

**Table 2**

Parameter values used for model simulation.

Parameter	Value	95% Conf. Interval	Units	Experiment
$I_{1,2}$	2.971	-	-	3
$I_{2,1}$	0	-	-	3
$K_{I,1}$	0.439	0.049	mM	1
* $K_{I,1}$	0.465	0.044	mM	1
$K_{I,1,2}$	19.418	23	mM	3
$K_{I,1-P,2}$	0.84	0.038	mM	3
$K_{Iq,1,2}$	7.248	2.3	mM	3
$K_{Iq,1-P,2}$	0.823	0.028	mM	3
$K_{S,1}$	0.099	0.054	mM	1
* $K_{S,1}$	0.096	0.04	mM	1
$K_{S,2}$	43.047	34	mM	2
$K_{S,2}$	45.781	-	mM	2
$R_{max,1}$	0.076	$6.9 \times 10^{-4}$	$\text{mmol}_{m\text{-xylene}} \text{g}_{\text{biom}}^{-1} \text{h}^{-1}$	1
* $R_{max,1}$	0.072	$5.7 \times 10^{-4}$	$\text{mmol}_{m\text{-xylene}} \text{g}_{\text{biom}}^{-1} \text{h}^{-1}$	1
$R_{max,2}$	0.029	$4.4 \times 10^{-4}$	$\text{mmol}_{\text{succinate}} \text{g}_{\text{biom}}^{-1} \text{h}^{-1}$	2
$\mu_{max,1}$	0.931	0.17	$\text{h}^{-1}$	1
* $\mu_{max,1}$	0.979	0.15	$\text{h}^{-1}$	1
$\mu_{max,2}$	2.637	0.013	$\text{h}^{-1}$	2

1. Single-Substrate Biodegradation: *m*-xylene Only; 2. Single-Substrate Biodegradation: Succinate Only; 3. Succinate - *m*-xylene Mixture: Parameter Estimation Experiment; \*. Parameter value determined without information from the TOL model.