**Table 2.** Antibiotic resistance gene products enriched by strain origin (*p*<0.01 and FDR *q*<0.1) for *B. cereus* (Panel A) and *S. aureus* (Panel B) for origins with (n≥3). Percentage of strains from the respective origins encoding each function are listed. Gene products that were more frequently present in ISS strains compared to soil- and/or putatively commensal human-derived strains are displayed in bold font.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| (A) *B. cereus* ARG product | Antibiotic class | BE-ISS (n=8) | Soil (n=11) | Human (n=33) | FDR *q* |
| Metallothiol transferase FosB 2 | Fosfomycin | 0.0 | 45.5 | 84.8 | 0.001 |
| UDP-4-amino-4-deoxy-L-arabinose--oxoglutarate aminotransferase | Polymyxin | 0.0 | 54.5 | 0.0 | 0.005 |
| **Multidrug resistance protein EbrB** | **Multidrug** | **100.0** | **27.3** | **57.6** | **0.045** |
| Beta-lactamase 3 | Penicillin | 0.0 | 63.6 | 18.2 | 0.077 |
| Cadmium res. transcr. reg. protein CadC | \*Heavy metal | 0.0 | 9.1 | 24.2 | 0.077 |
| **Multidrug resistance protein Stp** | **Multidrug** | **100.0** | **63.6** | **100.0** | **0.080** |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| (B) *S. aureus* ARG product | Antibiotic class | BE-ISS (n=21) | BE-Earth (n=3) | Human (n=24) | H-MRSA (n=55) | FDR *q* |
| Beta-lactam-inducible penicillin-binding protein | Penicillin | 0 | 0 | 8.3 | 96.4 | <0.001 |
| Methicillin resistance mecR1 protein | Penicillin | 0 | 0 | 8.3 | 90.9 | <0.001 |
| Aminoglycoside 3'-phosphotransferase | Aminoglycoside | 0 | 33.3 | 0 | 58.2 | <0.001 |
| Metallothiol transferase FosB | Fosfomycin | 38.1 | 66.7 | 62.5 | 100 | <0.001 |
| Streptogramin A acetyltransferase | Streptogramin | 23.8 | 0 | 50 | 87.3 | <0.001 |
| Methicillin resistance regulatory protein MecI | Penicillin | 0 | 0 | 0 | 34.5 | <0.001 |
| Bleomycin resistance protein | Antitumor | 0 | 0 | 4.2 | 30.9 | 0.006 |
| **Cadmium resistance transcr. regulatory protein** | **\*Heavy metal** | **95.2** | **66.7** | **54.2** | **92.7** | **0.007** |
| Kanamycin nucleotidyltransferase | Aminoglycoside | 0 | 0 | 8.3 | 30.9 | 0.017 |
| Macrolide export ATP-binding/permease protein MacB | Macrolide | 4.8 | 0 | 29.1 | 43.6 | 0.031 |
| **Beta-lactamase** | **Penicillin** | **100** | **100** | **70.8** | **96.4** | **0.036** |