

## Supplementary Information

**Table S1:** Comparative analysis of antimicrobial activity of different antibiotics in combination with polyamines against *P. aeruginosa*

| Intergroup comparison      |     |       |          |         |                | Pairwise Comparison |                |
|----------------------------|-----|-------|----------|---------|----------------|---------------------|----------------|
| Different Antibiotic       |     |       |          |         |                |                     |                |
|                            |     | Mean  | Std. Dev | 21.8    | 0.000**        |                     |                |
|                            | Tet | 0.73  | 0.05     |         |                |                     |                |
|                            | Rif | 0.27  | 0.46     |         |                |                     |                |
|                            | Car | 1.47  | 0.11     |         |                |                     |                |
|                            | Str | 1.7   | 0.1      |         |                |                     |                |
| Tetracylin (Tet) -30µg     |     |       |          |         |                |                     |                |
|                            |     | Mean  | Std. Dev | F value | <i>p value</i> |                     | <i>p value</i> |
| Ab                         |     | 0.73  | 0.05     | 26.78   | 0.00**         | Tet Vs Orn          | 0.008**        |
| Orn                        |     | 1.4   | 0.09     |         |                | Tet Vs Put          | 0.011*         |
| Put                        |     | 1.7   | 0.18     |         |                | Tet Vs Spd          | 0.031*         |
| Spd                        |     | 1.07  | 0.1      |         |                | Tet Vs Spm          | 0.001**        |
| Spm                        |     | 1.4   | 0.09     |         |                |                     |                |
| Rifampicin (Rif) -5µg      |     |       |          |         |                |                     |                |
|                            |     | Mean  | Std. Dev | F value | <i>p value</i> | <i>p value</i>      |                |
| AB                         |     | 0.67  | 0.41     | 3.53    | 0.04*          | Rif Vs Orn          | 0.173          |
| Orn                        |     | 0.53  | 0.42     |         |                | Rif Vs Put          | 0.5            |
| Put                        |     | 0.267 | 0.41     |         |                | Rif Vs Spd          | 0.059          |
| Spd                        |     | 1.07  | 0.1      |         |                | Rif Vs Spm          | 0.039*         |
| Spm                        |     | 1     | 0.09     |         |                |                     |                |
| Carbenicillin (Car) -100µg |     |       |          |         |                |                     |                |
|                            |     | Mean  | Std. Dev | F value | <i>p value</i> |                     | <i>p value</i> |
| AB                         |     | 1.47  | 0.10     | 20.97   | 0.002**        | Car Vs Orn          | 0.007**        |
| Orn                        |     | 2.23  | 0.10     |         |                | Car Vs Put          | 0.001*         |
| Put                        |     | 2.2   | 0.15     |         |                | Car Vs Spd          | 0.317          |
| Spd                        |     | 1.4   | 0.09     |         |                | Car Vs Spm          | 0.007**        |
| Spm                        |     | 2.2   | 0.09     |         |                |                     |                |
| Streptomycin (Str) - 10µg  |     |       |          |         |                |                     |                |
|                            |     | Mean  | Std. Dev | F value | <i>p value</i> |                     | <i>p value</i> |
| AB                         |     | 1.7   | 0.08     | 4.58    | 0.02*          | Str Vs Orn          | 0.017*         |
| Orn                        |     | 2     | 0.15     |         |                | Str Vs Put          | 0.007**        |
| Put                        |     | 1.97  | 0.10     |         |                | Str Vs Spd          | 0.005**        |
| Spd                        |     | 2.033 | 0.05     |         |                | Str Vs Spm          | 0.018*         |
| Spm                        |     | 1.87  | 0.05     |         |                |                     |                |

\*Indicates statistically significant,

\*\*Indicates statistically highly significant,

**Tables S2:** Comparative analysis of antimicrobial activity of different antibiotics in combination with polyamines against *K. pneumonia*

| Intergroup comparison   |      |          |         |                | Pairwise Comparison |                |
|-------------------------|------|----------|---------|----------------|---------------------|----------------|
| Antibiotic              |      |          |         |                |                     |                |
|                         | Mean | Std. Dev | F value | <i>p value</i> |                     |                |
| Tet                     | 2.06 | 0.40     | 6.52    | 0.015*         |                     |                |
| Rif                     | 1.3  | 0.26     |         |                |                     |                |
| Car                     | 0.87 | 0.75     |         |                |                     |                |
| Str                     | 2.4  | 0.3      |         |                |                     |                |
|                         |      |          |         |                |                     |                |
| Tetracylin-30mcg        |      |          |         |                |                     |                |
|                         | Mean | Std. Dev | F value | <i>p value</i> | <i>p value</i>      |                |
| AB                      | 2.07 | 0.22     | 1.71    | 0.223          | Tet Vs Orn          | 0.007**        |
| Orn                     | 2.33 | 0.24     |         |                | Tet Vs Put          | 0.010*         |
| Put                     | 2.46 | 0.28     |         |                | Tet Vs Spd          | 0.149          |
| Spd                     | 1.9  | 0.21     |         |                | Tet Vs Spm          | 0.009**        |
| Spm                     | 2.2  | 0.10     |         |                |                     |                |
| B. Rifampicin-5mcg      |      |          |         |                |                     |                |
|                         | Mean | Std. Dev | F value | <i>p value</i> |                     |                |
| AB                      | 1.3  | 0.26     | 3.02    | 0.041*         | Rif Vs Orn          | 0.051*         |
| Orn                     | 1.9  | 0.10     |         |                | Rif Vs Put          | 0.008**        |
| Put                     | 2.1  | 0.10     |         |                | Rif Vs Spd          | 0.133          |
| Spd                     | 1.67 | 0.25     |         |                | Rif Vs Spm          | 0.152          |
| Spm                     | 1.93 | 0.57     |         |                |                     |                |
| C. Carbenicillin-100mcg |      |          |         |                |                     |                |
|                         | Mean | Std. Dev | F value | <i>p value</i> |                     | <i>p value</i> |
| AB                      | 0.87 | 0.13     | 1.34    | 0.321          | Car Vs Orn          | 0.159          |
| Orn                     | 1.07 | 0.14     |         |                | Car Vs Put          | 0.063          |
| Put                     | 2.1  | 0.10     |         |                | Car Vs Spd          | 0.097          |
| Spd                     | 0.7  | 0.07     |         |                | Car Vs Spm          | 0.099          |
| Spm                     | 1.53 | 0.14     |         |                |                     |                |
| D. Streptomycin-10mcg   |      |          |         |                |                     |                |
|                         | Mean | Std. Dev | F value | <i>p value</i> |                     | <i>p value</i> |
| AB                      | 2.4  | 0.30     | 0.52    | 0.721          | Str Vs Orn          | 0.418          |
| Orn                     | 2.47 | 0.60     |         |                | Str Vs Put          | 0.018*         |
| Put                     | 2.7  | 0.36     |         |                | Str Vs Spd          | 0.031*         |
| Spd                     | 2.73 | 0.37     |         |                | Str Vs Spm          | 0.010*         |
| Spm                     | 2.8  | 0.40     |         |                |                     |                |
|                         |      |          |         |                |                     |                |

\*Indicates statistically significant,

\*\*Indicates statistically highly significant,

**Tables S3:** Comparative analysis of antimicrobial activity of different antibiotics in combination with polyamine against *B. cereus*

| Intergroup comparison |      |          |          |                | Pairwise Comparison |                |
|-----------------------|------|----------|----------|----------------|---------------------|----------------|
| Different Antibiotic  |      |          |          |                |                     |                |
|                       | Mean | Std. Dev | F value  | <i>p value</i> |                     |                |
|                       | 2.6  | 0.05     | 19.5     | 0.000          |                     |                |
|                       | 1.5  | 0.1      |          |                |                     |                |
|                       | 1.33 | 0.15     |          |                |                     |                |
|                       | 1.43 | 0.32     |          |                |                     |                |
|                       |      |          |          |                |                     |                |
| Tetracylin-30mcg      |      |          |          |                |                     |                |
|                       | Mean | Std. Dev | F value  | <i>p value</i> |                     |                |
| AB                    | 1.80 | 0.10     | 12.54    | 0.000**        | Tet Vs Orn          | 0.004**        |
| Orn                   | 2.17 | 0.12     |          |                | Tet Vs Put          | 0.033*         |
| Put                   | 2.33 | 0.21     |          |                | Tet Vs Spd          | 0.134          |
| Spd                   | 1.67 | 0.21     |          |                | Tet Vs Spm          | 0.001**        |
| Spm                   | 2.43 | 0.15     |          |                |                     |                |
| Rifampicin-5mcg       |      |          |          |                |                     |                |
|                       | Mean | Std. Dev | F value  | <i>p value</i> |                     | <i>p value</i> |
| AB                    | 1.47 | 0.32     | 1.94     | 0.180          | Rif Vs Orn          | 0.264          |
| Orn                   | 1.67 | 0.15     |          |                | Rif Vs Put          | 0.117          |
| Put                   | 1.83 | 0.06     |          |                | Rif Vs Spd          | 0.06           |
| Spd                   | 1.80 | 0.10     |          |                | Rif Vs Spm          | 0.159          |
| Spm                   | 1.70 | 0.17     |          |                |                     |                |
| Carbenicillin-100mcg  |      |          |          |                |                     |                |
|                       | Mean | Std. Dev | F value  | <i>p value</i> |                     | <i>p value</i> |
| AB                    | 1.13 | 0.15     | 13       | 0.000**        | Car Vs Orn          | 0.015*         |
| Orn                   | 1.50 | 0.17     |          |                | Car Vs Put          | 0.037*         |
| Put                   | 1.53 | 0.06     |          |                | Car Vs Spd          | 0.5            |
| Spd                   | 1.13 | 0.06     |          |                | Car Vs Spm          | 0.016*         |
| Spm                   | 1.60 | 0.00     |          |                |                     |                |
| Streptomycin-10mcg    |      |          |          |                |                     |                |
|                       | Mean | Std. Dev | F value  | <i>p value</i> |                     | <i>p value</i> |
| AB                    | 2.40 | 0.10     | 6.022727 | 0.009**        | Str Vs Orn          | 0.004*         |
| Orn                   | 2.73 | 0.12     |          |                | Str Vs Put          | 0.015*         |
| Put                   | 2.77 | 0.06     |          |                | Str Vs Spd          | 0.015*         |
| Spd                   | 2.77 | 0.21     |          |                | Str Vs Spm          | 0.002**        |
| Spm                   | 2.83 | 0.06     |          |                | Tet Vs Orn          |                |

\*Indicates statistically significant,

\*\*Indicates statistically highly significant,

**Tables S4:** Comparative analysis of antimicrobial activity of different antibiotics in combination with polyamine against *S. aureus*

| Intergroup comparison   |      |          |         |                | Pairwise Comparison |                |
|-------------------------|------|----------|---------|----------------|---------------------|----------------|
| Different Antibiotic    |      |          |         |                |                     |                |
|                         | Mean | Std. Dev | F value | <i>p value</i> |                     |                |
| Tet                     | 1.8  | 0.1      |         |                |                     |                |
| Rif                     | 1.46 | 0.32     |         |                |                     |                |
| Car                     | 1.33 | 0.15     | 23.87   | 0.000          |                     |                |
| Str                     | 2.4  | 0.1      |         |                |                     |                |
|                         |      |          |         |                |                     |                |
| Tetracylin-30mcg        |      |          |         |                | Pairwise Comparison |                |
|                         | Mean | Std. Dev | F value | P value        |                     | <i>p value</i> |
| AB                      | 2.37 | 0.057735 | 47.18   | 0.000**        | Tet Vs Orn          | 0.011*         |
| Orn                     | 2.8  | 0.1      |         |                | Tet Vs Put          | 0.001**        |
| Put                     | 2.9  | 0.1      |         |                | Tet Vs Spd          | 0.028*         |
| Spd                     | 2.1  | 0.1      |         |                | Tet Vs Spm          | 0.010*         |
| Spm                     | 2.77 | 0.057735 |         |                |                     |                |
|                         |      |          |         |                |                     |                |
| A. Rifampicin-5mcg      |      |          |         |                |                     |                |
|                         | Mean | Std. Dev | F value | P value        |                     |                |
| AB                      | 1.5  | 0.1      | 6.68    | 0.006**        | Rif Vs Orn          | 0.009**        |
| Orn                     | 2.13 | 0.23094  |         |                | Rif Vs Put          | 0.5            |
| Put                     | 1.5  | 0.264575 |         |                | Rif Vs Spd          | 0.002**        |
| Spd                     | 2.03 | 0.152753 |         |                | Rif Vs Spm          | 0.05*          |
| Spm                     | 2.03 | 0.251661 |         |                |                     |                |
|                         |      |          |         |                |                     |                |
| B. Carbenicillin-100mcg |      |          |         |                |                     |                |
|                         | Mean | Std. Dev | F value | P value        |                     |                |
| AB                      | 1.33 | 0.152753 | 3.079   | 0.067*         | Car Vs Orn          | 0.134          |
| Orn                     | 1.53 | 0.251661 |         |                | Car Vs Put          | 0.074          |
| Put                     | 1.6  | 0.2      |         |                | Car Vs Spd          | 0.099          |
| Spd                     | 1.1  | 0.1      |         |                | Car Vs Spm          | 0.5            |
| Spm                     | 1.27 | 0.305505 |         |                |                     |                |
|                         |      |          |         |                |                     |                |
| C. Streptomycin-10mcg   |      |          |         |                |                     |                |
|                         | Mean | Std. Dev | F value | P value        |                     |                |
| AB                      | 1.77 | 0.550757 | 2.68    | 0.093679       | Str Vs Orn          | 0.092          |
| Orn                     | 2.27 | 0.305505 |         |                | Str Vs Put          | 0.037*         |
| Put                     | 2.6  | 0.360555 |         |                | Str Vs Spd          | 0.024*         |
| Spd                     | 2.67 | 0.378594 |         |                | Str Vs Spm          | 0.153          |
| Spm                     | 2.3  | 0.2      |         |                |                     |                |
|                         |      |          |         |                |                     |                |

\*Indicates statistically significant,

\*\*Indicates statistically highly significant,