

Electronic Supplementary Information (ESI) for:

Bioconversion of oxygen-pretreated Kraft lignin to microbial lipid

with oleaginous *Rhodococcus opacus* DSM 1069

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Figure captions

Fig. S1. Comparing CFU results of the two fermentation system: Kraft lignin (the top line), O₂-pretreated Kraft lignin (the bottom line), 0.1 ml samples were pipetted from fermentation systems and diluted, followed by incubation in nutrient medium. The dilution ratios of KL 0-7d and O₂-KL 0d are 10², O₂-KL 1-7d are 10⁴.

Fig. S2. Gel permeation chromatograms (measured with UV detector) (above) and changes of the weight average molecular weight (bottom) of different lignin samples.

Fig. S3. Changes of hydroxyl group contents of different lignin samples, determined by quantitative ³¹P NMR after derivatization with TMDP.

Fig. S4. Method of sample separation to obtain the residue lignin and cells.

Table S1. Cell specific, lipid specific yields and cell volumetric productivities of *R. opacus* DSM 1069 growing on untreated Kraft lignin.

Fig. S1

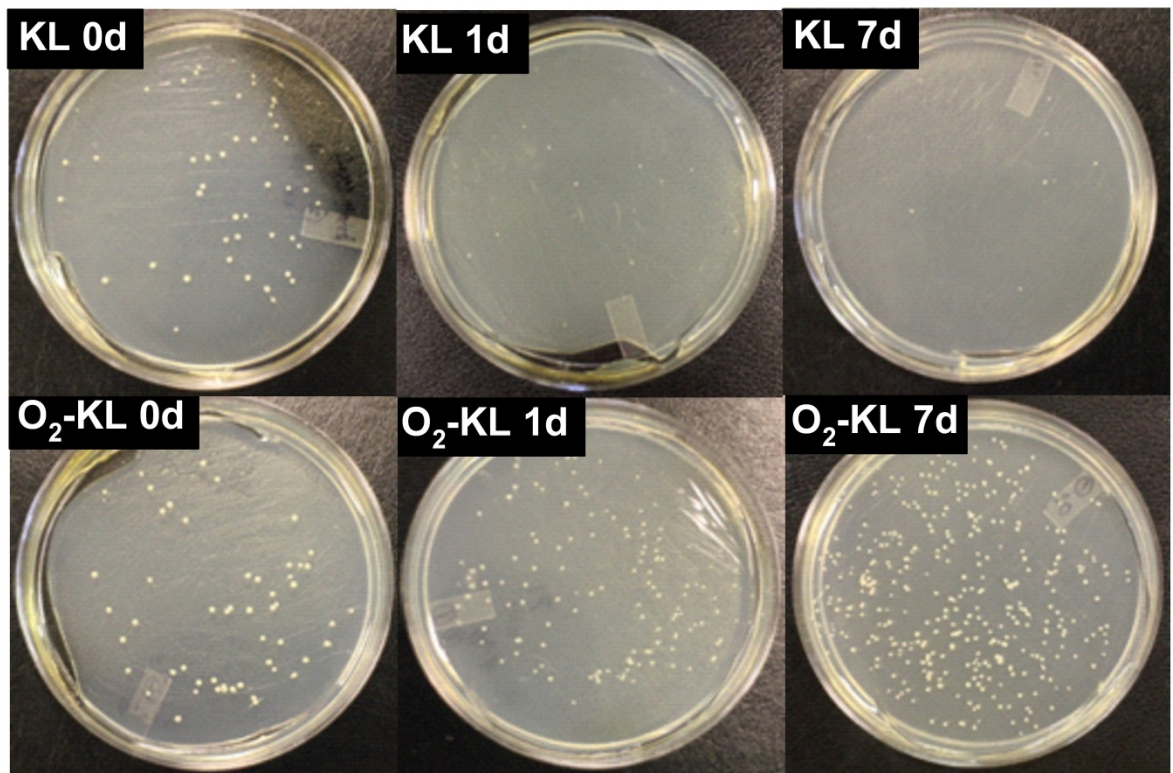


Fig. S2

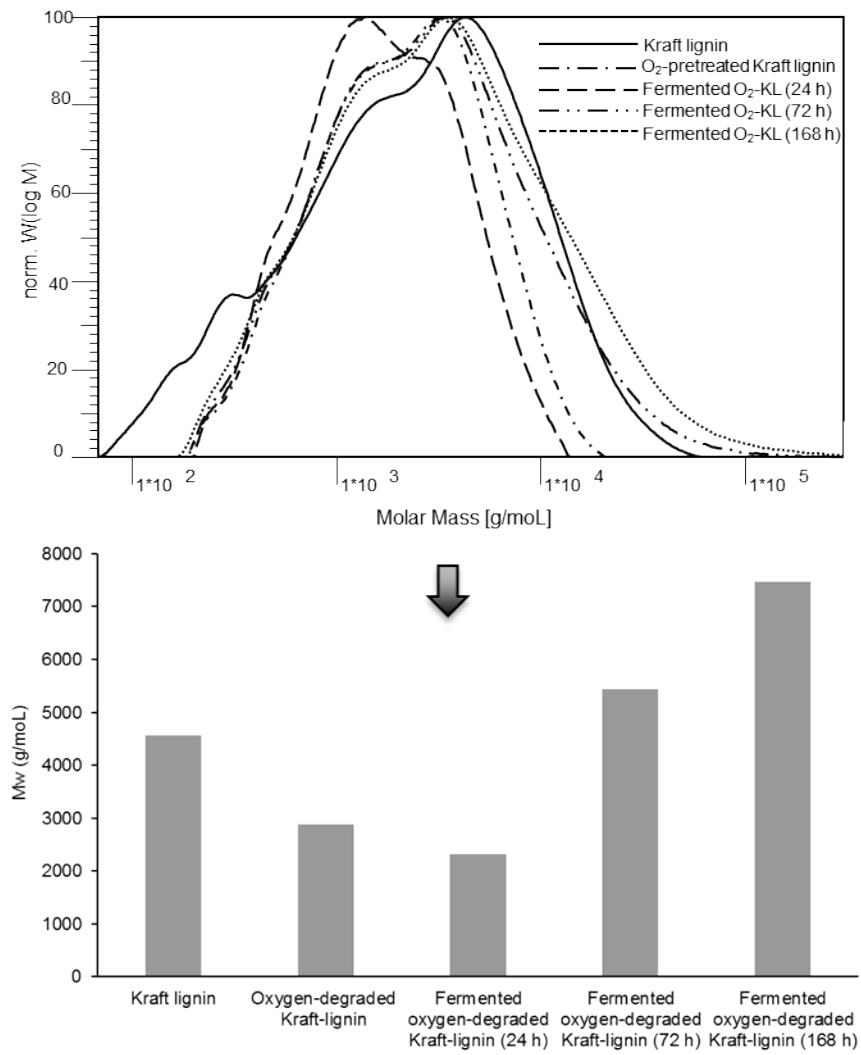


Fig. S3

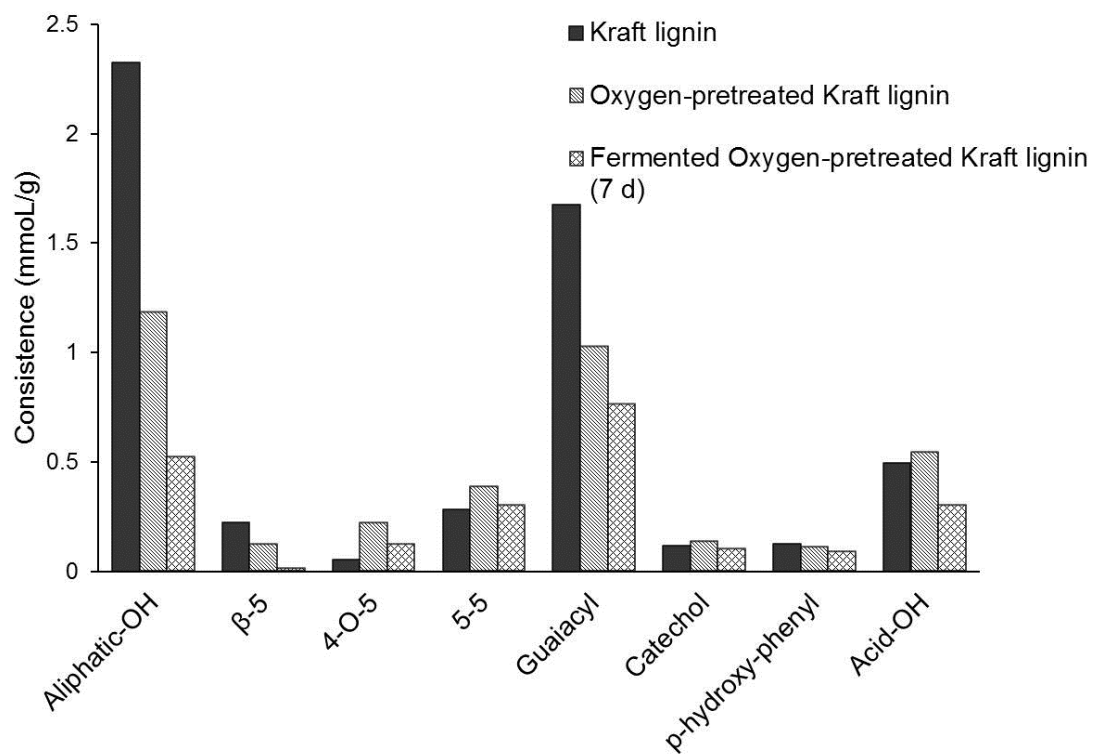


Fig. S4

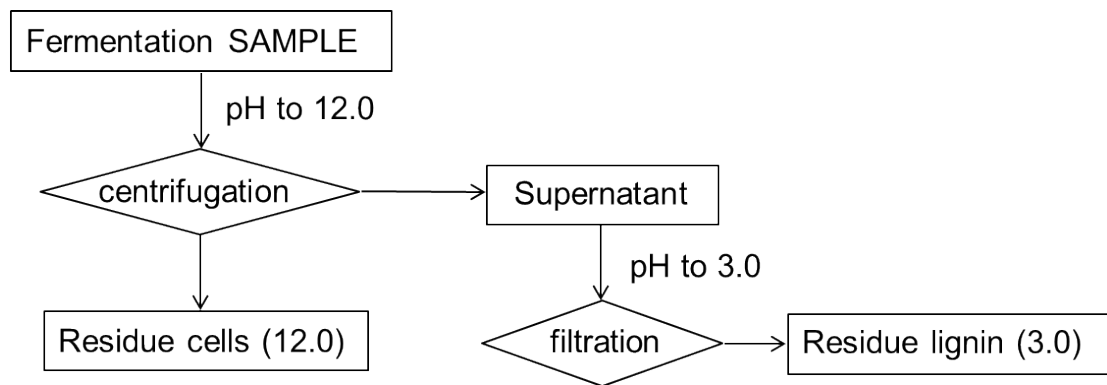


Table S1 Cell specific, lipid specific yields and cell volumetric productivities of *R. opacus* DSM 1069 growing on untreated Kraft lignin.

Productivities	Kraft lignin			
	12 h	36 h	60 h	120 h
Y_{cell} [g/g KL]	0.102	0.081	-	-
Y_{lipid} [g/g KL]	0.005	-	-	-
dc_{cell}/dt [mg/ml*day]	0.122	0.032	-	-