**Supplementary Table 7. Individual metabolite response common between human *S. aureus* sepsis and mice infected with MRSA and   
MSSA, and human *S. aureus* sepsis and in vitro grown MRSA and MSSA.**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Metabolitea | Change in concentration with effective treatmentb | Three independent *in vitro* experiments | | | Mice infection | | | Human *S. aureus* sepsis | | |
|  |  | **RIc** | **p-valuesd** | **w\*e** | **RIc** | **p-valuesd** | **w\*e** | **RIc** | **p-valuesd** | **w\*e** |
| 3-hydroxy-butanoic acid | ↑ |  |  |  | 1172 | \* | \* | 1176 |  | \* |
| Alanine | ↑ | 1109/1105/1111 | \*\*/ \*\*/ \*\*\* | \*/\*/\* |  |  |  | 1123 |  | \* |
| Carbohydrate | ↑ | 2020/2019/2015 | \*\*\*/ \*\*\*/ \*\*\* | \*/\*/\* | 1950 | \*\*\* | \* | 2020 |  | \* |
| Cholesterol | ↓ |  |  |  | 3155 | \*\* | \* | 3152 |  | \* |
| Creatinine | ↓ |  |  |  | 1549 |  | \* | 1549 |  | \* |
| Cysteine | ↓ | 1552/1551/1550 | \*/ \*/ \*\*\* | \*/\*/\* |  |  |  | 1552 |  | \* |
| Erythritol | ↓ |  |  |  | 1501 |  | \* | 1503 |  | \* |
| Erythrose | ↑ |  |  |  | 1449 | \*\* | \* | 1450 |  | \* |
| Glutamine | ↑ | 1770/1769/1767 | \*\*\*/ \*\*\*/ \*\*\* | \*/\*/\* |  |  |  | 1769 | \* | \* |
| Glycerol | ↑ |  |  |  | 1277 | \*\* | \* | 1280 |  | \* |
| Glycerol-3-phosphate | ↓ |  |  |  | 1754 | \*\*\* | \* | 1753 |  | \* |
| Homoserine | ↑ | 1454/1454/1453 | \*\*\*/\*\*\*/ \*\* | \*/\*/\* |  |  |  | 1454 | \* | \* |
| Inositol | ↓ |  |  |  | 2080 |  | \* | 2081 |  | \* |
| Linoleic acid | ↑ |  |  |  | 2208 |  | \* | 2208 |  | \* |
| Ornithine | ↑ | 1612/1611/1610 | \*\*\*/ \*\*/ \*\* | \*/\*/\* |  |  |  | 1611 | \* | \* |
| Ribitol | ↓ | 1719/1717/1714 | / / \*\* | \*/\*/\* | 1696 |  | \* | 1712 |  | \* |
| Ribose | ↓ | 1670/1670/1666 | / / \*\* | \*/\*/\* |  |  |  | 1670 |  | \* |
| Serine | ↑ | 1362/1360/1359 | \*\*\*/ \*\*\*/ \*\*\* | \*/\*/\* | 1358 | \*\* | \* | 1363 |  | \* |
| Threonic acid | ↓ |  |  |  | 1556 |  | \* | 1538 |  | \* |
| Threonine | ↓ |  |  |  | 1383 | \*\* | \* | 1384 |  | \* |
| Tryptophan | ↑ | 2207/2207/2207 | \*\*\*/ \*\*\*/ | \*/\*/\* |  |  |  | 2206 |  | \* |
| Unid D | ↓ | 1380/1380/1379 | \*\*/ \*\*/\*\* | \*/\*/\* |  |  |  | 1380 |  | \* |
| Unid J | ↑ | 1631/1630/1629 | / \*/ \* | \*/\*/\* |  |  |  | 1630 |  | \* |
| Unid Y | ↑ |  |  |  | 1702 | \*\*\* | \* | 1702 |  | \* |
| Uric acid | ↑ | 2091/2091/2090 | \*\*/ / \* | \*/\*/\* |  |  |  | 2093 |  | \* |

aSignificant metabolites common between human and *in vitro* samples and human and mice samples. (A metabolite is considered significant with either a 0.04 >w\* > 0.04 or a p-value <0.05.)

bRefers to response to antibiotic treatment, where ↑/↓ indicates a higher/lower metabolite concentration in samples with effective treatment compared to samples with ineffective treatment (for *in vitro* experiments and mice infection) and in late time point, 144h-2weeks after admittance, compared to acute phase infection samples, 0-24h after admittance (for human sepsis).

cRetention index for all metabolites.

dSignificance regarding p-values is stated with \* for p <0.05, \*\* for p <0.01 and \*\*\* for p <0.001.

eSignificance regarding w\* is stated with \* for -0.04 >w\* >0.04.