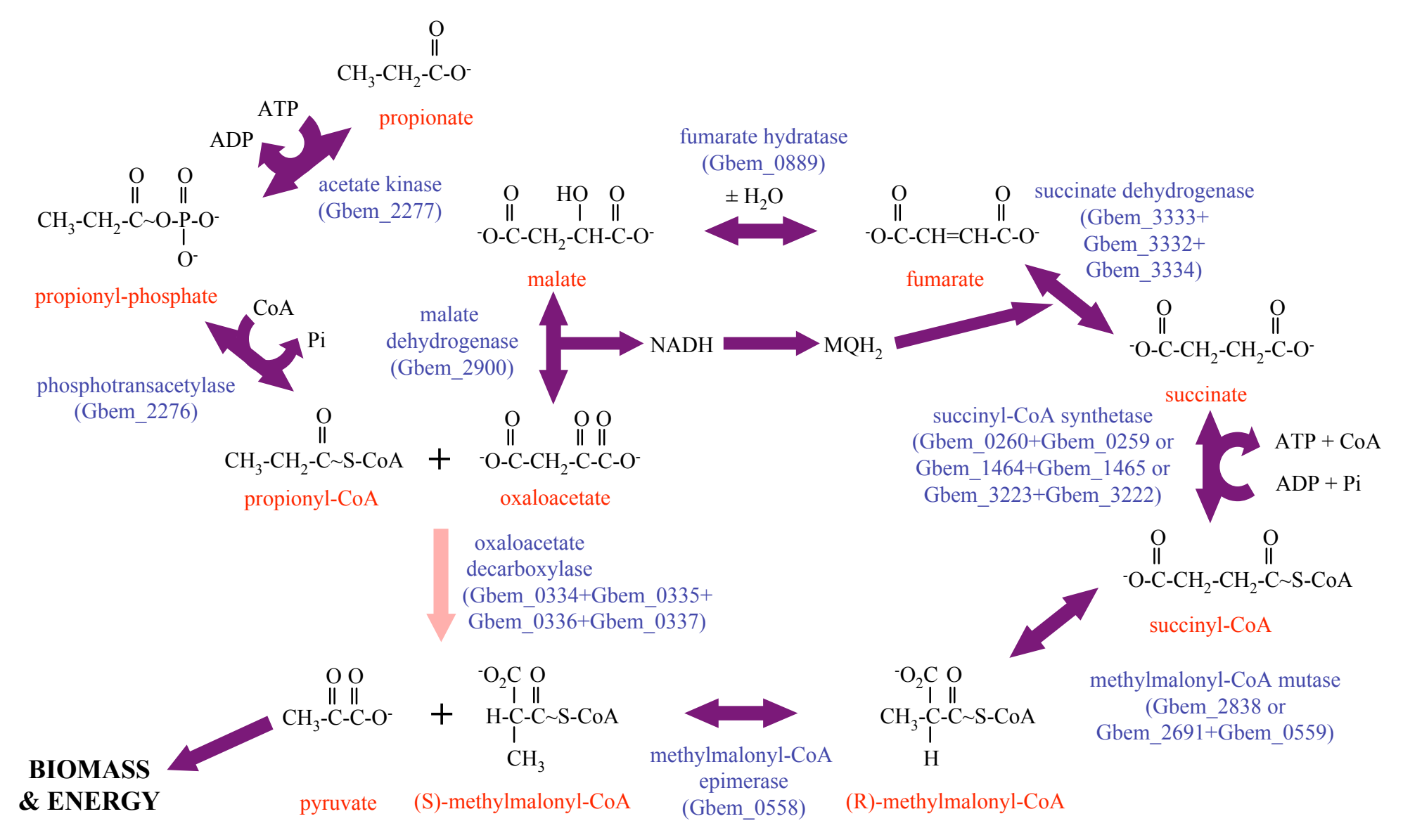
propionate
ATP
ADP
acetate kinase
(Gbem_2277)
propionyl-phosphate
CoA
Pi
phosphotransacetylase
(Gbem_2276)
propionyl-CoA
malate
malate
dehydrogenase
(Gbem_2900)
NADH
oxaloacetate
fumarate hydratase
(Gbem_0889)
± H2O
malate
fumarate
MQH2
succinate dehydrogenase
(Gbem_3333+
Gbem_3332+
Gbem_3334)
succinate
succinyl-CoA synthetase
(Gbem_0260+Gbem_0259 or
Gbem_1464+Gbem_1465 or
Gbem_3223+Gbem_3222)
ATP + CoA
ADP + Pi
succinyl-CoA
oxaloacetate
decarboxylase
(Gbem_0334+Gbem_0335+
Gbem_0336+Gbem_0337)
methylmalonyl-CoA mutase
(Gbem_2838 or
Gbem_2691+Gbem_0559)
BIOMASS
& ENERGY
pyruvate
(S)-methylmalonyl-CoA
methylmalonyl-CoA
epimerase
(Gbem_0558)
(R)-methylmalonyl-CoA