



Supplementary Figure 4 Time profiles of batch fermentation of *M. succiniciproducens* under various conditions. Time profiles of cell concentration (OD_{600}), glucose concentration ($g\ l^{-1}$) and the concentrations of succinic acid ($g\ l^{-1}$), acetic acid ($g\ l^{-1}$, p), lactic acid ($g\ l^{-1}$, \downarrow) and formic acid ($g\ l^{-1}$, \leq) during the cultivation under (a) N_2 atmosphere (ref. 2), (b) CO_2 atmosphere (ref. 2) and (c) CO_2 - H_2 atmosphere (molar ratio of 1:1; this study) at 39 °C and pH 6.5. Cells were cultivated in a jar fermentor (2.5 l, KoBioTech, Incheon, Korea) containing 1 l of MH2 medium plus 20 $g\ l^{-1}$ of glucose and 1 $mg\ l^{-1}$ of $Na_2S \cdot 9H_2O$. The MH2 medium contains per liter: 5 g yeast extract, 3 g K_2HPO_4 , 2 g NaCl, 2 g $(NH_4)_2SO_4$, 0.2 g $CaCl_2 \cdot 2H_2O$ and 0.2 g $MgCl_2 \cdot 6H_2O$. Gases, scrubbed free of oxygen by a gas purifier (P.J. Cobert Associates, Inc., St. Louis, Missouri, USA), were sparged at 0.25 $l\ min^{-1}$ during the cultivation. In cases of CO_2 and CO_2 - H_2 atmosphere cultures, 7 g of Na_2CO_3 was supplemented to avoid acidification of culture. It should be noted that the culture medium used for all cultures was MH2 medium. In reference #2, the medium used for culture a and b was written as MH medium, which is a typo.