

Supplementary materials

Supplementary figures

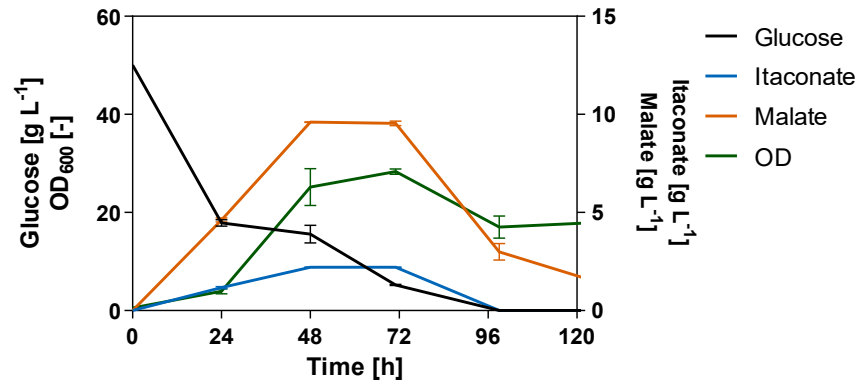


Figure S1 Shake flask cultivation experiment of *M. mackinlayi* BRIP 52549a. Growth via OD₆₀₀ measurement (green line), glucose concentration (black line), malate production (orange line) and itaconate production (blue line) are visualized during small scale (50 ml) cultivation experiment using MTM medium and 50 g L⁻¹ glucose and 0.8 g L⁻¹ NH₄Cl. Error bars indicate the deviation from the mean for n=3.

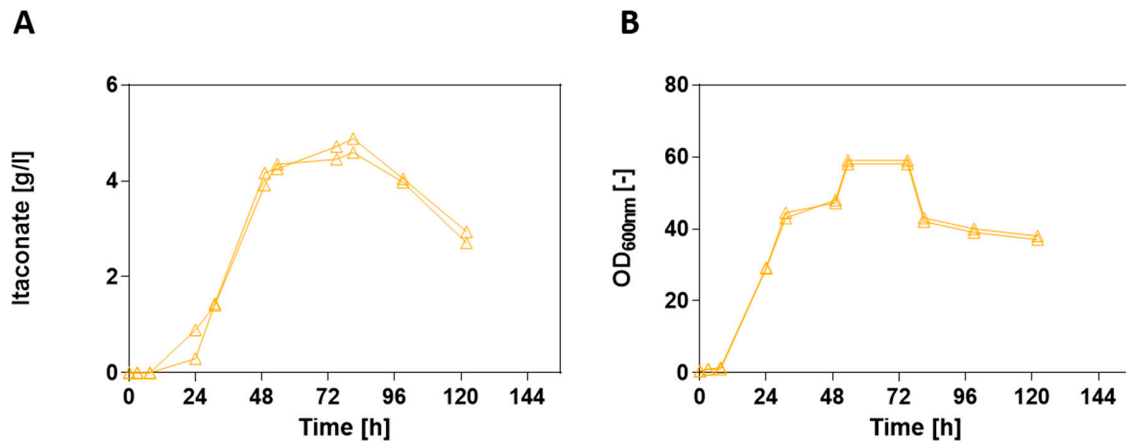


Figure S2 Controlled-batch fermentation of *U. maydis* No. 512. A: Itaconate production and B: growth via OD₆₀₀ measurement on in a bioreactor containing MTM medium using 50 g L⁻¹ glucose, 6.25 g L⁻¹, 0.8 g L⁻¹ NH₄Cl, 80% DOT, at pH 6.5 [1].

Supplementary tables

Table S1 Ustilaginaceae strains screened in this study. Numbers (#) indicate the strain number.

No.	Strain		Origin
#2169	<i>Ustilago maydis</i>	Nr. 482	Prof. M. Bölker, Philipps University Marburg, Germany
#2172	<i>Ustilago maydis</i>	Nr. 485	
#2136	<i>Ustilago maydis</i>	Nr. 198	
#2212	<i>Sporisorium exsertum</i>	RK 033	CBS 133249
#2213	<i>Sporisorium scitamineum</i>	UMa698, Sscl4, JS109, RK 109, Mating type MAT1	CBS 131457
#2214	<i>Sporisorium walkeri</i>	RK 031	CBS 131462
#2215	<i>Ustanciosporium gigantosporum</i>	UMa706	CBS 131464
#2220	<i>Ustilago vetiveriae</i>	RK 075	CBS 131474
#2701	<i>Ustilago trichophora</i>		NBRC 100157
#2706	<i>Ustilago cynodontis</i>		NBRC 9727
#2708	<i>Ustilago rabenhorstiana</i>		NBRC 8995
#1946	<i>Pseudozyma antarctica</i>		NRRL Y - 808
#2814	<i>Macalpinomyces mackinlayi</i>	BRIP 52549 a	Queensland Plant Pathology Herbarium, Australia
#2816	<i>Macalpinomyces ordensis</i>	BRIP 26904 a	
#2821	<i>Ustilago curta</i>	BRIP 26929 a	
#2826	<i>Ustilago lituana</i>	BRIP 46795 a	
#2836	<i>Ustilago xerochloae</i>	BRIP 60876 a	

Supplementary references

1. Ullmann, L.; Phan, A.N.T.; Kaplan, D.K.P.; Blank, L.M. Ustilaginaceae Biocatalyst for Co-Metabolism of CO₂-Derived Substrates toward Carbon-Neutral Itaconate Production. *J. Fungi* **2021**, *7*, 98.