**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). 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 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 | Fofomycin | 0.0 | 45.5 | 84.8 | 0.001 |
| UDP-4-amino-4-deoxy-L-arabinose--oxoglutarate aminotransferase | Polymixin | 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=32) | H-MRSA (n=47) | FDR *q* |
| Aminoglycoside 3'-phosphotransferase | Aminoglycoside | 0.0 | 33.3 | 12.5 | 59.6 | <0.001 |
| Metallothiol transferase FosB | Fosfomycin | 38.1 | 66.7 | 71.9 | 100.0 | <0.001 |
| Methicillin resistance mecR1 protein | Penicillin | 0 | 0 | 28.1 | 91.5 | <0.001 |
| Streptogramin A acetyltransferase | Streptogramin | 23.8 | 0 | 62.5 | 85.1 | <0.001 |
| Methicillin resistance regulatory protein MecI | Penicillin | 0 | 0 | 3.1 | 38.3 | <0.001 |
| Macrolide export ATP-binding/permease protein MacB | Macrolide | 4.8 | 0 | 21.9 | 51.1 | 0.003 |
| Bleomycin resistance protein | Antitumor | 0 | 0 | 6.3 | 34 | 0.004 |
| Kanamycin nucleotidyltransferase | Aminoglycoside | 0.0 | 0.0 | 9.4 | 34.0 | 0.008 |
| **Cadmium resistance transcr. regulatory protein** | **\*Heavy metal** | **95.2** | **66.7** | **62.5** | **93.6** | **0.025** |
| **Beta-lactamase** | **Penicillin** | **100** | **100** | **75** | **97.9** | **0.029** |
| **Streptomycin 3'-adenylyltransferase** | **Aminoglycoside** | **19.0** | **0.0** | **6.3** | **38.3** | **0.058** |