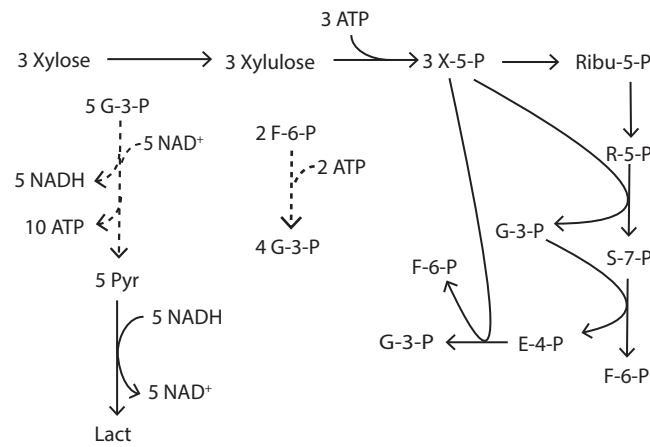


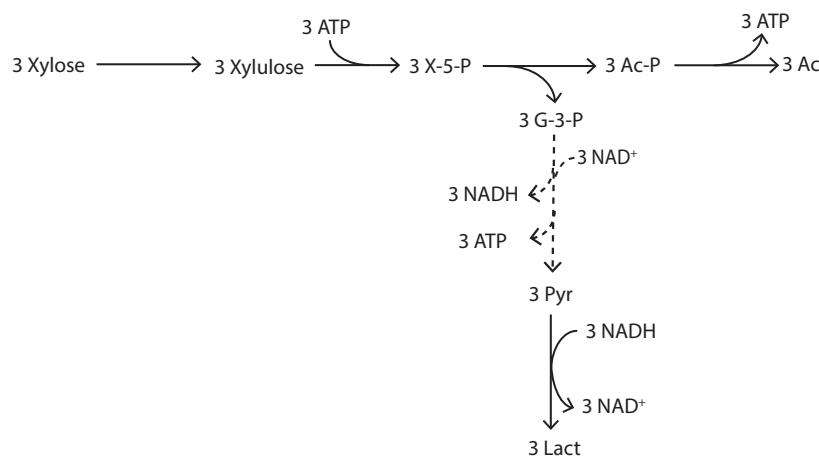
Fig S7.1 (Eq. 1)



$$3 \text{ Xylose} \longrightarrow 5 \text{ Lactate} + 5 \text{ H}^+ \quad \Delta G^\circ = -516 \text{ kJ/reaction}$$

ATP Yield: 1.67 ATP/ Xylose

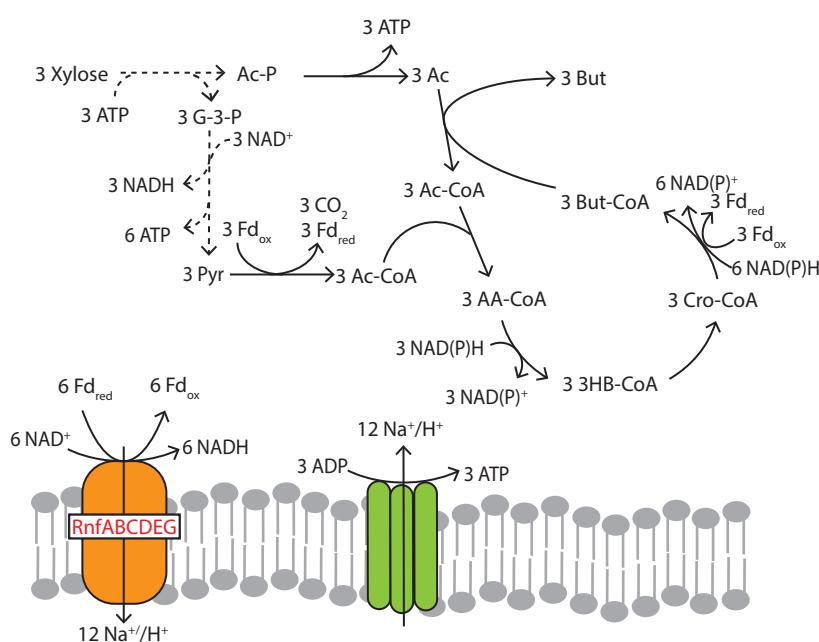
Fig S7.2 (Eq. 2)



$$3 \text{ Xylose} \longrightarrow 3 \text{ Lactate} + 3 \text{ Acetate} + 6 \text{ H}^+ \quad \Delta G^\circ = -634 \text{ kJ/reaction}$$

ATP Yield: 2.00 ATP/ Xylose

Fig S7.3 (Eq. 3)



$$3 \text{ Xylose} \longrightarrow 3 \text{ Butyrate} + 3 \text{ H}^+ + 3 \text{ H}_2\text{O} + 3 \text{ CO}_2 \quad \Delta G^\circ = -787 \text{ kJ/reaction}$$

ATP Yield: 3.00 ATP/ Xylose

Fig S7.4 (Eq. 4)

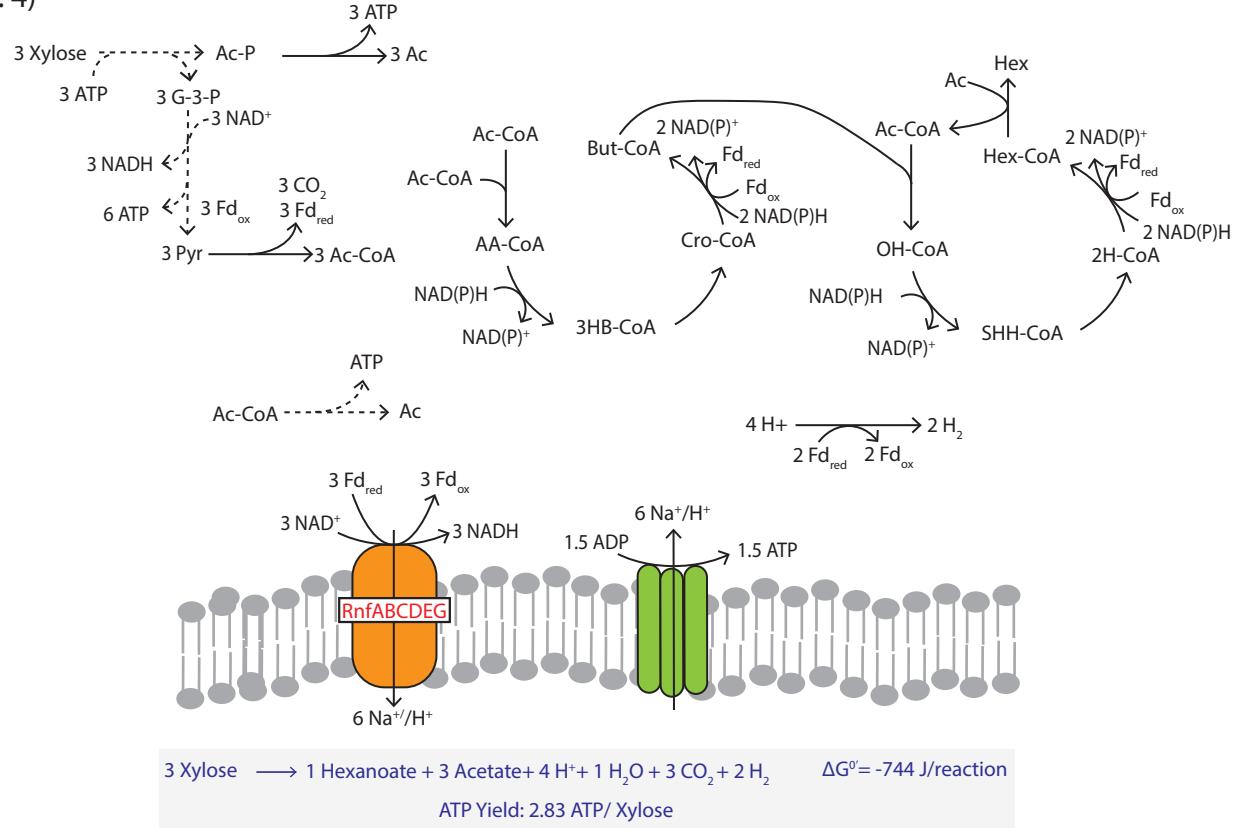


Fig S7.5 (Eq. 5)

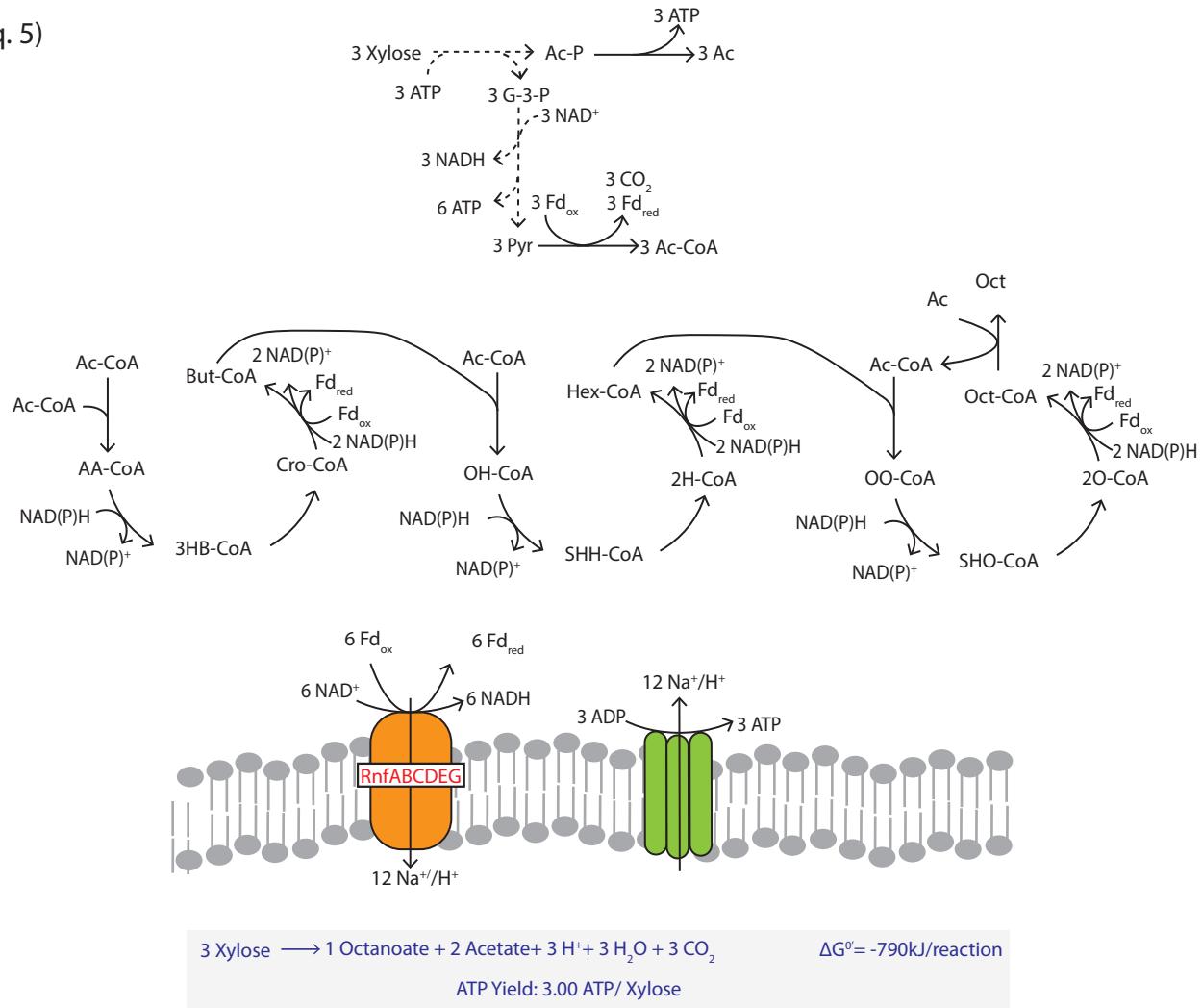
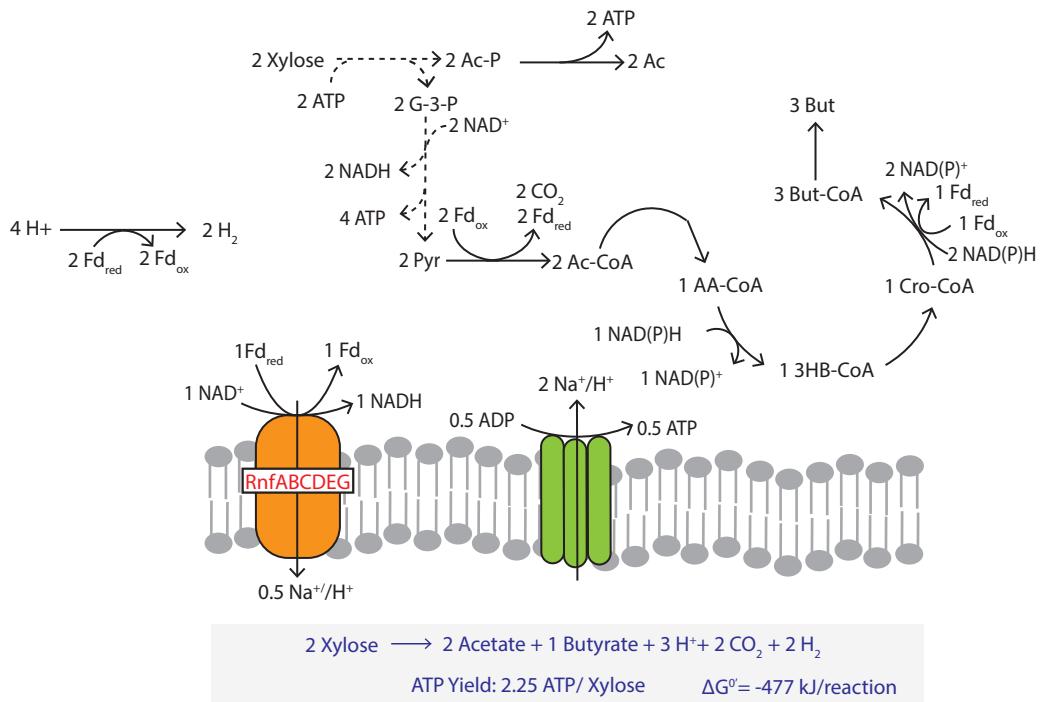


Fig S7.6 (Eq. 6)



### Fig S7.7 (Eq. 7)

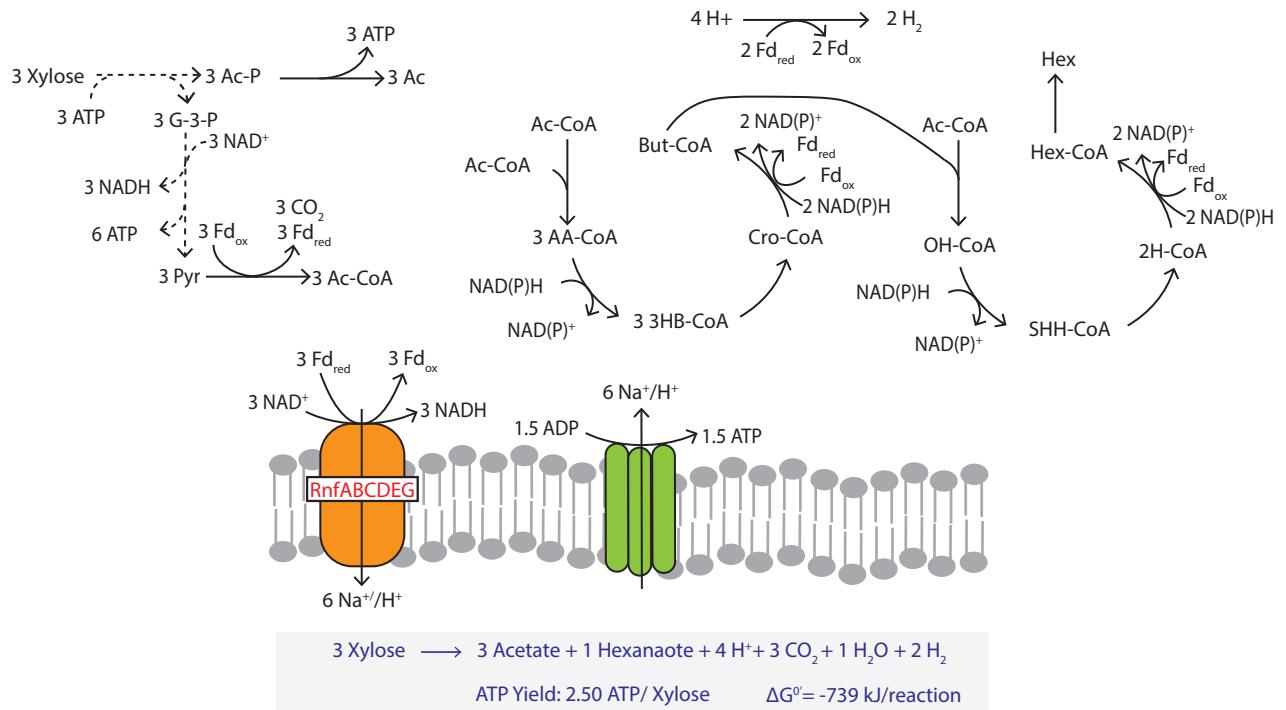


Fig S7.8 (Eq. 8)

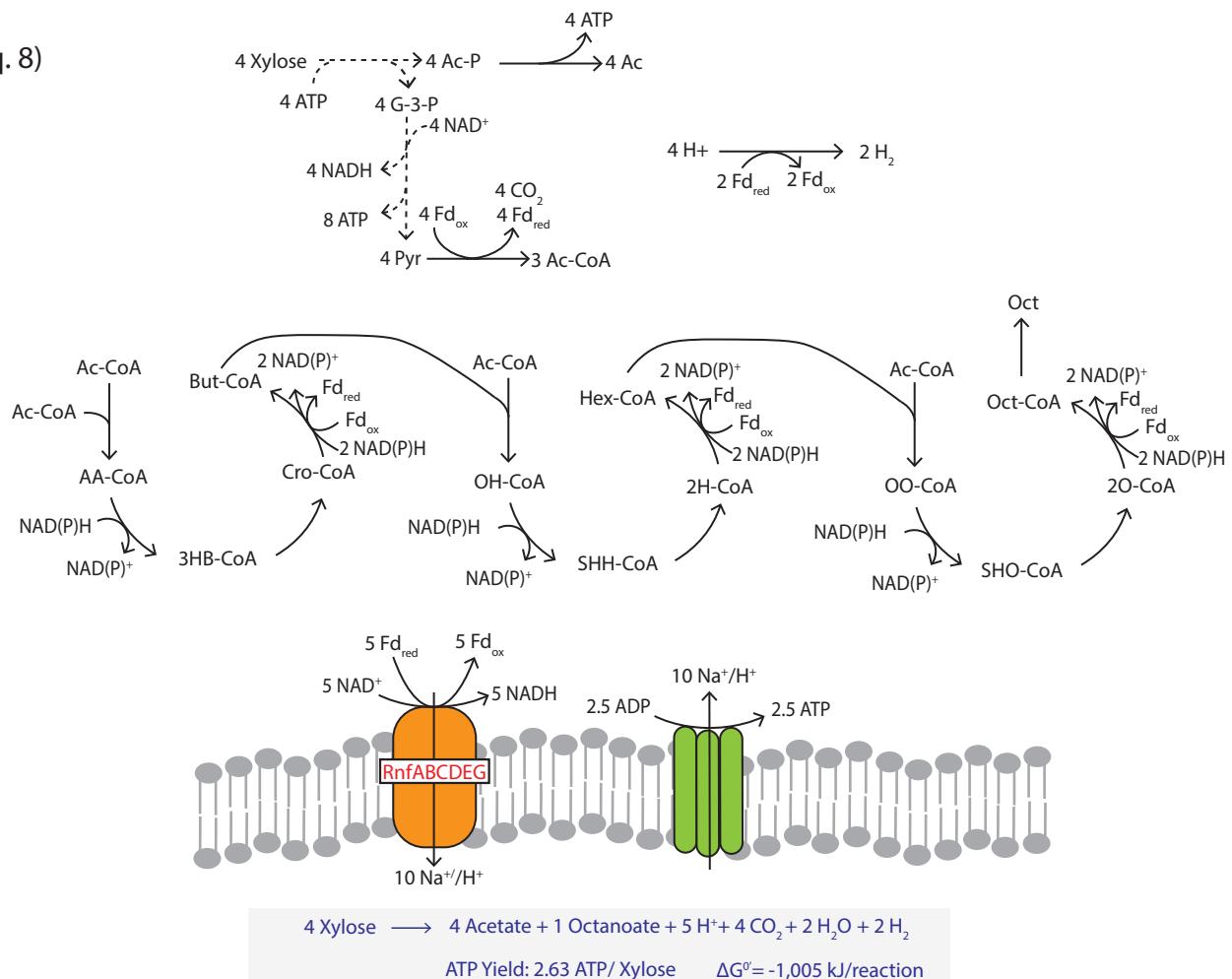


Fig S7.9 (Eq. 9)

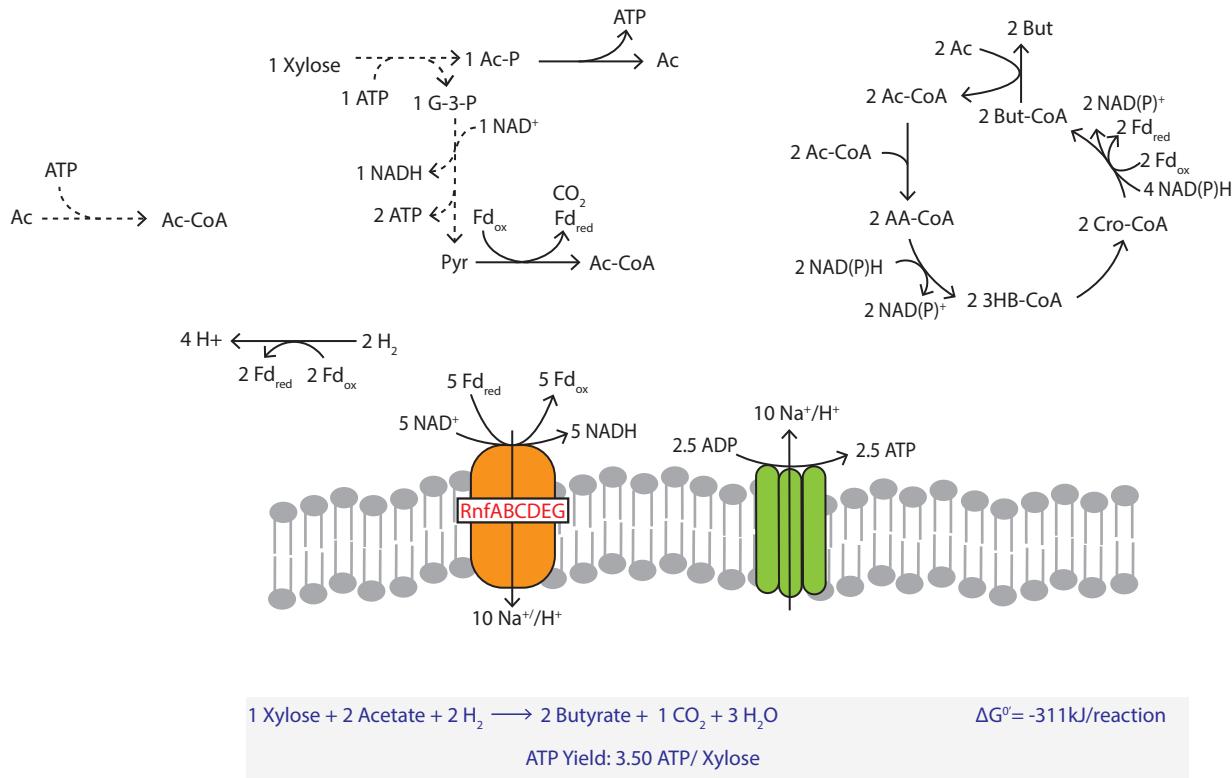
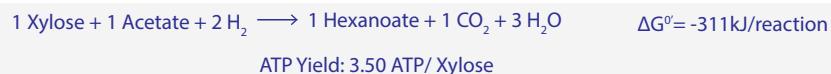
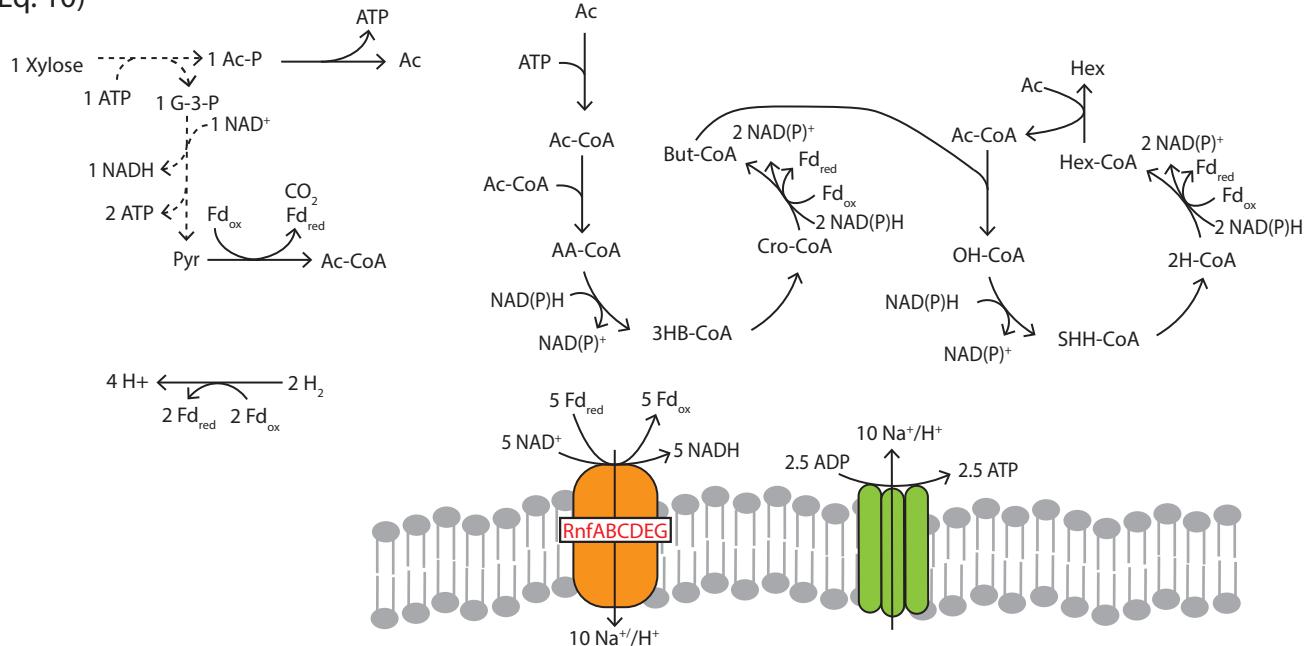


Fig S7.10 (Eq. 10)



### Fig S7.11 (Eq. 11)

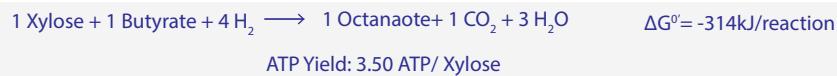
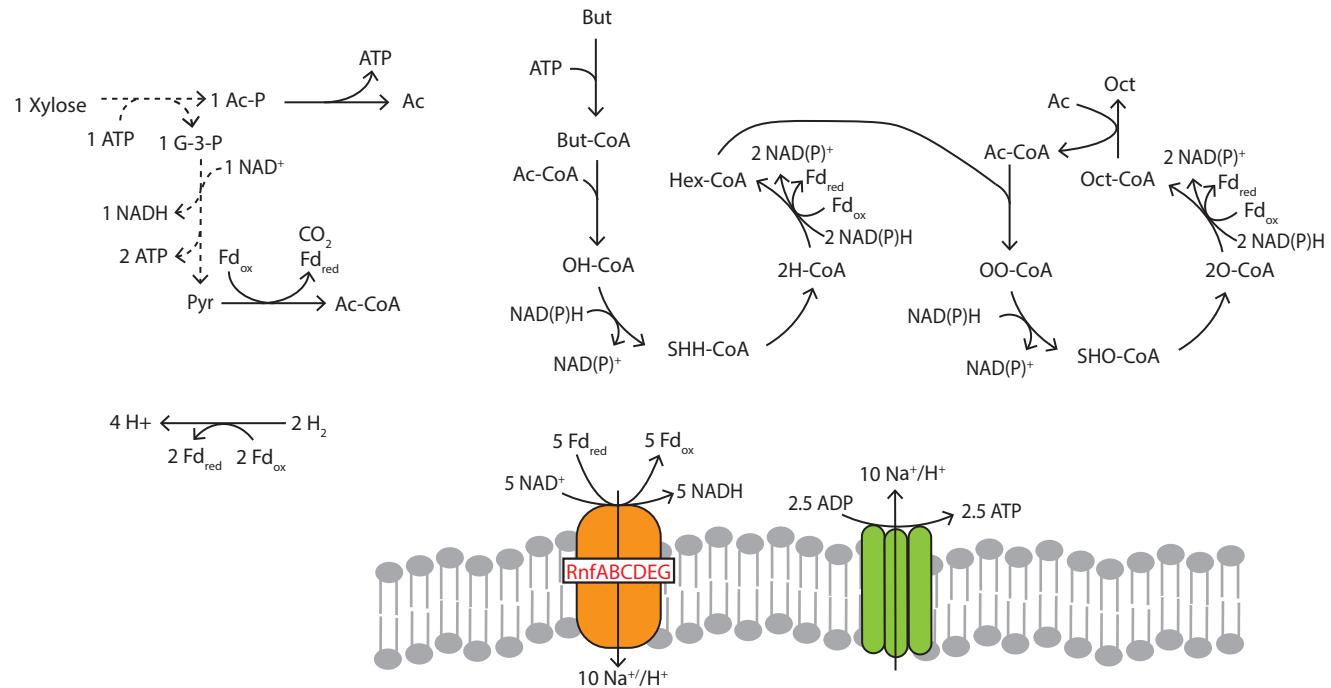


Fig S7.12 (Eq. 12)

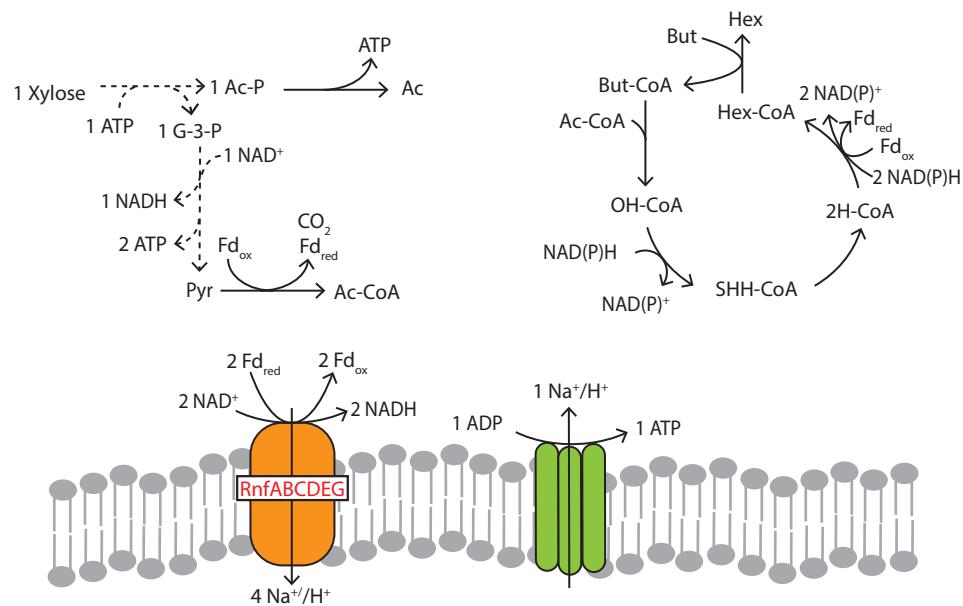


Fig S7.13 (Eq. 13)

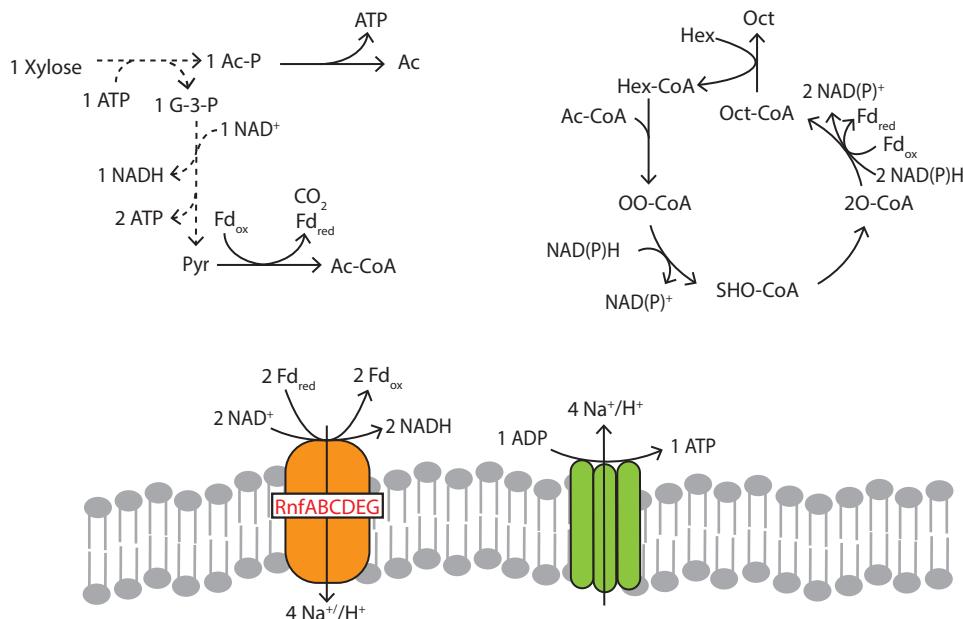


Fig S7.14 (Eq. 14)

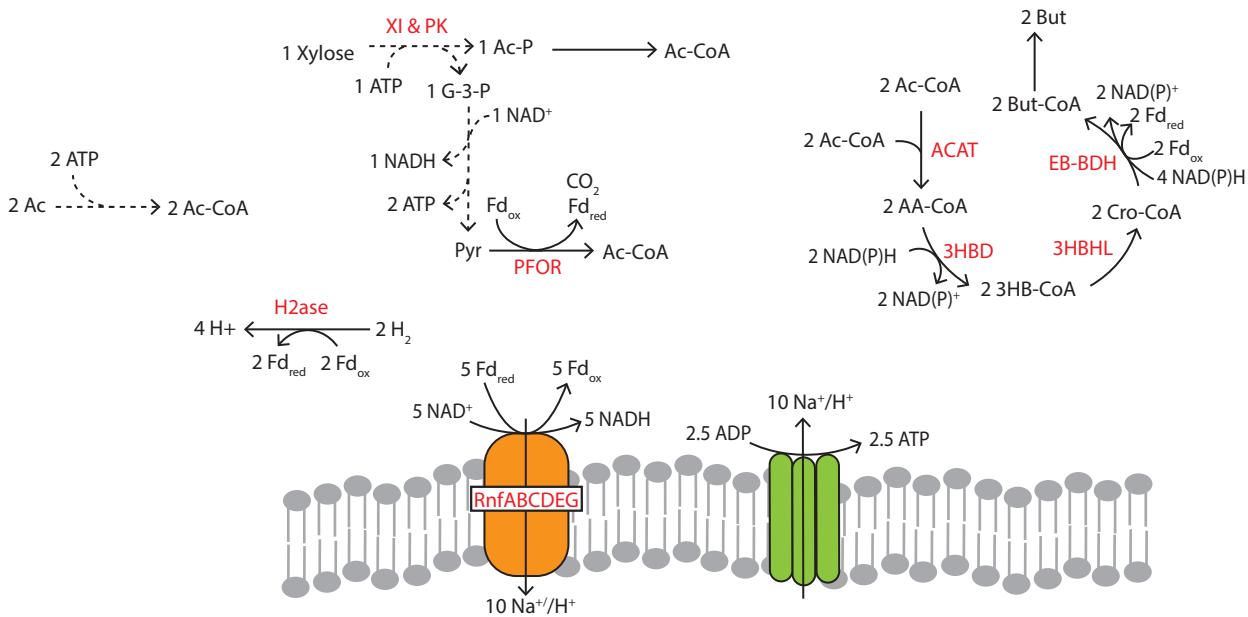


Fig S7.15 (Eq. 15)

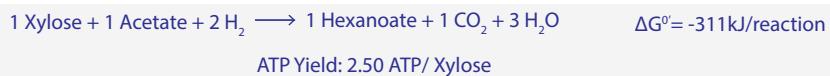
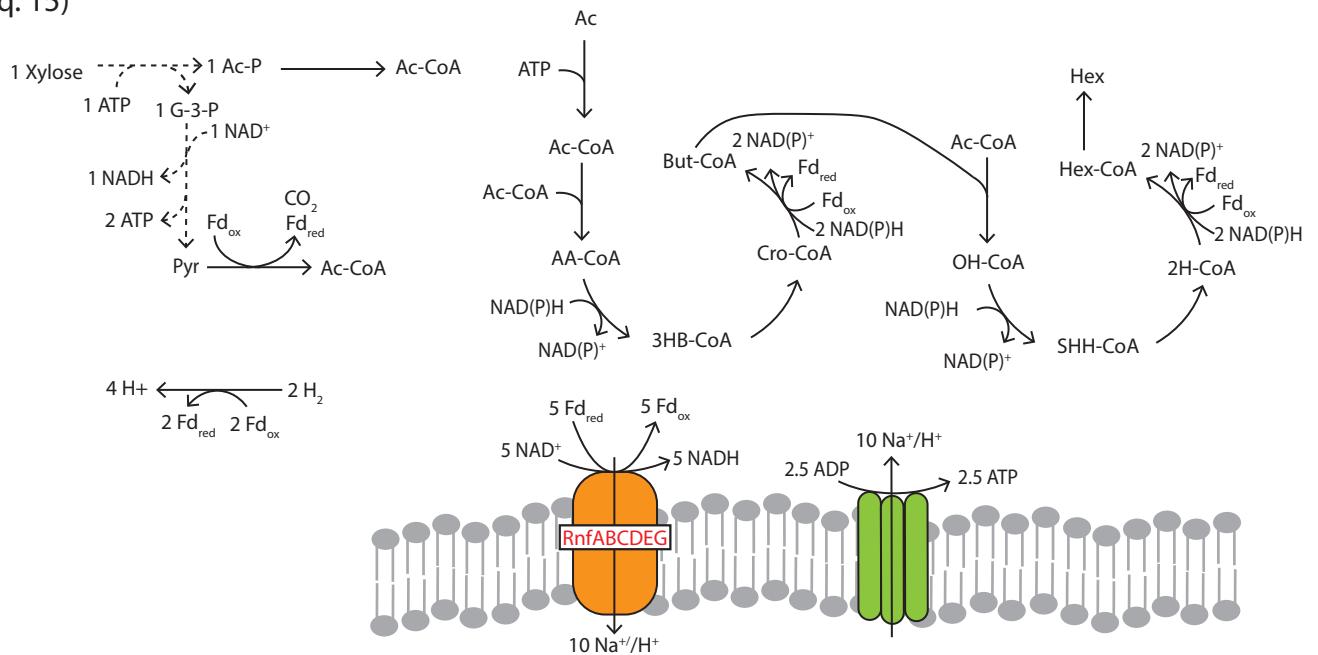


Fig S7.16 (Eq. 16)

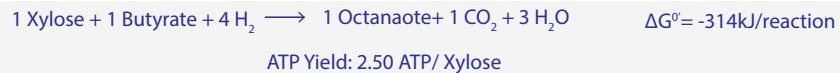
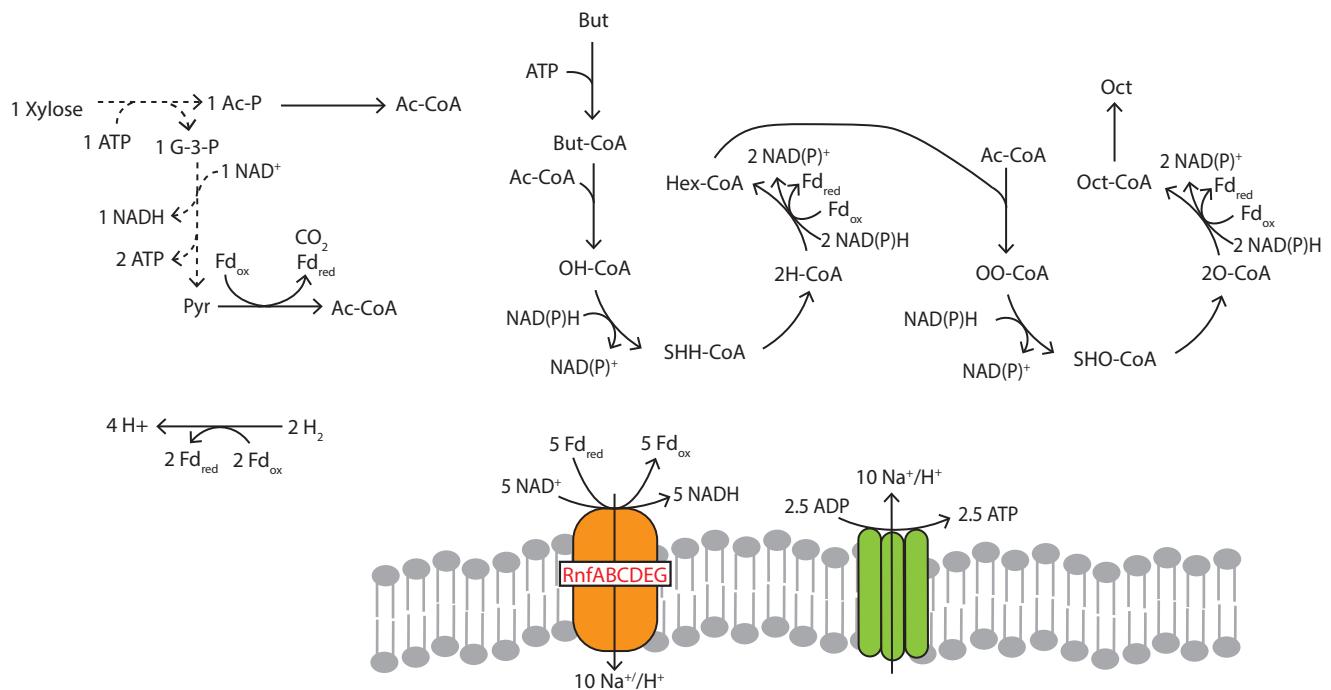


Fig S7.17 (Eq. 17)

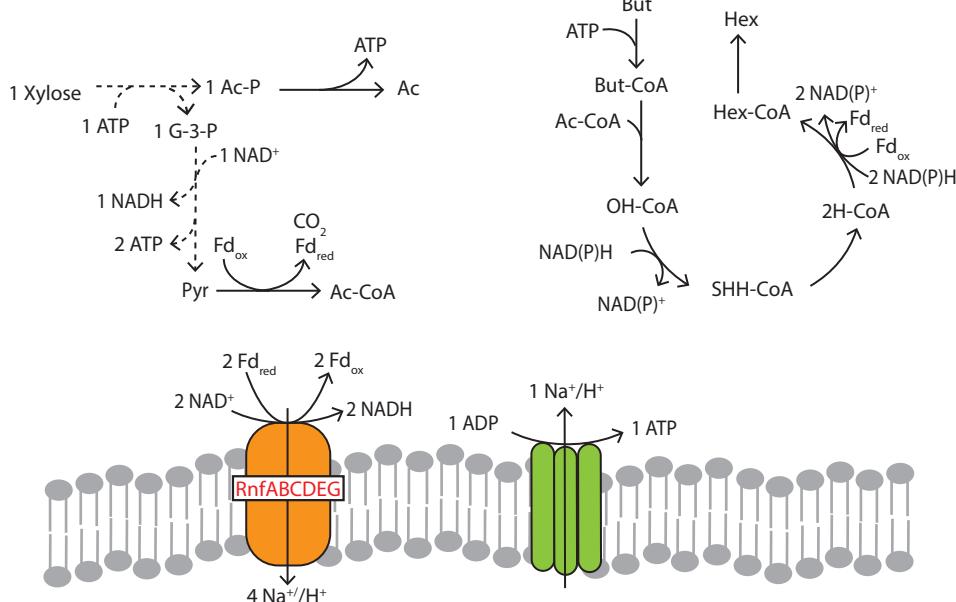


Fig S7.18 (Eq. 18)

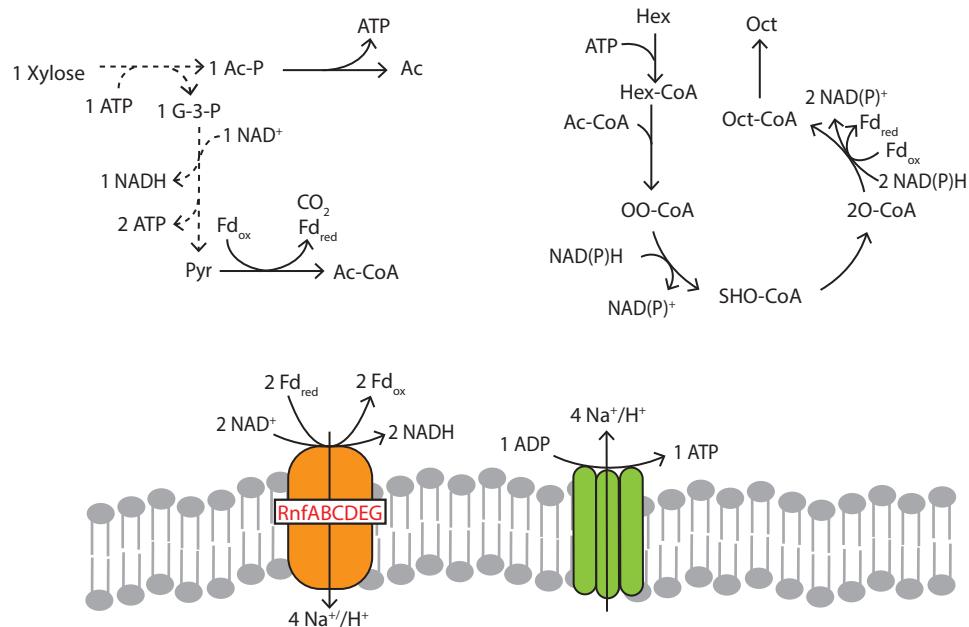


Fig S7.19 (Eq. 19)

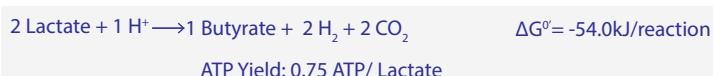
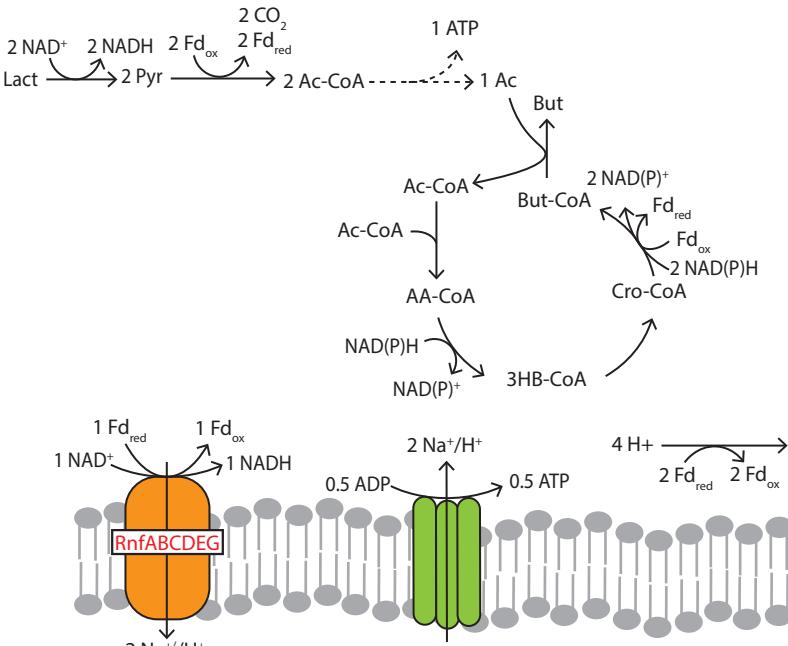


Fig S7.20 (Eq. 20)

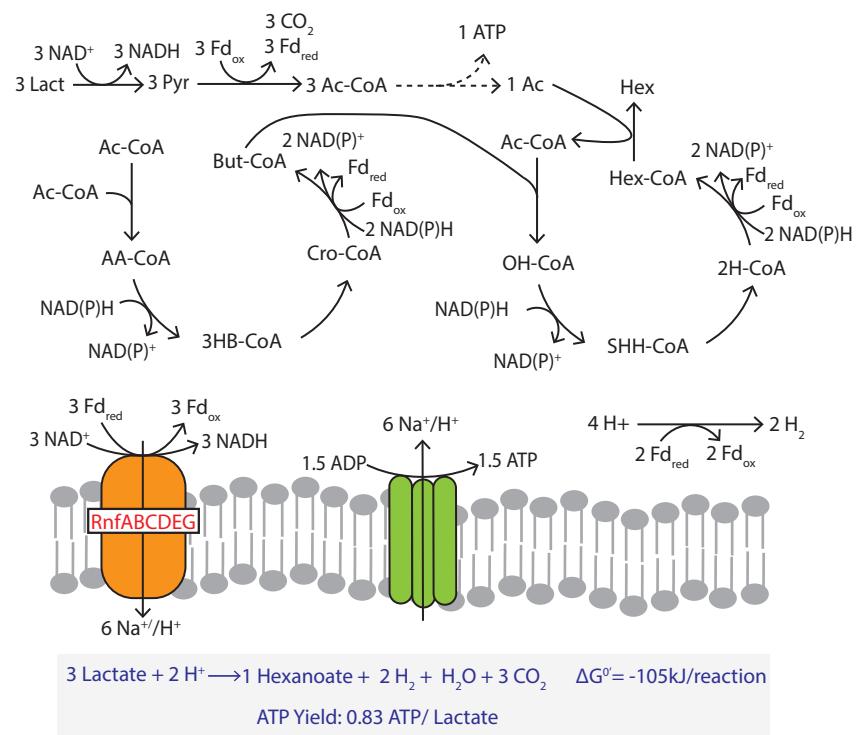


Fig S7.21 (Eq. 21)

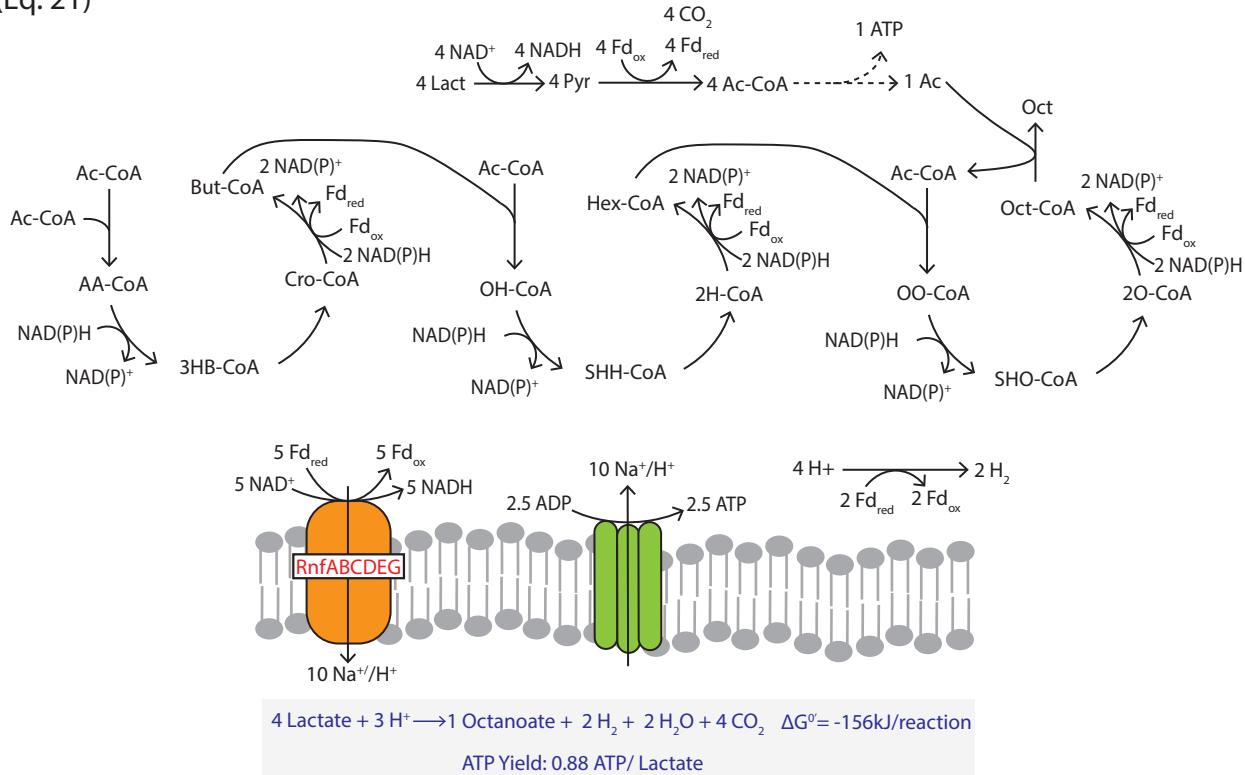


Fig S7.22 (Eq. 22)

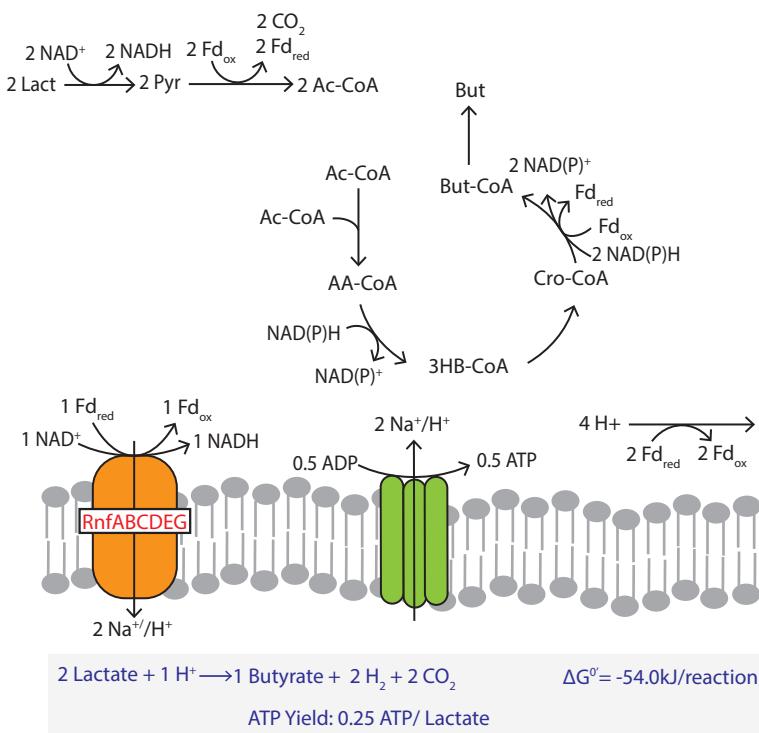


Fig S7.23 (Eq. 23)

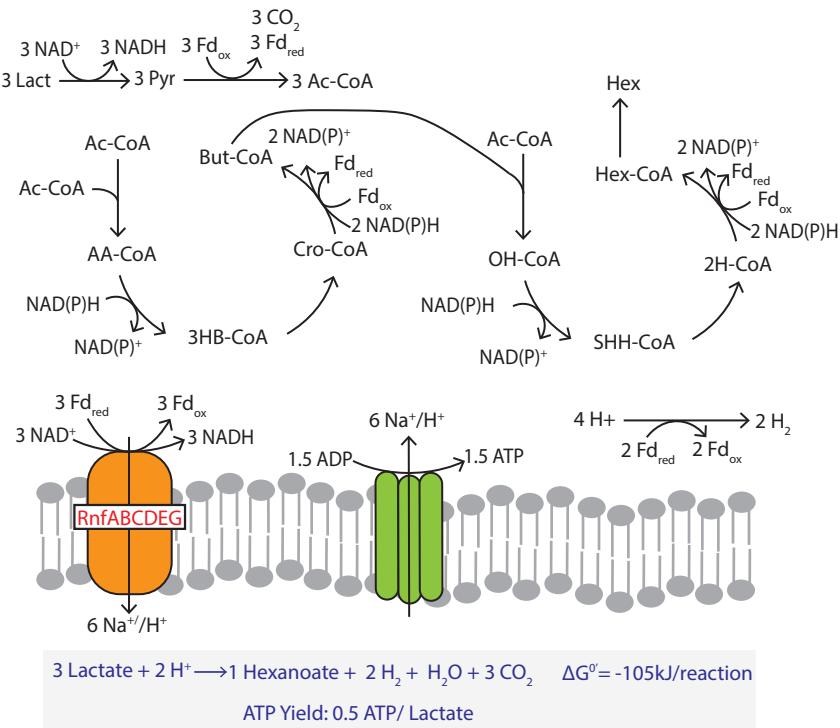


Fig S7.24 (Eq. 24)

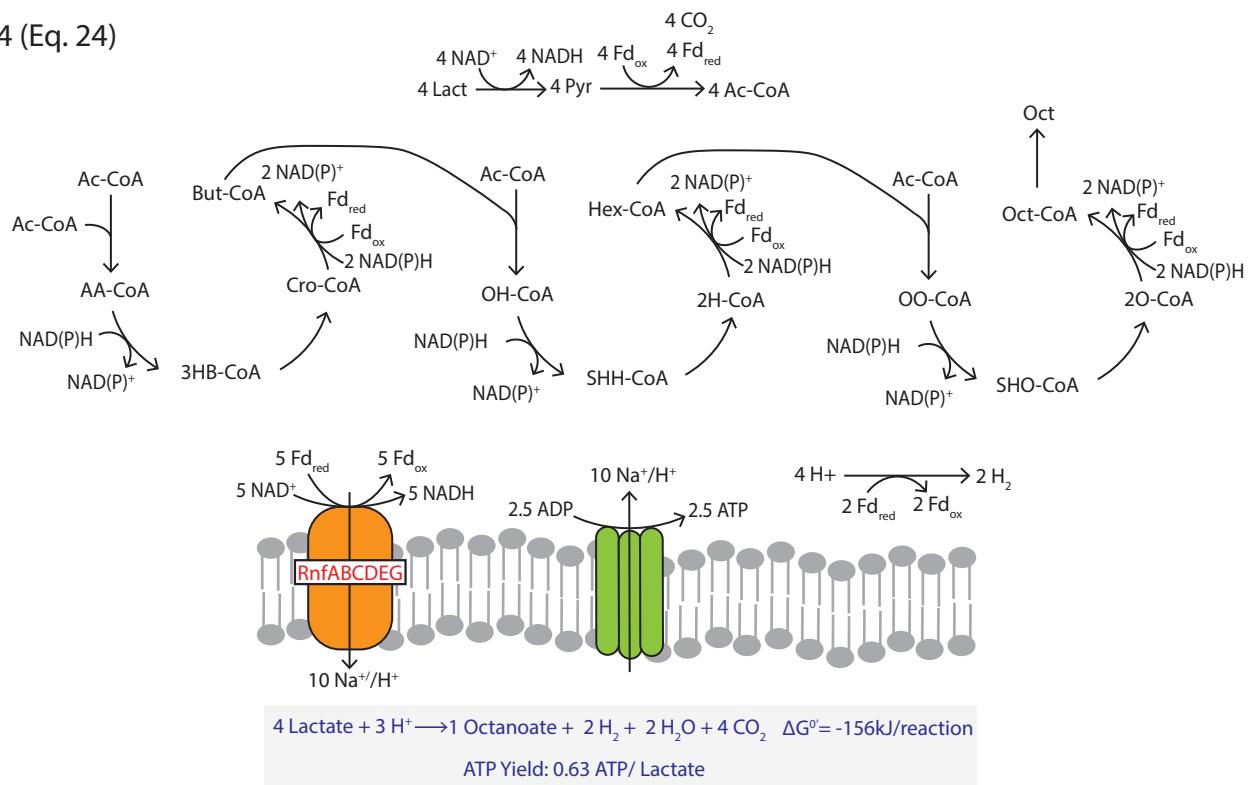


Fig S7.25 (Eq. 25)

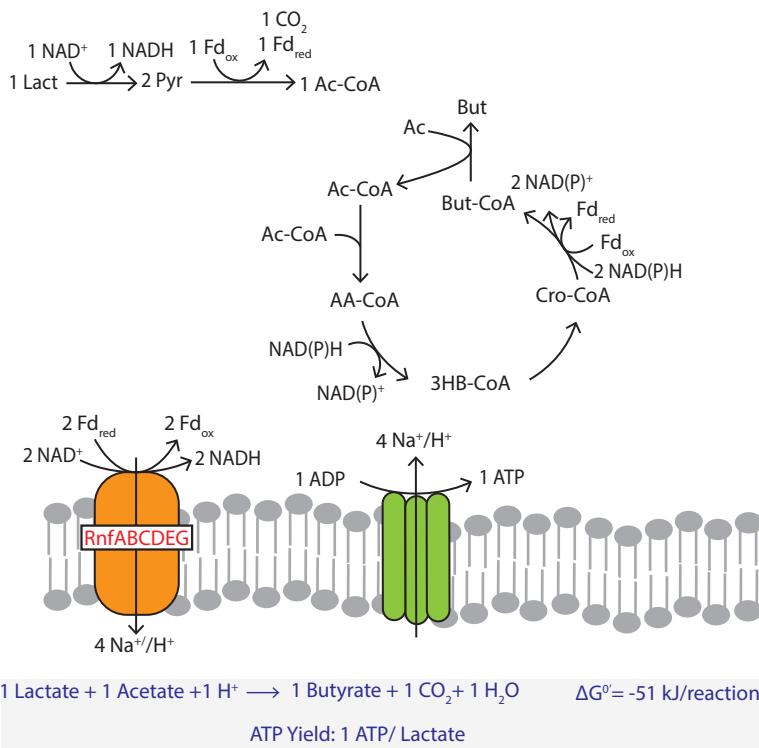


Fig S7.26 (Eq. 26)

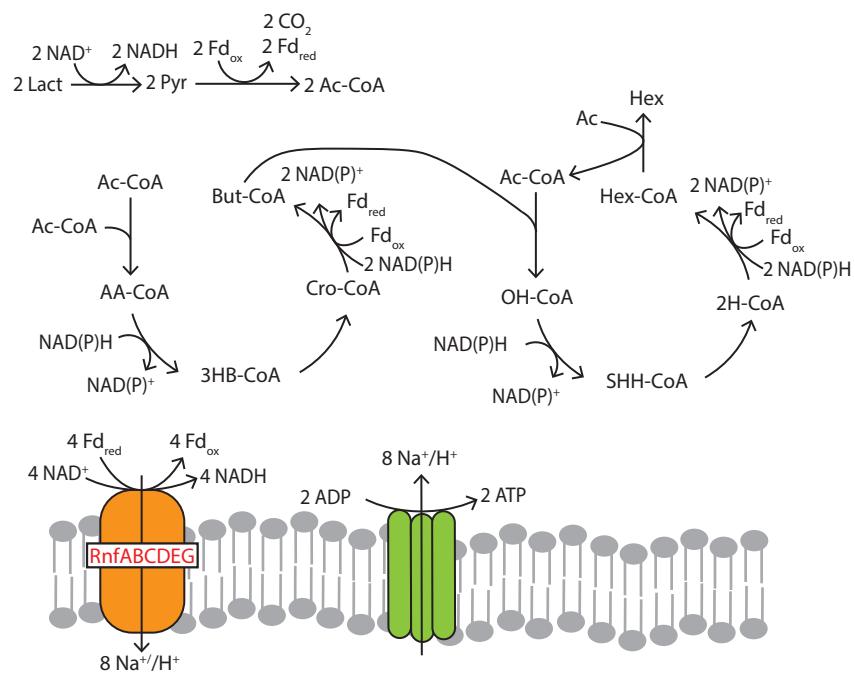


Fig S8.27 (Eq. 27)

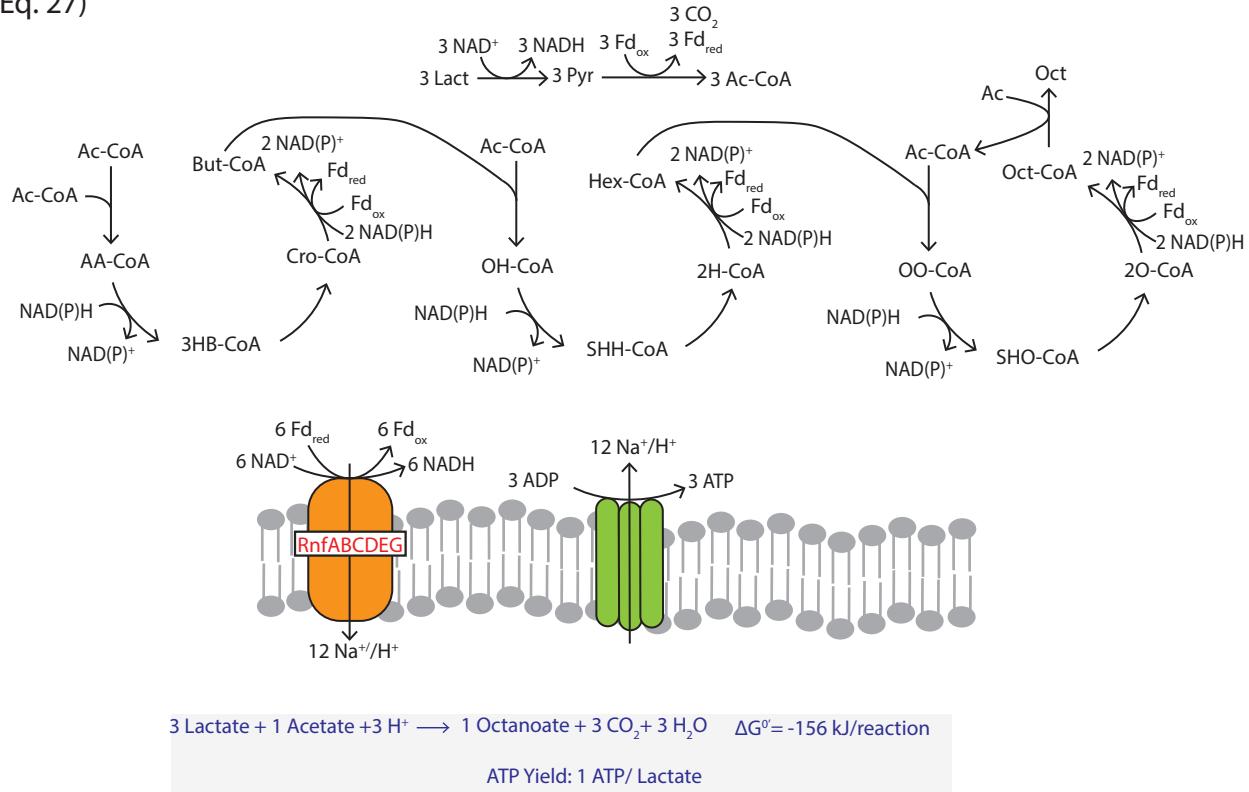
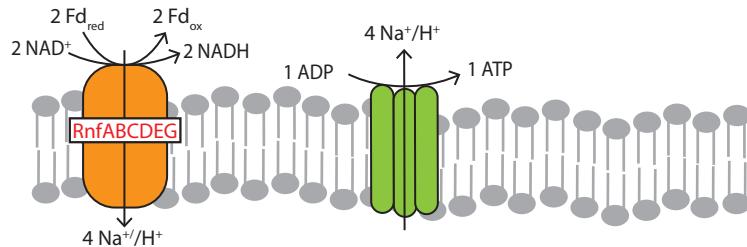
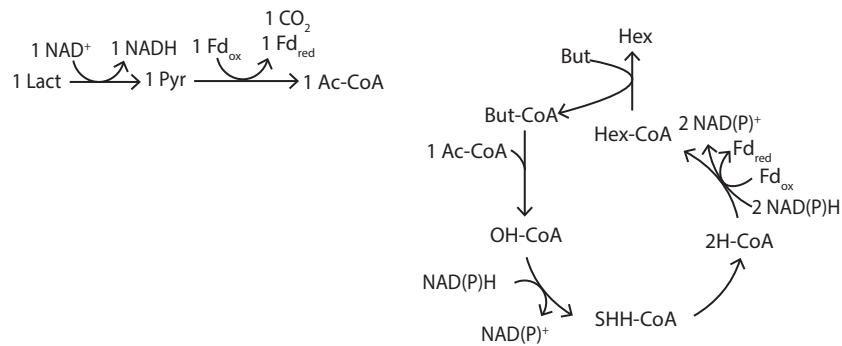
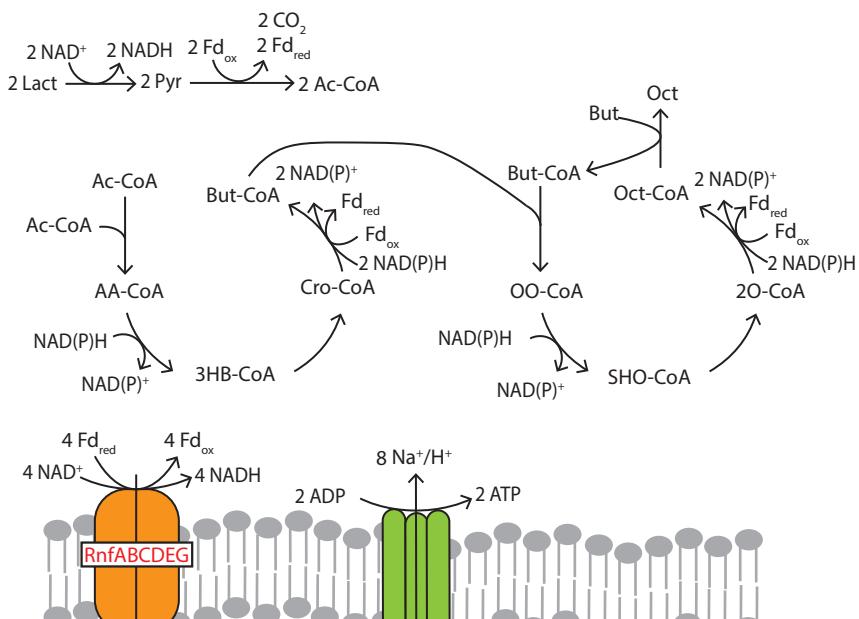


Fig S7.28 (Eq. 28)



ATP Yield: 1 ATP/Lactate

Fig S7.29 (Eq. 29)



ATP Yield: 1 ATP/Lactate

$\Delta G^\circ = -103 \text{ kJ/reaction}$

Fig S7.30 (Eq. 30)

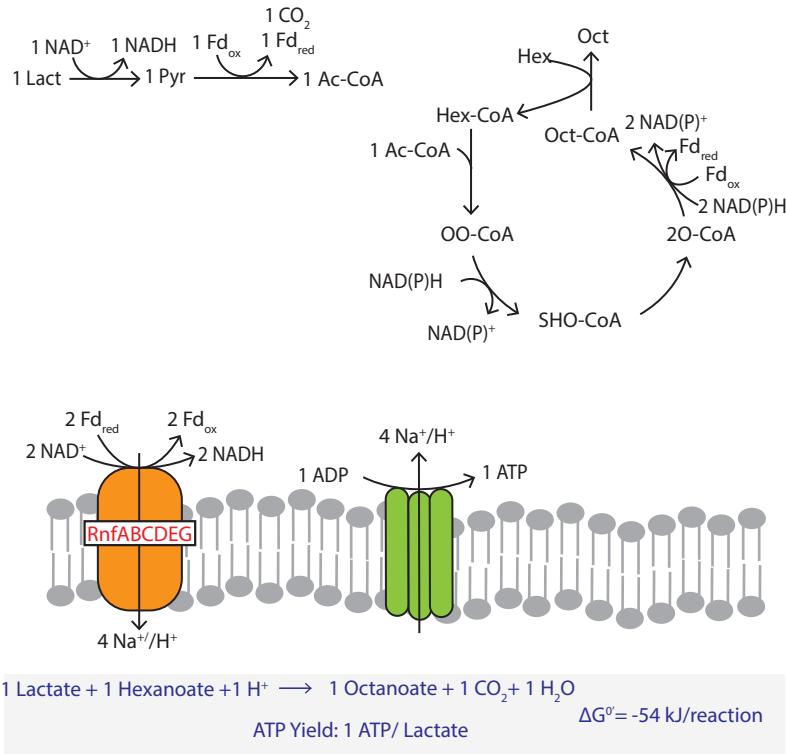


Fig S7.31 (Eq. 31)

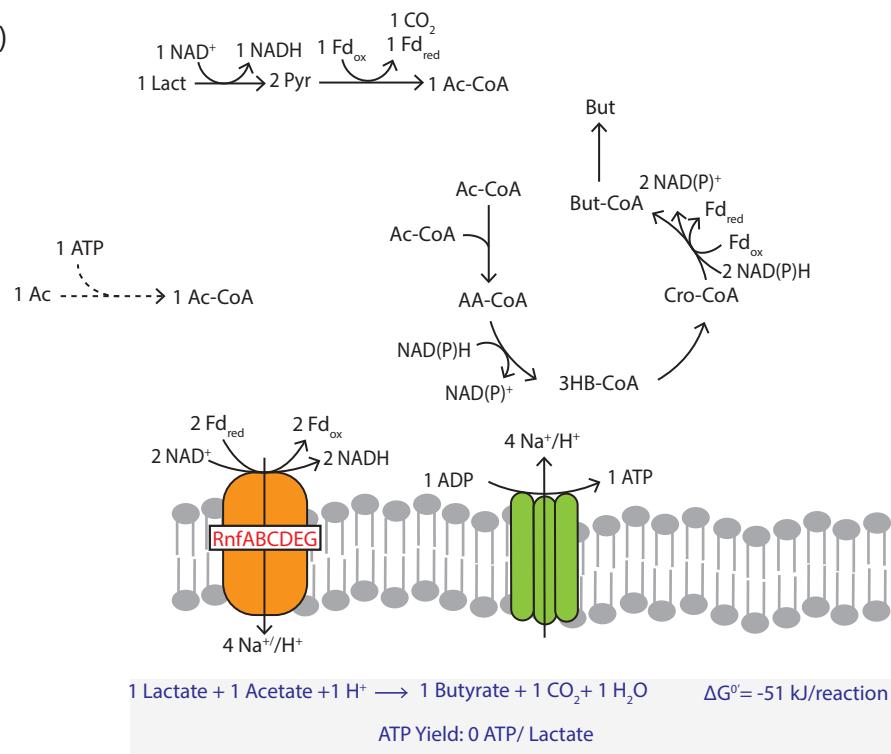


Fig S7.32 (Eq. 32)

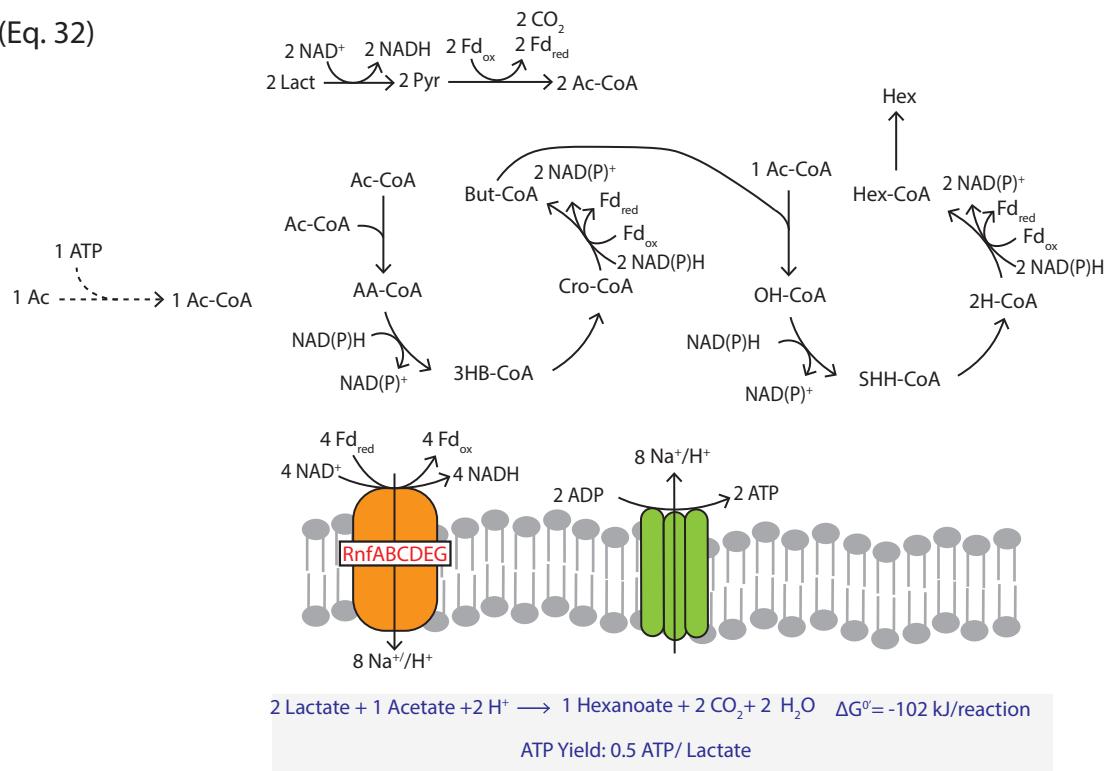


Fig S7.33 (Eq. 33)

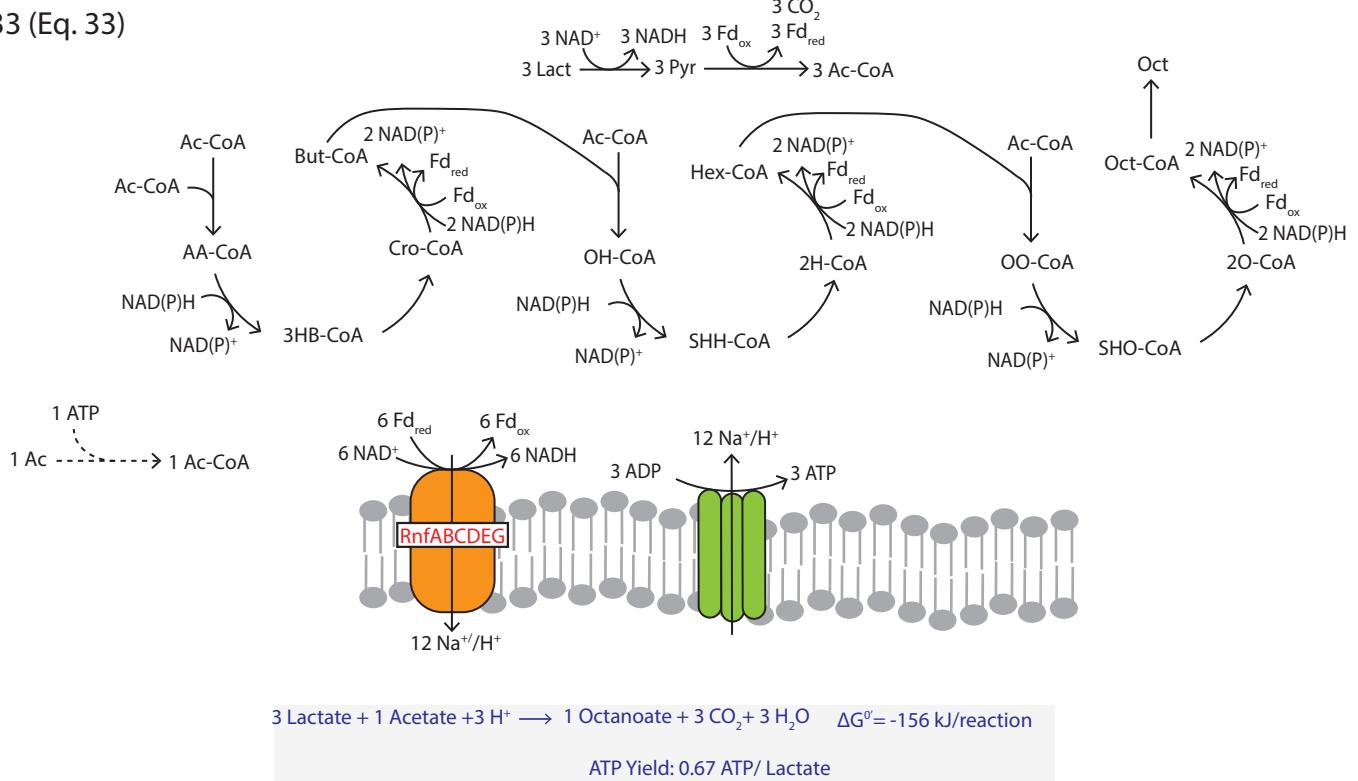


Fig S7.34 (Eq. 34)

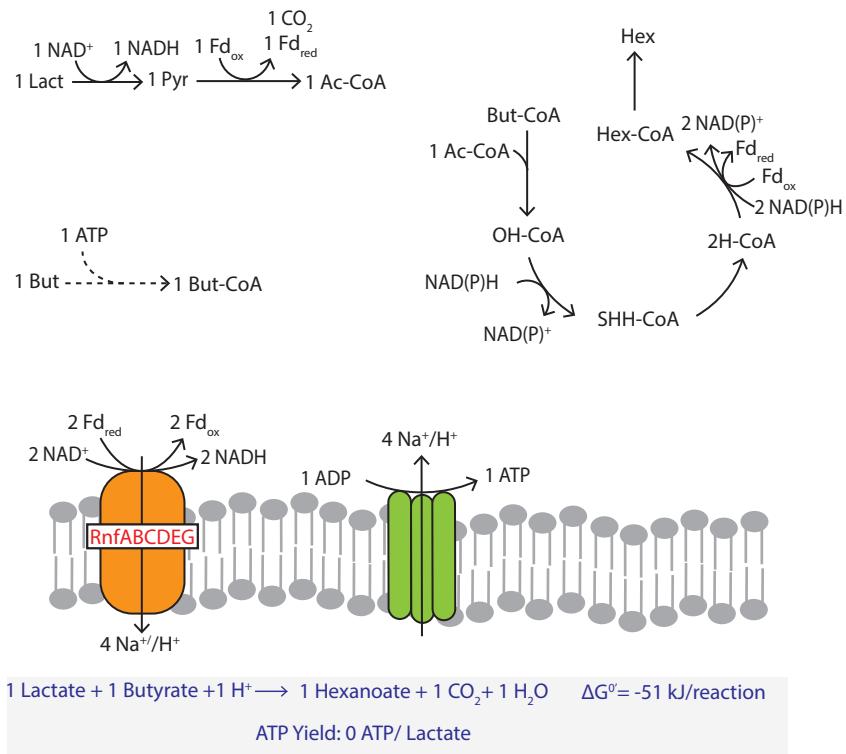


Fig S7.35 (Eq. 35)

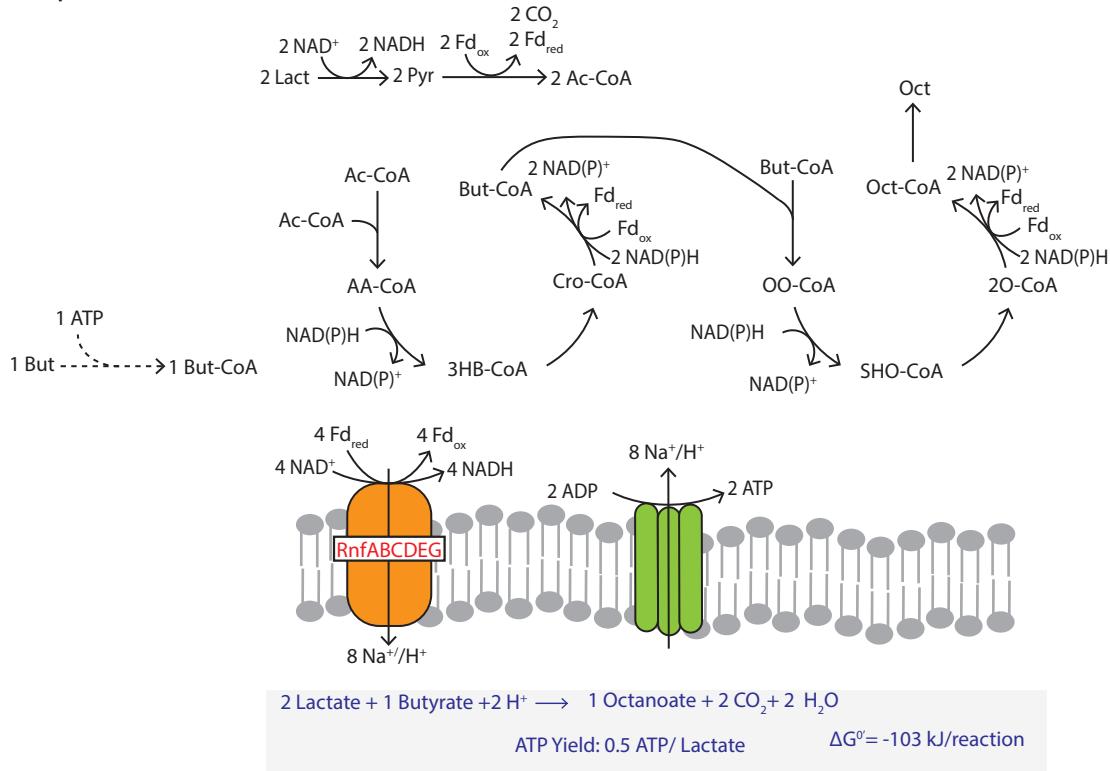


Fig S7.36 (Eq. 36)

