Table S6. SL-E logarithmic gains (metabolites) with magnitudes greater than 1

|  | $X_{1}$ | $X_{2}$ | $\boldsymbol{X}_{3}$ | $X_{4}$ | $X_{5}$ | $X_{6}$ | $X_{7}$ | $X_{8}$ | $X_{9}$ | $X_{10}$ | $X_{11}$ | $X_{12}$ | $X_{13}$ | $X_{14}$ | $X_{15}$ | $X_{16}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $X_{122}$ | --- | -1.50 | --- | -1.52 | -2.43 | -2.81 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| $X_{123}$ | --- | --- | --- | --- | -1.43 | -1.65 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| $X_{124}$ | --- | -1.70 | --- | -1.72 | -2.75 | -3.17 | --- | --- | --- | --- | -- | --- | --- | --- | --- | --- |
| $X_{126}$ | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| $X_{127}$ | --- | --- | --- | --- | --- | --- | --- | --- | -1.02 | --- | --- | --- | --- | --- | --- | -3.50 |
| $X_{128}$ | -1.01 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| $X_{130}$ | --- | -1.13 | --- | -1.12 | -1.82 | -2.07 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| $X_{132}$ | --- | --- | 1.22 | --- | --- | --- | 1.18 | 1.88 | --- | 6.42 | 2.07 | --- | --- | 1.99 | --- | -14.29 |
| $X_{133}$ | --- | -2.86 | -1.79 | $-2.90$ | -3.60 | -4.15 | -1.82 | -2.73 | --- | --- | --- | --- | -4.84 | --- | --- | --- |
| $X_{134}$ | --- | --- | --- | --- | --- | --- | --- | 1.64 | --- | --- | --- | --- | -- | --- | --- | --- |
| $X_{135}$ | --- | --- | --- | --- | -1.45 | -1.68 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| $X_{136}$ | --- | --- | --- | --- | --- | --- | --- | -1.51 | --- | --- | --- | --- | --- | --- | --- | --- |
| $X_{138}$ | --- | --- | --- | 1.01 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| $\boldsymbol{X}_{139}$ | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 3.65 |
| $X_{142}$ | --- | --- | --- | --- | --- | --- | --- | --- | --- | -1.87 | --- | --- | --- | 1.66 | --- | --- |
| $X_{143}$ | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | -2.36 | --- | 5.07 |
| $X_{144}$ | --- | --- | --- | --- | --- | --- | -1.99 | -1.87 | --- | --- | --- | --- | --- | --- | --- | --- |
| $X_{146}$ | --- | --- | -- | --- | --- | --- | --- | -2.93 | --- | --- | --- | --- | --- | --- | --- | --- |
| $X_{147}$ | --- | --- | --- | --- | -- | --- | --- | 3.41 | 1.00 | -3.29 | --- | --- | --- | --- | 1.01 | 7.79 |
| $X_{148}$ | --- | --- | --- | --- | --- | --- | --- | 1.71 | --- | -1.65 | --- | --- | --- | --- | --- | 3.90 |
| $X_{149}$ | --- | --- | -1.25 | --- | --- | --- | -1.20 | -1.91 | --- | -6.52 | $-2.10$ | --- | --- | -2.02 | --- | 14.52 |
| $X_{150}$ | --- | --- | --- | --- | --- | -1.10 | --- | -1.07 | --- | 6.49 | 2.09 | --- | --- | 2.18 | --- | -14.68 |
| $X_{152}$ | --- | --- | --- | --- | --- | -1.11 | --- | --- | --- | --- | -- | --- | --- | --- | --- | --- |
| $X_{154}$ | --- | 4.75 | --- | 4.81 | 7.57 | 8.73 | --- | --- | --- | 1.72 | --- | --- | --- | --- | --- | -1.51 |
| $X_{156}$ | --- | --- | -2.17 | --- | --- | 1.09 | --- | -1.51 | --- | --- | --- | --- | --- | --- | --- | --- |
| $X_{157}$ | --- | --- | --- | --- | --- | --- | --- | --- | --- | -3.94 | --- | --- | --- | --- | --- | 4.38 |
| $X_{158}$ | --- | 2.89 | 1.81 | 2.93 | 3.64 | 4.19 | 1.84 | 2.75 | --- | --- | --- | --- | --- | --- | --- | --- |
| $X_{159}$ | --- | --- | 1.22 | --- | --- | --- | 1.17 | 1.88 | --- | 6.40 | 2.06 | --- | --- | 1.99 | --- | -14.25 |
| $X_{160}$ | --- | -1.50 | --- | -1.53 | -2.40 | -2.77 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| $X_{165}$ | --- | -3.01 | --- | -3.05 | -4.84 | -5.59 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

Table S6. (cont...).

|  | $X_{17}$ | $X_{18}$ | $X_{19}$ | $X_{20}$ | $X_{21}$ | $X_{22}$ | $X_{23}$ | $X_{24}$ | $X_{25}$ | $X_{26}$ | $X_{27}$ | $X_{28}$ | $X_{29}$ | $X_{30}$ | $X_{31}$ | $X_{32}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $X_{122}$ | -4.81 | --- | --- | - | --- | --- | 2.97 | --- | 13.15 | 2.00 | 2.00 | 4.00 | 3.35 | 3.02 | 3.59 | 4.00 |
| $X_{123}$ | -2.83 | --- | --- | --- | --- | --- | 1.75 | --- | 7.72 | 1.18 | 1.18 | 2.35 | 1.97 | 1.77 | 2.11 | 2.35 |
| $X_{124}$ | -5.44 | --- | --- | --- | --- | --- | 3.36 | --- | 14.88 | 2.27 | 2.27 | 4.52 | 3.79 | 3.42 | 4.06 | 4.52 |
| $X_{125}$ | --- | --- | --- | --- | --- | --- | --- | --- | 2.27 | --- | --- | --- | --- | --- | --- | --- |
| $X_{128}$ | -3.55 | --- | --- | --- | --- | --- | 2.21 | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| $X_{130}$ | --- | 1.54 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| $X_{132}$ | -7.05 | -2.22 | -1.01 | -1.56 | -1.05 | --- | 3.53 | -2.19 | 5.71 | --- | --- | 1.74 | 1.45 | 1.31 | 1.56 | 1.74 |
| $X_{133}$ | --- | 1.33 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| $X_{134}$ | -2.86 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| $X_{135}$ | --- | --- | --- | -1.29 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| $X_{136}$ | 1.56 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| $X_{142}$ | 1.10 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| $X_{143}$ | --- | -1.52 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| $X_{144}$ | --- | --- | -1.94 | -2.04 | --- | -1.05 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| $X_{145}$ | $-2.00$ | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| $X_{146}$ | --- | --- | 2.16 | 2.32 | --- | 1.07 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| $X_{147}$ | --- | --- | 1.08 | 1.16 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| $X_{148}$ | --- | -1.56 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| $X_{149}$ | -2.84 | --- | --- | --- | --- | --- | --- | --- | 1.20 | --- | --- | --- | --- | --- | --- | --- |
| $X_{152}$ | 14.79 | --- | --- | --- | --- | --- | -9.15 | --- | -15.99 | -2.44 | -2.44 | $-4.86$ | -4.07 | -3.67 | -4.36 | $-4.86$ |
| $X_{154}$ | 1.86 | -1.23 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| $X_{155}$ | --- | -1.04 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| $X_{157}$ | 7.12 | 2.24 | 1.02 | 1.57 | 1.06 | --- | -3.56 | 2.21 | -5.76 | --- | --- | -1.75 | -1.47 | -1.32 | -1.57 | $-1.75$ |
| $X_{158}$ | --- | 1.53 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| $X_{159}$ | -4.69 | --- | --- | --- | --- | --- | 2.90 | -2.26 | 5.07 | --- | --- | 1.54 | 1.29 | 1.16 | 1.38 | 1.54 |
| $X_{160}$ | -9.55 | --- | --- | --- | --- | --- | 5.90 | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| $X_{165}$ | 7.40 | 2.33 | 1.06 | 1.64 | 1.11 | --- | -3.70 | 2.30 | -5.99 | --- | --- | -1.82 | -1.53 | -1.38 | -1.64 | -1.82 |
| $X_{171}$ | 1.02 | --- | --- | --- | --- | --- | --- | --- | -2.78 | --- | --- | --- | --- | --- | --- | --- |
| $X_{172}$ | --- | --- | --- | --- | --- | --- | --- | --- | --- | -1.00 | --- | --- | --- | --- | --- | --- |
| $X_{173}$ | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | -1.00 | --- | --- | --- | --- | --- |
| $X_{174}$ | --- | --- | --- | --- | --- | --- | --- | --- | 1.09 | --- | --- | -1.28 | --- | --- | --- | --- |
| $X_{175}$ | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | -1.68 | --- | --- | --- |
| $X_{176}$ | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | -1.51 | --- | --- |
| $\boldsymbol{X}_{177}$ | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | -1.80 | --- |
| $X_{179}$ | --- | --- | --- | --- | --- | --- | --- | --- | -1.09 | --- | --- | --- | --- | --- | --- | --- |
| $X_{186}$ | 1.02 | --- | --- | --- | --- | --- | --- | --- | -2.78 | --- | --- | --- | --- | --- | --- | -1.84 |

Table S6. (cont...).

|  | $X_{33}$ | $X_{34}$ | $X_{35}$ | $X_{36}$ | $X_{37}$ | $\boldsymbol{X}_{38}$ | $X_{39}$ | $\boldsymbol{X}_{40}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $X_{122}$ | 6.53 | 7.75 | 8.63 | 4.02 | 4.61 | 13.62 | 4.01 | 17.26 |
| $X_{123}$ | 3.84 | 4.55 | 5.07 | 2.36 | 2.71 | --- | 2.35 | 10.14 |
| $X_{124}$ | 7.39 | 8.77 | 9.77 | 4.55 | 5.22 | 9.49 | 4.54 | 9.53 |
| $X_{125}$ | 1.12 | 1.34 | 1.49 | --- | --- | 2.35 | --- | 2.97 |
| $X_{128}$ | --- | --- | --- | --- | --- | -7.91 | --- | --- |
| $X_{130}$ | 2.2 | 2.34 | 2.38 | --- | 1.12 | 1.3 | --- | 4.75 |
| $X_{132}$ | 2.81 | 3.34 | 3.73 | 1.70 | --- | --- | 1.72 | 7.45 |
| $X_{148}$ | -2.33 | -2.38 | -2.41 | --- | -1.13 | -1.39 | --- | -4.83 |
| $X_{152}$ | -7.66 | -9.15 | -10.21 | -4.89 | -5.79 | --- | -4.88 | -20.43 |
| $X_{157}$ | -2.84 | -3.38 | -3.76 | -1.71 | --- | --- | -1.73 | -7.52 |
| $X_{158}$ | 2.28 | 2.33 | 2.37 | --- | 1.11 | 1.37 | --- | 4.74 |
| $X_{159}$ | 2.4 | 2.90 | 3.24 | 1.55 | 1.84 | --- | 1.55 | 6.48 |
| $X_{161}$ | --- | --- | --- | --- | --- | -12.65 | --- | --- |
| $X_{163}$ | --- | --- | --- | --- | --- | -15.84 | --- | --- |
| $X_{165}$ | -2.95 | -3.51 | 3.91 | -1.78 | --- | --- | -1.80 | 7.82 |
| $X_{174}$ | 1.18 | 1.40 | 1.56 | --- | --- | --- | --- | 3.1 |
| $X_{176}$ | -3.24 | --- | --- | --- | --- | --- | --- | --- |
| $\boldsymbol{X}_{177}$ | --- | -3.86 | --- | --- | --- | --- | --- | -- |
| $X_{179}$ | -1.18 | -1.40 | -1.56 | --- | --- | --- | --- | -3.11 |
| $X_{180}$ | -2.60 | -2.60 | -2.60 | --- | --- | --- | --- | -5.19 |
| $X_{181}$ | 2.60 | 2.60 | --- | --- | --- | --- | --- | --- |
| $X_{183}$ | --- | --- | 2.60 | --- | --- | --- | --- | 5.1 |
| $X_{186}$ | --- | --- | -3.97 | -1.85 | -2.08 | --- | -1.85 | -7.94 |

