

Table S7. Boundary conditions for *in silico* metabolic modeling analyses.

Exchange reaction	Compound	Lower boundary	Upper Boundary
EX_cpd00013_e0	Ammonia (NH ₃)	-10	1000
EX_cpd00001_e0	Water (H ₂ O)	-10	1000
EX_cpd00007_e0	Oxygen (O ₂)	-10	1000
EX_cpd00009_e0	Phosphate (PO ₄ ³⁻)	-10	1000
EX_cpd00011_e0	Carbon dioxide (CO ₂)	-10	1000
EX_cpd00030_e0	Manganese (Mn ²⁺)	-10	1000
EX_cpd00034_e0	Zinc (Zn ²⁺)	-10	1000
EX_cpd00048_e0	Sulfate (SO ₄ ²⁻)	-10	1000
EX_cpd00058_e0	Copper (Cu ²⁺)	-10	1000
EX_cpd00063_e0	Calcium (Ca ²⁺)	-10	1000
EX_cpd00067_e0	Proton (H ⁺)	-10	1000
EX_cpd00076_e0	Sucrose	-1	1000
EX_cpd00099_e0	Chloride (Cl ⁻)	-10	1000
EX_cpd00104_e0	Biotin	-10	1000
EX_cpd00149_e0	Cobalt (Co ²⁺)	-10	1000
EX_cpd00205_e0	Potassium (K ⁺)	-10	1000
EX_cpd00254_e0	Magnesium (Mg ⁺)	-10	1000
EX_cpd00971_e0	Sodium (Na ⁺)	-10	1000
EX_cpd10515_e0	Iron (Fe ²⁺)	-10	1000
EX_cpd10516_e0	Iron (Fe ³⁺)	-10	1000
EX_cpd00305_e0	Thiamine	-10	1000

All values are given in units of: mmol (g cell dry weight)⁻¹ hr⁻¹. All exchange reactions not listed has a lower bound of '0' and an upper bound of '1000'.