

SUPPLEMENTARY INFORMATION

ACIDOGENIC FERMENTATION OF DAIRY BY-PRODUCTS FOR THE UTILIZATION OF VOLATILE FATTY ACIDS IN PHBV PRODUCTION BY *HALOFERAX MEDITERRANEI*

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Data corresponding to **Figure 1** of the manuscript

Mesophilic fermentation									
	Hac	Hpro	IsoHBu	Hbu	IsoHVa	Hva	Hcap	TVFA	Sugars
Time (days)	mgCOD/L	mgCOD/L	mgCOD/L	mgCOD/L	mgCOD/L	mgCOD/L	mgCOD/L	mgCOD/L	mg COD/L
0	0	0	0	0	0	0	0	0	5125,55
1	302,95	138,43	0,00	172,56	0,00	0,00	0,00	613,94	1699,31
2	1147,31	1536,01	0,00	259,74	17,26	0,00	0,00	2960,33	133,42
3	1296,27	1689,49	6,01	305,26	42,74	39,05	0,00	3378,82	103,61
4	1348,14	1675,56	7,36	314,32	43,73	61,22	0,00	3450,33	97,79
7	1490,89	1674,75	12,66	329,68	71,44	214,94	35,13	3829,49	94,88
8	1383,40	1636,24	18,12	316,10	77,51	205,28	40,60	3677,26	83,25
9	1223,91	1508,07	11,45	296,95	83,44	201,36	35,02	3360,20	106,88

Thermophilic fermentation									
	Hac	Hpro	IsoHBu	Hbu	IsoHVa	Hva	Hcap	TVFA	Sugars
Time (days)	mgCOD/L	mgCOD/L	mgCOD/L	mgCOD/L	mgCOD/L	mgCOD/L	mgCOD/L	mgCOD/L	mg COD/L
0	0	0	0	0	0	0	0	0	4126,27
1	279,20	16,42	1,80	394,37	37,48	0,00	0,00	729,26	2508,00
2	256,67	462,57	16,78	2025,41	46,92	0,00	0,00	2808,35	129,69
3	304,03	432,08	13,14	1908,87	69,33	0,00	0,00	2727,45	127,34
7	360,83	435,07	16,20	1836,00	89,06	0,00	0,00	2737,16	155,91
8	782,19	495,08	28,76	2047,73	129,13	0,00	0,00	3482,90	122,97
9	778,26	497,73	27,86	2059,34	122,48	0,00	0,00	3485,67	129,02

Data corresponding to **Figure 2** of the manuscript

Concentration	WAF1		WAF2		WAF3	
	100%	50%	100%	50%	100%	50%
PHBV (g/L) (1)	0.2012 ± 0.009	0.1068 ±0.002	0.6424 ±0.01	0.3078 ±0.0045	0.6026 ±0.01	0.6204 ±0.0015
OD (625nm)	7.1±0.3	2.7±0.05	7.6±0.38	4.5±0.09	8.0±0.25	8.3±0.38
Reinoculation						
PHBV (g/L) (R)	0.296 ±0.004	0.1304 ±0.01	0.8182 ±0.01	0.4058 ±0.03	1.3922 ±0.01	0.8242 ±0.025
OD (625nm)	10.8±0.21	4.9±0.09	13.0±0.65	7.2±0.2	18±0.9	17±0.8



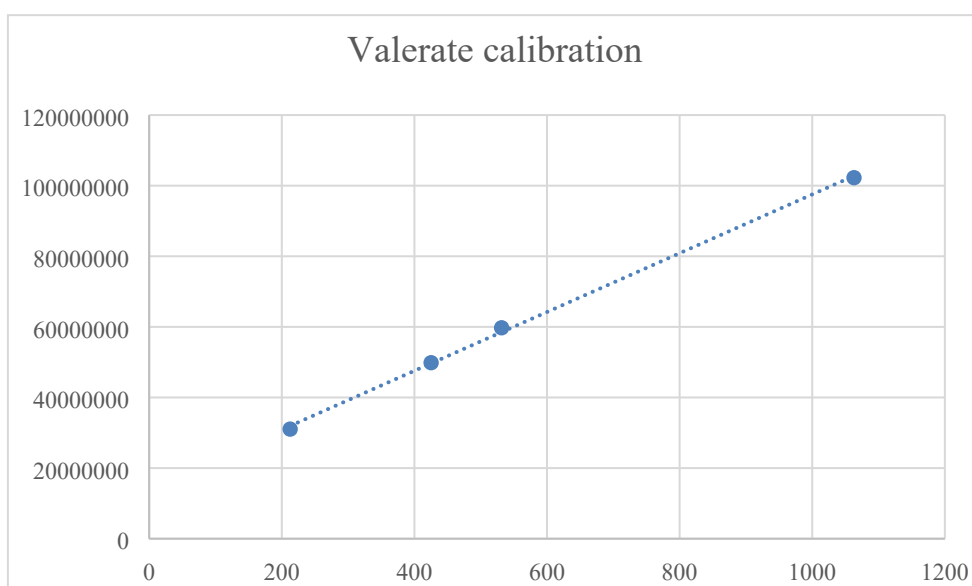
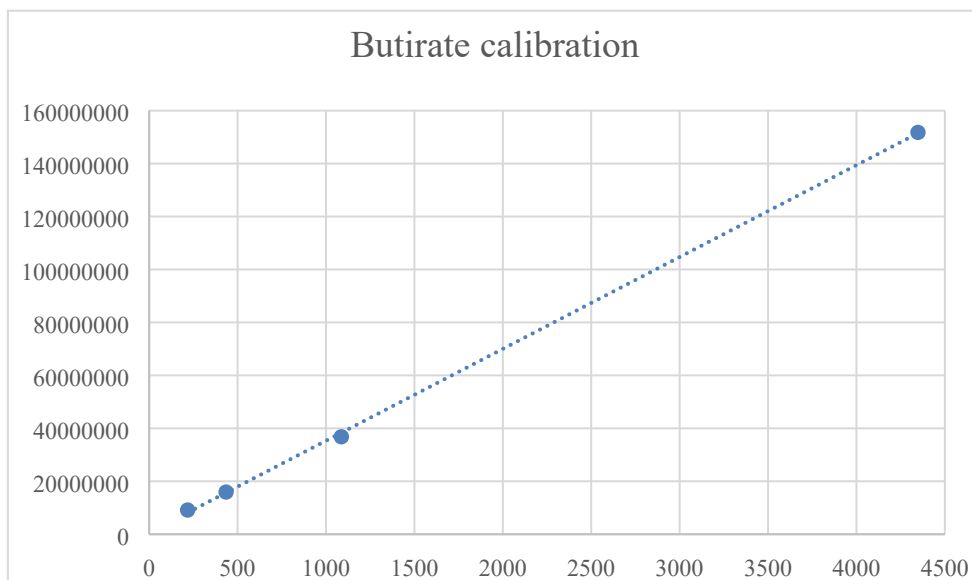
Figure S1. *H. mediterranei* fermentations in shake flask experiments.

Data corresponding to **Figure 3** of the manuscript

Concentration	WAF1		WAF2		WAF3	
	100%	50%	100%	50%	100%	50%
PHBV (g/L) (R)	0.296 ±0.004	0.1304 ±0.01	0.8182 ±0.01	0.4058 ±0.03	1.3922 ±0.01	0.8242 ±0.025
HV(%)	14.6	17.9	2.9	4.1	1.9	1.4
HB(%)	85.3	82.1	97.1	95.9	98.1	98.6

Raw data

Calibration curves for shake flask experiment with methyl (R)-3-hydroxybutyrate and methyl (R)-3-hydroxyvalerate (from methanolysis of butyric and valeric acids) containing benzoic acid as an internal standard was constructed.

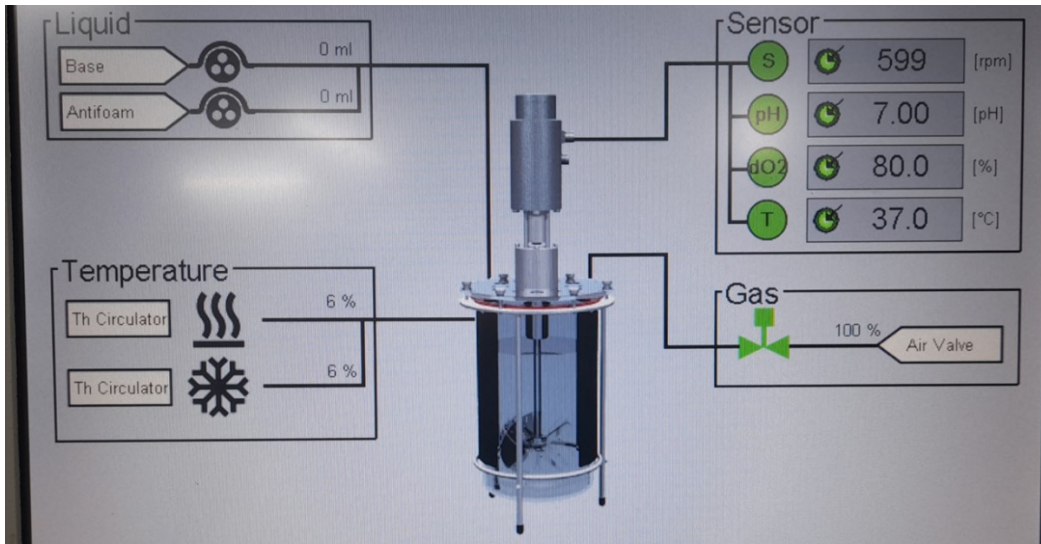


Results from GC-MS

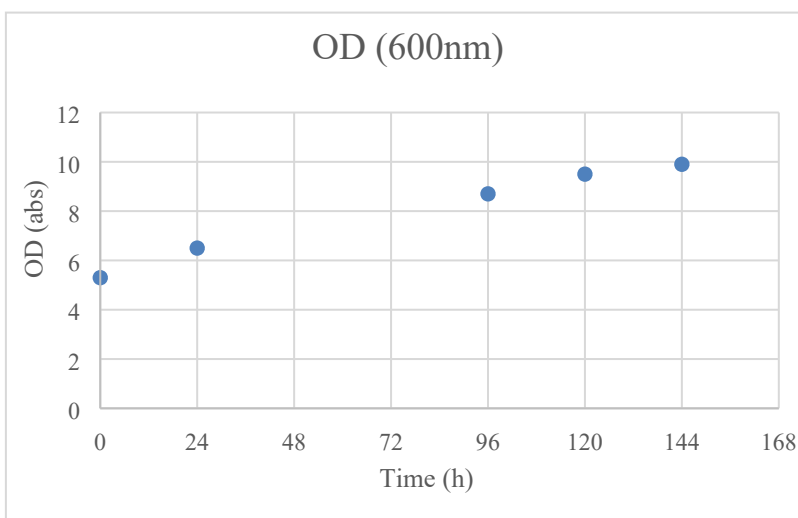
	WAF1		WAF2		WAF3	
HV peak area	28108663	12187305	12537277	8725971	13979077	5992282
HB peak area	44452384	19188968	138352648	68101791	237447381	141600291
HV ppm	217	117	121	84	135	57
HB ppm	1263	535	3970	1945	6826	4064
Biomass (mg)	58.9	33.7	63.5	36.4	175.10	76.9

Sample (mL)	2	2	2	2	2	2
(HV+HB) (g/L)	0.296	0.1304	0.8182	0.4058	1.3922	0.8242

Data corresponding to **Figure 4** of the manuscript



measurements	
time (h)	OD (abs)
0	5,3
24	6,5
96	8,7
120	9,5
144	9,9



time (h)	Dry Cell Weigth (g/L)	HV peak area	HB peak area	Total ppm	Biomass sample (mg)	Sample (mL)	(gPHA/gbiomass)	PHA accumulation(%)	(g biomass/L)	g/L PHA (bioreactor)
96	5,97	99	8942	9040	59,7	2	0,3028	30,3	5,97	1,8080
120	5,49	171	11976	12167	54,9	2	0,4432	44,3	5,49	2,4333
144	5,69	148	10962	11111	56,9	2	0,3905	39,1	5,69	2,2221

Calibration curves for bioreactor experiments with methyl (R)-3-hydroxybutyrate and methyl (R)-3-hydroxyvalerate (from methanolysis of butyric and valeric acids) containing benzoic acid as an internal standard was constructed.

