Table S2. List of metabolites obtained from *R. alkalitolerans* in npH conditions in all the three light intensities of 30, 250 and 500 µmol photons m-2s-1.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Metabolites** | **Abbreviation** | **Chemical**  **nature of metabolite** | **npH 30** | **SE** | **npH 250** | **SE** | **p-values** | **p-values** | **Log2 Fold Change** |
| 2,3-Butanediol | BTD | Alcohol | 1.409735 | 0.097948 | 5.801287 | 0.633084 | 0.016496 | Significant | 2.040949 |
| Propanoic acid | PrA | Carboxylic acid | 54.79268 | 23.22619 | 57.01491 | 3.213384 | 0.934993 | NS | 0.057356 |
| Lactic Acid | LA | Carboxylic acid | 579.8166 | 3.960608 | 659.7687 | 18.88715 | 0.072726 | NS | 0.186364 |
| Glycolic acid | GcA | Carboxylic acid | 5.708214 | 0.108908 | 4.150389 | 0.343709 | 0.053501 | NS | -0.45979 |
| Oxalic acid | OA | Dicarboxylic acid | 43.93955 | 1.603318 | 34.24294 | 4.832284 | 0.201717 | NS | -0.35971 |
| Pyruvic acid oxime | PAO | Carboxylic acid | 0.774779 | 0.398505 | 1.328167 | 0.035247 | 0.288289 | NS | 0.777579 |
| 3-Hydroxybutyric acid | 3HBA | Carboxylic acid | 27.25944 | 0.852472 | 19.13462 | 0.773263 | 0.037635 | Significant | -0.51057 |
| Phosphoric acid | PA | Ions | 185.033 | 30.5409 | 211.3702 | 18.20372 | 0.203819 | NS | 0.19199 |
| 2-Ketoisocaproic acid | 2-KiA | Carboxylic acid | 3.208771 | 0.366881 | 1.266001 | 0.226819 | 0.074766 | NS | -1.34174 |
| Butane dioic acid | BdA | Dicarboxylic acid | 214.68 | 9.191159 | 253.0016 | 9.076173 | 0.137934 | NS | 0.236959 |
| Methylsuccinic acid | MSA | Dicarboxylic acid | 8.18899 | 0.316359 | 8.61802 | 0.379067 | 0.595111 | NS | 0.073671 |
| Glyceric acid | GrA | Carboxylic acid | 2.221431 | 0.109134 | 1.903743 | 1.145086 | 0.815072 | NS | -0.22265 |
| Malic acid, | MA | Dicarboxylic acid | 627.7487 | 3.247768 | 189.0902 | 7.453216 | 0.000214 | Significant | -1.73111 |
| Pentanedioic acid | PdA | Dicarboxylic acid | 62.01089 | 2.550614 | 68.76598 | 2.653088 | 0.305803 | NS | 0.149173 |
| carbamic acid | CA | Monocarboxylic acid | 8.313011 | 0.825945 | 15.75453 | 5.121481 | 0.225501 | NS | 0.922324 |
| Citric acid | CiA | Tricarboxylic acid | 31.96101 | 1.195357 | 37.54876 | 1.983685 | 0.220421 | NS | 0.232452 |
| Hippuric acid | HA | Carboxylic acid | 691.6873 | 248.1974 | 199.1942 | 21.85167 | 0.171157 | NS | -1.79594 |
| 3-Hydroxyhippuric acid | 3HHA | Carboxylic acid | 9.057928 | 1.242673 | 5.181388 | 0.955398 | 0.218132 | NS | -0.80584 |
| Palmitelaidic acid | PtA | Fatty acid | 6.008523 | 0.720174 | 5.046986 | 0.83883 | 0.042244 | Significant | -0.25159 |
| 9-Octadecenoic acid | 9-OA | Fatty acid | 504.9582 | 31.0164 | 478.2076 | 35.94346 | 0.040107 | Significant | -0.07853 |
| Stearic acid | SA | Fatty acid | 82.72508 | 5.005181 | 72.14441 | 12.04737 | 0.272198 | NS | -0.19744 |
| 11-Methyloctadec-12-enoic acid | 11-Mo-12-A | Fatty acid | 25.85178 | 13.01421 | 62.76773 | 6.109338 | 0.123222 | NS | 1.27976 |
| 9-Octadecenamide | 9-Oda | Fatty acid | 11.26269 | 5.914577 | 8.760622 | 2.246176 | 0.768796 | NS | -0.36245 |
| L-Valine | L-Val | Amino acid | 355.7345 | 5.768817 | 47.87035 | 10.29073 | 0.000267 | Significant | -2.8936 |
| L-Alanine | L-Aln | Amino acid | 570.924 | 13.288 | 167.0639 | 7.273809 | 0.00131 | Significant | -1.7729 |
| Glycine | Gln | Amino acid | 76.0603 | 8.060963 | 48.6058 | 2.539371 | 0.106205 | NS | -0.64602 |
| Cresol | Crs | Phenol | 2.768067 | 0.538756 | 1.675832 | 0.308831 | 0.309974 | NS | -0.724 |
| L-Threonine | L-Thr | Amino acid | 84.58531 | 1.592313 | 32.57404 | 1.125672 | 0.002487 | Significant | -1.37668 |
| L-Aspartic acid | L-Asp | Amino acid | 24.63018 | 1.596615 | 59.94325 | 25.91624 | 0.307712 | NS | 1.28317 |
| L-Glutamic acid, | L-Glu | Amino acid | 964.1098 | 12.37527 | 249.5848 | 206.137 | 0.071807 | NS | -1.94967 |
| Phenylalanine | Phe | Amino acid | 5.600928 | 1.605798 | 251.9253 | 248.7161 | 0.424999 | NS | 5.491186 |
| L-Lysine | L-Lys | Amino acid | 44.74955 | 0.810753 | 24.7501 | 2.12392 | 0.004351 | Significant | -0.85444 |
| Monomethyl succinate | MmS | Ester | 4.990207 | 0.036267 | 1.835828 | 0.217523 | 0.004062 | Significant | -1.44267 |
| Ethanolamine | EtA | Alcohol amine | 8.206175 | 0.745722 | 5.1977 | 0.502126 | 0.077276 | NS | -0.65884 |
| Silanol | Sil | Alcohol | 1041.418 | 520.7213 | 1928.56 | 157.4365 | 0.181107 | NS | 0.888975 |
| Glycerol | Gly | Alcohol | 148.8599 | 10.16976 | 153.3896 | 11.62564 | 0.511379 | NS | 0.043246 |
| Homoserine | Hse | Amino acid | 30.18228 | 1.190274 | 12.50417 | 0.575241 | 0.004552 | Significant | -1.27129 |
| Tromethamine | Tma | Amino acid | 6135.114 | 318.2112 | 4676.345 | 1044.344 | 0.380353 | NS | -0.39171 |
| L-5-Oxoproline | L-5-Oxp | Amino acid derivative | 116.8805 | 1.181182 | 119.8237 | 10.80784 | 0.814075 | NS | 0.035879 |
| Putrescine | Put | Diamine | 14.13135 | 0.634797 | 80.55057 | 0.650829 | 0.000317 | Significant | 2.510996 |
| DL-Ornithine | Orn | Non protein amino acid | 7.171451 | 0.420484 | 8.112238 | 0.15383 | 0.198244 | NS | 0.177835 |
| d-Erythrotetrofuranose | Etf | Sugar | 10.38228 | 0.503848 | 12.4281 | 0.49104 | 0.140418 | NS | 0.259483 |
| Dibutyl phthalate | DP | Ester | 23.71863 | 1.018388 | 19.29415 | 4.031969 | 0.468134 | NS | -0.29786 |
| Phytol | Phy | Diterpene alcohol | 30.59779 | 4.655469 | 9.030261 | 0.222473 | 0.042316 | Significant | -1.76059 |
| Monopalmitin | MoP | Alcohol | 34.26125 | 0.629424 | 33.25608 | 3.862634 | 0.832663 | NS | -0.04296 |
| Monooleoylglycerol | MoG | Monoglyceride | 25.18107 | 2.85037 | 16.26352 | 1.259287 | 0.159159 | NS | -0.6307 |
| Monooleoylglycerol | MoG | Monoglyceride | 99.30444 | 16.60915 | 220.9071 | 153.4979 | 0.538141 | NS | 1.153509 |
| Glycerol monostearate | GMs | Ester | 46.11097 | 6.516173 | 35.3797 | 3.890078 | 0.410151 | NS | -0.38219 |
| 5'-Methylthioadenosine | MtA | Purine | 5.007701 | 6.516173 | 23.83913 | 8.131651 | 0.073302 | NS | 2.251111 |
|  | | | | | | | | | |
| **Metabolites** | **Abbreviation** | **Chemical**  **nature of metabolite** | **npH 30** | **SE** | **npH 500** | **SE** | **p-values** | **p-values** | **Log2 Fold Change** |
| 2,3-Butanediol | BTD | Alcohol | 1.409735 | 0.097948 | 6.535483836 | 0.995993491 | 0.032326547 | Significant | 2.212870135 |
| Propanoic acid | PrA | Carboxylic acid | 54.79268 | 23.22619 | 22.44428563 | 2.352630726 | 0.29653503 | NS | -1.287634927 |
| Lactic Acid | LA | Carboxylic acid | 579.8166 | 3.960608 | 653.5061379 | 27.63104427 | 0.119869831 | NS | 0.172604203 |
| Glycolic acid | GcA | Carboxylic acid | 5.708214 | 0.108908 | 4.753671989 | 0.376746646 | 0.188279571 | NS | -0.263997008 |
| Oxalic acid | OA | Dicarboxylic acid | 43.93955 | 1.603318 | 4.691965338 | 0.253734354 | 0.001797123 | Significant | -3.227255868 |
| Pyruvic acid oxime | PAO | Carboxylic acid | 0.774779 | 0.398505 | 0.809223503 | 0.039586028 | 0.941207792 | NS | 0.062752656 |
| 3-Hydroxybutyric acid | 3HBA | Carboxylic acid | 27.25944 | 0.852472 | 24.65186909 | 1.273503652 | 0.072229669 | NS | -0.145058903 |
| Phosphoric acid | PA | Ions | 185.033 | 30.5409 | 286.2435226 | 56.39253836 | 0.101272896 | NS | 0.629460664 |
| 2-Ketoisocaproic acid | 2-KiA | Carboxylic acid | 3.208771 | 0.366881 | 0.935390846 | 0.111509558 | 0.012500407 | Significant | -1.778379769 |
| Butane dioic acid | BdA | Dicarboxylic acid | 214.68 | 9.191159 | 256.8326082 | 10.02921287 | 0.127746566 | NS | 0.258640391 |
| Methylsuccinic acid | MSA | Dicarboxylic acid | 8.18899 | 0.316359 | 5.883094159 | 0.352074324 | 0.066460153 | NS | -0.477110396 |
| Glyceric acid | GrA | Carboxylic acid | 2.221431 | 0.109134 | 1.918901592 | 0.124102995 | 0.275122579 | NS | -0.211208626 |
| Malic acid, | MA | Dicarboxylic acid | 627.7487 | 3.247768 | 307.0164817 | 4.144772609 | 6.11175E-05 | Significant | -1.031871016 |
| Pentanedioic acid | PdA | Dicarboxylic acid | 62.01089 | 2.550614 | 42.60445442 | 1.434151128 | 0.004670551 | Significant | -0.541517221 |
| carbamic acid | CA | Monocarboxylic acid | 8.313011 | 0.825945 | 15.68331106 | 8.131111945 | 0.496541198 | NS | 0.915787209 |
| Citric acid | CiA | Tricarboxylic acid | 31.96101 | 1.195357 | 22.91523514 | 0.698512023 | 0.030675865 | Significant | -0.48000569 |
| Hippuric acid | HA | Carboxylic acid | 691.6873 | 248.1974 | 113.0478261 | 15.43943467 | 0.131447362 | NS | -2.613186815 |
| 3-Hydroxyhippuric acid | 3HHA | Carboxylic acid | 9.057928 | 1.242673 | 4.071879664 | 2.037142743 | 0.078980018 | NS | -1.153486144 |
| Palmitelaidic acid | PtA | Fatty acid | 6.008523 | 0.720174 | 6.431363935 | 0.953480691 | 0.687554564 | NS | 0.098114269 |
| 9-Octadecenoic acid | 9-OA | Fatty acid | 504.9582 | 31.0164 | 560.7821755 | 69.77365487 | 0.361758243 | NS | 0.151276463 |
| Stearic acid | SA | Fatty acid | 82.72508 | 5.005181 | 92.67864925 | 5.081850318 | 0.006512691 | Significant | 0.163912301 |
| 11-Methyloctadec-12-enoic acid | 11-Mo-12-A | Fatty acid | 25.85178 | 13.01421 | 94.21761665 | 23.15530577 | 0.173553612 | NS | 1.865733399 |
| 9-Octadecenamide | 9-Oda | Fatty acid | 11.26269 | 5.914577 | 6.49730186 | 0.564231221 | 0.534185307 | NS | -0.793638919 |
| L-Valine | L-Val | Amino acid | 355.7345 | 5.768817 | 30.34236636 | 2.360559413 | 0.000617993 | Significant | -3.551395339 |
| L-Alanine | L-Aln | Amino acid | 570.924 | 13.288 | 154.8696655 | 7.013551195 | 0.001401764 | Significant | -1.882244205 |
| Glycine | Gln | Amino acid | 76.0603 | 8.060963 | 74.09816679 | 3.481548778 | 0.716372781 | NS | -0.037705713 |
| Cresol | Crs | Phenol | 2.768067 | 0.538756 | 0.675583569 | 0.379396096 | 0.030436621 | Significant | -2.034672731 |
| L-Threonine | L-Thr | Amino acid | 84.58531 | 1.592313 | 48.53592133 | 0.477854315 | 0.002985643 | Significant | -0.801354314 |
| L-Aspartic acid | L-Asp | Amino acid | 24.63018 | 1.596615 | 54.16000122 | 18.51893301 | 0.279798798 | NS | 1.136800337 |
| L-Glutamic acid, | L-Glu | Amino acid | 964.1098 | 12.37527 | 838.2556982 | 14.45010498 | 0.004968225 | Significant | -0.201807013 |
| Phenylalanine | Phe | Amino acid | 5.600928 | 1.605798 | 1.308691297 | 0.692078111 | 0.189924992 | NS | -2.097540962 |
| L-Lysine | L-Lys | Amino acid | 44.74955 | 0.810753 | 35.42404482 | 1.363433016 | 0.048856755 | Significant | -0.337144078 |
| Monomethyl succinate | MmS | Ester | 4.990207 | 0.036267 | 2.543303907 | 0.26703292 | 0.01224356 | Significant | -0.972395698 |
| Ethanolamine | EtA | Alcohol amine | 8.206175 | 0.745722 | 4.250538823 | 1.358457161 | 0.079101513 | NS | -0.949064226 |
| Silanol | Sil | Alcohol | 1041.418 | 520.7213 | 2001.49804 | 157.720442 | 0.287969131 | NS | 0.942531209 |
| Glycerol | Gly | Alcohol | 148.8599 | 10.16976 | 135.8587547 | 10.46113593 | 0.542673723 | NS | -0.131847682 |
| Homoserine | Hse | Amino acid | 30.18228 | 1.190274 | 23.75305844 | 0.112145586 | 0.030626862 | Significant | -0.345588436 |
| Niacinamide, | Nia | Amide | 23.74481 | 0.536159 | 17.8447262 | 0.248706522 | 0.01432207 | Significant | -0.412114708 |
| Tromethamine | Tma | Amino acid | 6135.114 | 318.2112 | 4874.739354 | 388.4367543 | 0.020298514 | Significant | -0.331765153 |
| L-5-Oxoproline | L-5-Oxp | Amino acid derivative | 116.8805 | 1.181182 | 120.2290561 | 2.274756457 | 0.370018248 | NS | 0.04075188 |
| Putrescine | Put | Diamine | 14.13135 | 0.634797 | 69.57618987 | 15.67972853 | 0.076688255 | NS | 2.299694787 |
| d-Erythrotetrofuranose | Etf | Sugar | 10.38228 | 0.503848 | 20.27912685 | 1.439691962 | 0.019829951 | Significant | 0.965872327 |
| Dibutyl phthalate | DP | Ester | 23.71863 | 1.018388 | 23.42532684 | 2.007528014 | 0.87069809 | NS | -0.017951485 |
| Phytol | Phy | Diterpene alcohol | 30.59779 | 4.655469 | 9.452875884 | 2.203233589 | 0.084744277 | NS | -1.694602461 |
| Monopalmitin | MoP | Alcohol | 34.26125 | 0.629424 | 37.23471834 | 1.625715396 | 0.317956164 | NS | 0.120070499 |
| Monooleoylglycerol | MoG | Monoglyceride | 25.18107 | 2.85037 | 18.36013509 | 9.585463664 | 0.637760539 | NS | -0.455762898 |
| Monooleoylglycerol | MoG | Monoglyceride | 99.30444 | 16.60915 | 84.05790077 | 26.7910031 | 0.747752483 | NS | -0.240474805 |
| Glycerol monostearate | GMs | Ester | 46.11097 | 6.516173 | 42.9044609 | 5.11470265 | 0.804135238 | NS | -0.103982439 |
| 5'-Methylthioadenosine | MtA | Purine | 5.007701 | 6.516173 | 15.65337198 | 5.821943317 | 0.33195172 | NS | 1.644253051 |