

Fig. S2. Pathway for fermentation of glucose to butyrate and acetate. (A) Typical pathway, which does not involve Ech. (B) Atypical pathway, which involves Ech and found in some rumen bacteria (*Butyrivibrio hungatei* JK615, *Butyrivibrio proteoclasticus* B316, *Pseudobutyrvibrio xylanivorans* Mz 5). The coefficient x is the number of acetate formed (consumed) and varies by bacterium (see Supporting Information Table S2). It is assumed that another reaction (e.g., that catalyzed by an antiporter) balances Na^+ and H^+ . Panel A is adapted from Louis and Flint (2017), and panel B is adapted from Hackmann and Firkins (2015). Panel A includes reactions shown in Supporting Information Fig. S1A, E, J, L, U, X, Y, AD, AE, AF, AY, BC, and BD. Panel B includes reactions shown in Supporting Information Fig. S1A, E, J, L, U, X, Y, AD, AE, AF, BB, BC, and BD. Reactions: 1. pyruvate:ferredoxin oxidoreductase; 2. acetyl-CoA C-acetyltransferase; 3. 3-hydroxybutyryl-CoA dehydrogenase; 4. enoyl-CoA hydratase; 5. butyryl-CoA dehydrogenase; 6. ferredoxin hydrogenase, cytoplasmic; 7. Rnf; 8. ATP synthase; 9. Ech hydrogenase. Abbreviations: Fd_{ox} = oxidized ferredoxin, Fd_{red} = reduced ferredoxin, NAD_{ox} = oxidized NAD, and NAD_{red} = reduced NAD.

Figure S2

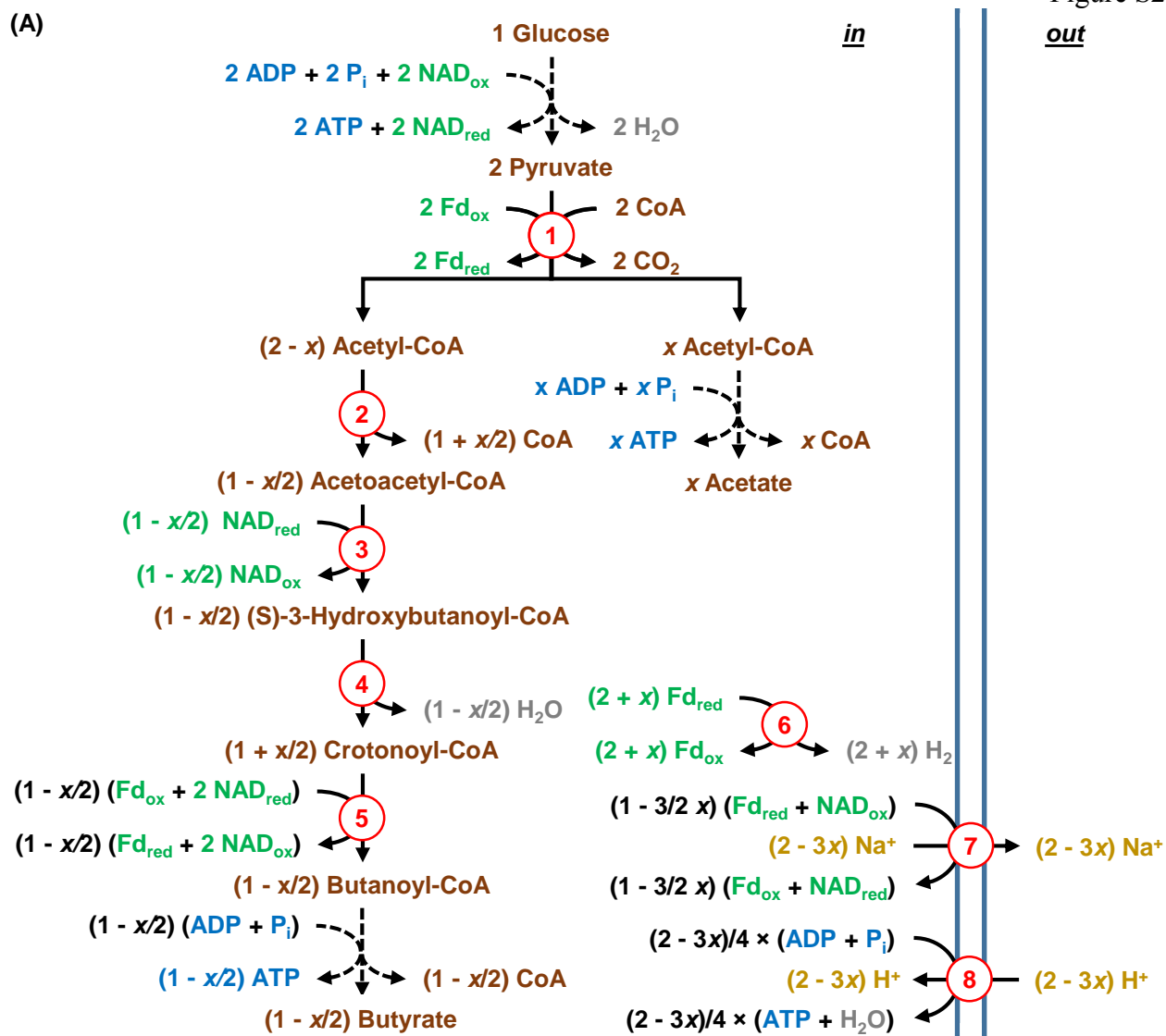


Figure S2

(B)

