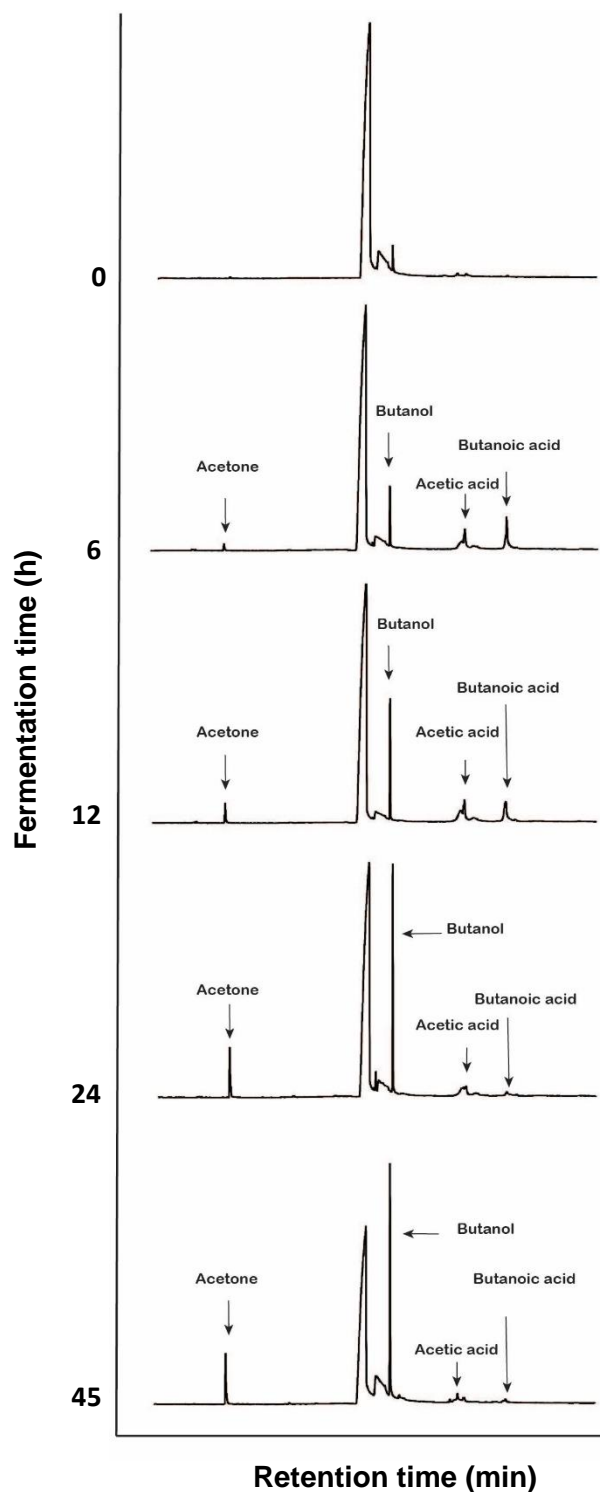
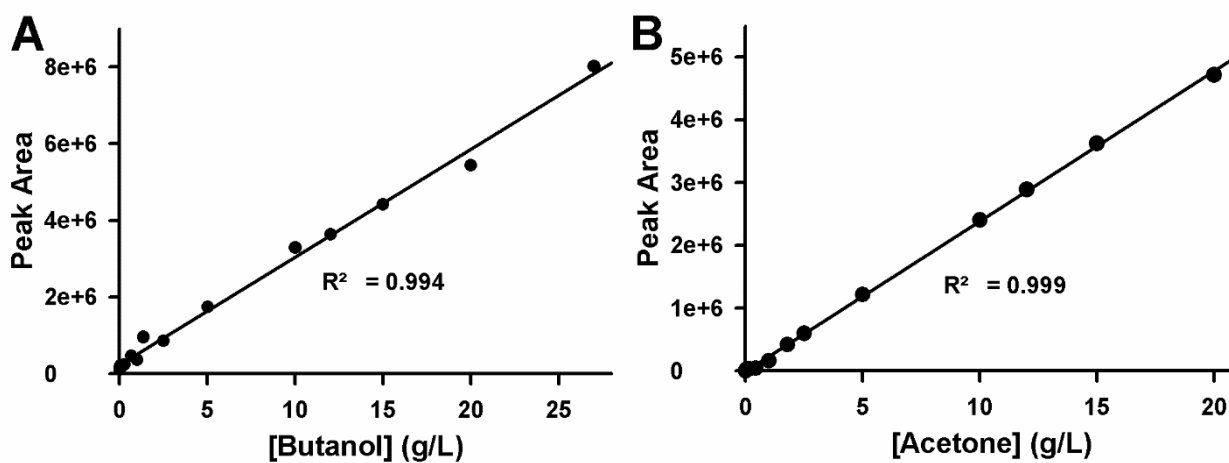


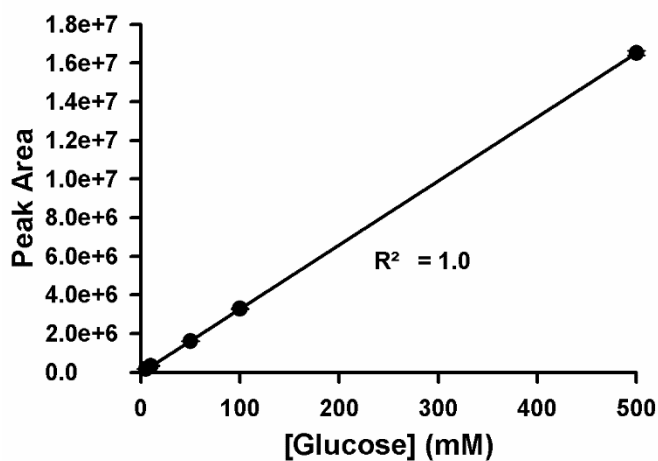
## Supplemental Data



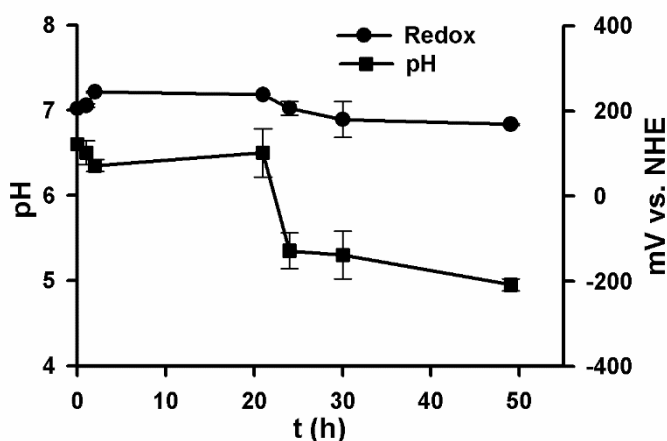
**Fig. S1.** GCMS Chromatographs from *C. saccharoperbutylacetonicum* N1-4(HMT) YETM  $40 \text{ g L}^{-1}$  batch fermentation for the identification of acetone and butanol as well as acetic acid and butanoic acid. 2 mL of cell culture was taken from cells growing in a batch fermentation and cells were removed via centrifugation. Sample supernatants were applied to the GCMS instrument and peak positions were identified using known standards.



**Fig. S2.** GCMS standard curves. Solvents were diluted in water and were analysed via GCMS. A) Acetone. B) Butanol.



**Fig. S3.** Glucose standard curve. Glucose was quantitated via HPLC with refractive index detection as described in the Materials and Methods section. Measurements are averages of 3 repeats and error bars show standard deviations.



**Fig. S4.** Monitoring of growth parameters and metabolites for a *C. saccharoperbutylacetonicum* N1-4(HMT) batch fermentation on apple pomace. Output obtained for pH and redox (mV vs. Normal Hydrogen Electrode (NHE)). Final concentrations of butanol and acetone were measured as  $(0.6 \pm 0.3 \text{ gL}^{-1})$  and  $(0.4 \pm 0.03 \text{ gL}^{-1})$ , respectively. Fermentations were performed in duplicate and error bars show standard deviation.

Fermenter	Feedstock	OD <sub>600</sub>	pH control	Butanol (g/L)	Acetone (g/L)	Source
Current system	YETM + glucose	7.2	MES	$13.4 \pm 0.8$	$4.9 \pm 0.5$	This paper
Eppendorf BioFlo 120	P2 medium	15.3	NaOH	$15.3 \pm 0.1$	$6.7 \pm 0.1$	(21)
Eppendorf BioFlo 120	TGY + lactose	17.4	NaOH	$17.4 \pm 0.85$	$7.6 \pm 0.53$	(22)
Multifors 5L bioreactor (Infors HT)	PGY + P2 glucose(40 g /L)	2	Not controlled	9.3	3.4	(23)
LiFlus GX; Biotron 5L	CGM + glucose	10.0	Ammonia	17.6	4.4	(24)

**Table S1.** Comparison of current solvent yields with published ABE fermentation data. Cultures of solventogenic clostridia were grown in different growth media either in the current fermenters or a commercially available system. Abbreviations: CGM, clostridia growth medium; TGY, tryptone-glucose-yeast extract medium; YETM, yeast extract tryptone medium.