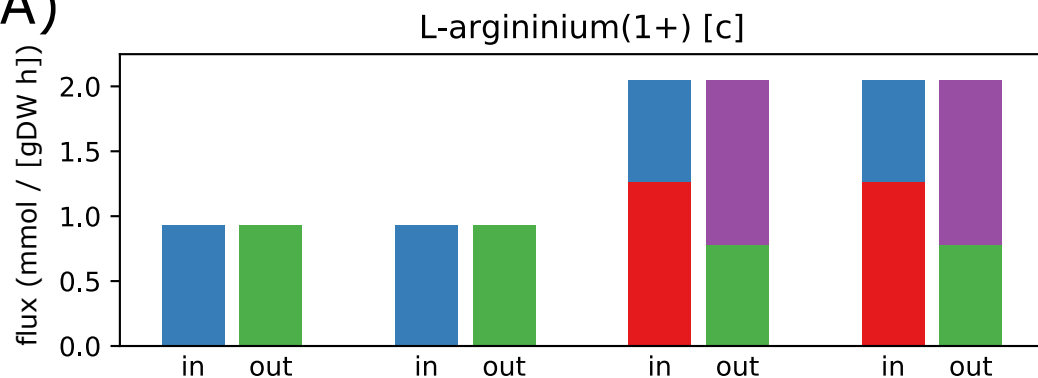
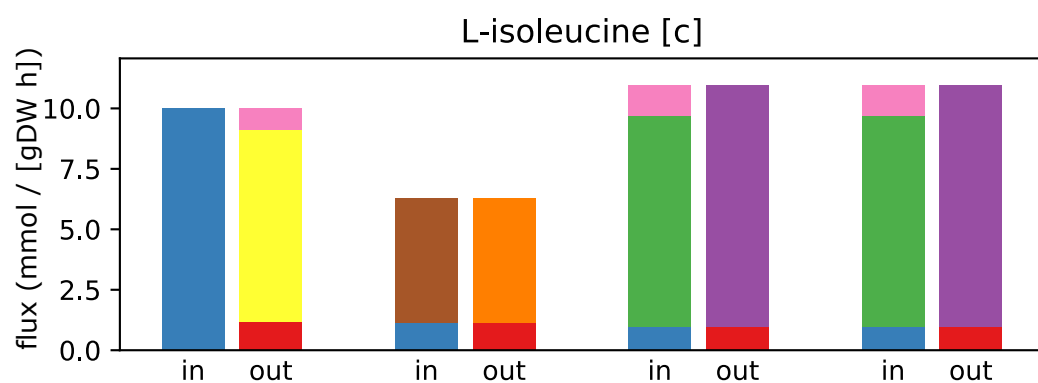


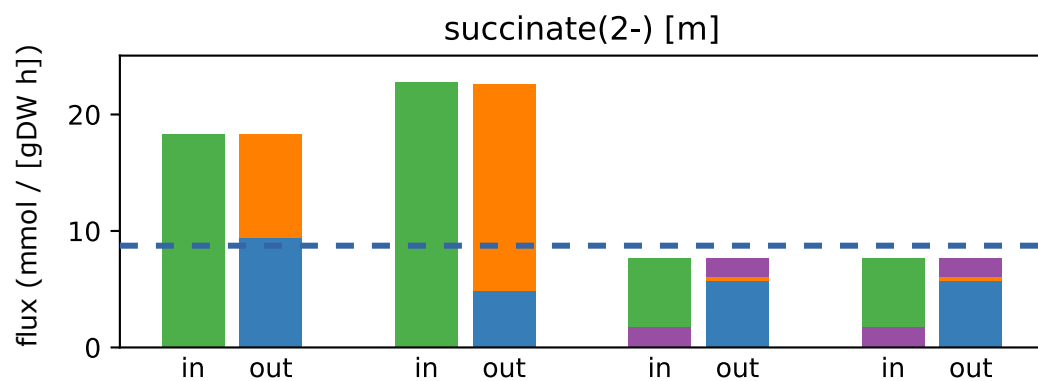
A)



- ARGGB0AT3tc: $\text{arg}[e] + \text{Cl}^-[e] + \text{Na}^+[e] \rightarrow \text{arg}[c] + \text{Cl}^-[c] + \text{Na}^+[c]$
- ARGSL: $\text{argsuc} \rightarrow \text{arg} + \text{fum}$
- SARS-CoV-19 biosynthesis
- r1988: $\text{arg}[c] + \text{ile}[e] + \text{Na}^+[e] \rightarrow \text{arg}[e] + \text{ile}[c] + \text{Na}^+[c]$



- SARS-CoV-19 biosynthesis
- ILETA: $3\text{mop} + \text{glu} \rightarrow \text{akg} + \text{ile}$
- r1607: $\text{met}[c] + \text{ile}[e] \rightarrow \text{met}[e] + \text{ile}[c]$
- r1661: $\text{ile}[c] + \text{thr}[e] \rightarrow \text{ile}[e] + \text{thr}[c]$
- r1746: $\text{ile}[c] + \text{met}[e] + \text{Na}^+[e] \rightarrow \text{ile}[e] + \text{met}[c] + \text{Na}^+[c]$
- r1776: $\text{ile}[c] + \text{Na}^+[e] + \text{phe}[e] \rightarrow \text{ile}[e] + \text{phe}[c] + \text{Na}^+[c]$
- r1776: $\text{ile}[e] + \text{Na}^+[e] + \text{pro}[c] \rightarrow \text{ile}[c] + \text{Na}^+[c] + \text{pro}[e]$
- Other reactions



- SUCD1m: $\text{succ} + \text{FAD} \rightarrow \text{fum} + \text{FADH}_2$
- SUCOASm: $\text{succoa} + \text{ADP} + \text{Pi} \rightarrow \text{succ} + \text{coA} + \text{ATP}$
- r0178: $\text{succ} + \text{NADH} + 2 \text{H}^+ \rightarrow \text{sucsal} + \text{NAD}^+ + \text{H}_2\text{O}$
- Other reactions

B)

