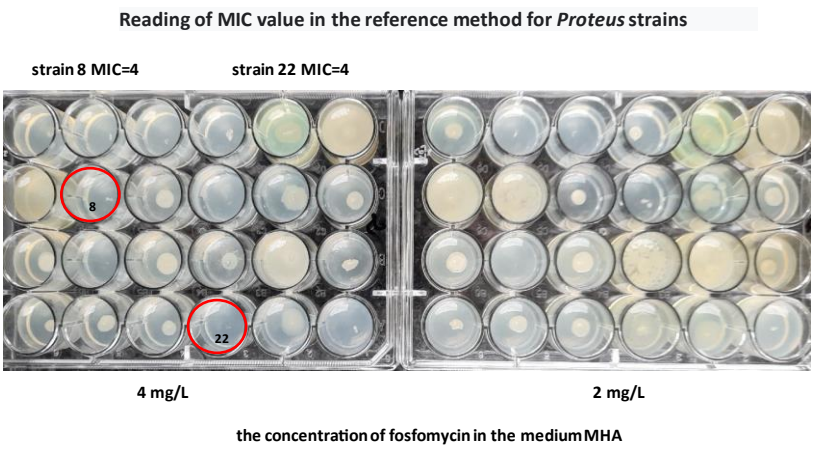

**Figure S2**. Reading the MIC value in the reference method for *Proteus* spp. strains

## 1. Statistical analysis explanation

### *1.1 Susceptibility Testing*

Statistical tests were performed using Scipy[1] library in Python programming language. The differences in susceptibility between the groups (Strains, Materials, Resistance Mechanism) were compared with *Chi-square test of independence of variables*[2]. The test results were considered significant for ***p-value*** lower than 0.05.

### *1.2 Methodology Explanation*

For all of the groups compared (Strains, Materials, Resistance Mechanism) the same methodology was followed. Contingency tables were created for each relevant pair of the groups mentioned. An example contingency table[3] for *Klebsiella spp.* vs *E.coli* is shown in **Table S1.** Based on contingency tables, $^2$ *(Chi-square)* statistic was calculated.

**Table S1.** *Klebsiella spp. vs E.coli* Contingency Table

| | **S** | **R** |
|---|---|---|
| **Klebsiella** spp. | 165 | 85 |
| **E.coli** | 170 | 11 |

### *1.3 Results Explained*

For each of the groups analyzed (Strains, Materials, Resistance Mechanism), for each pair tested (Strain 1 vs Strain 2, Material 1 vs Material 2 etc.) the same Null Hypothesis can be formulated.

**$H_0$**

Proportion of susceptible observations is independent of the Strain/Material/Mechanism type (on a pair level)

If p-value obtained is lower than our significance level = 0.05, then we reject the Null Hypothesis. The Alternative Hypothesis is as follows.

**$H_1$**

Proportion of susceptible observations is different for different type of Strain/Material/Mechanism (on a pair level)

This means, for the pairs tested where our ***p-value*** is lower than 0.05, we might not rule out that there is significant difference in susceptibility between them.

[1] https://scipy.org/citing-scipy/

[2] https://docs.scipy.org/doc/scipy/reference/generated/scipy.stats.chi2_contingency.html

[3] https://sphweb.bumc.bu.edu/otlt/mph-modules/bs/bs704_hypothesistesting-chisquare/bs704_hypothesistesting-chisquare_print.html