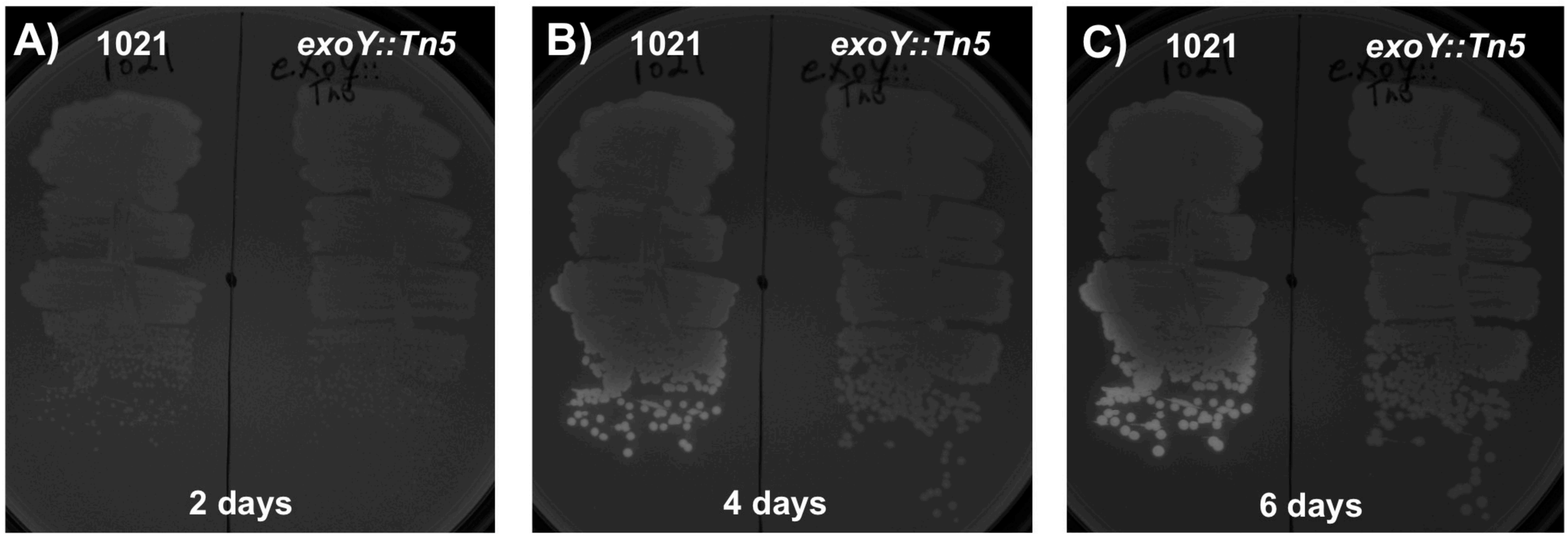
Supplemental Table 1--Composition of defined media tested

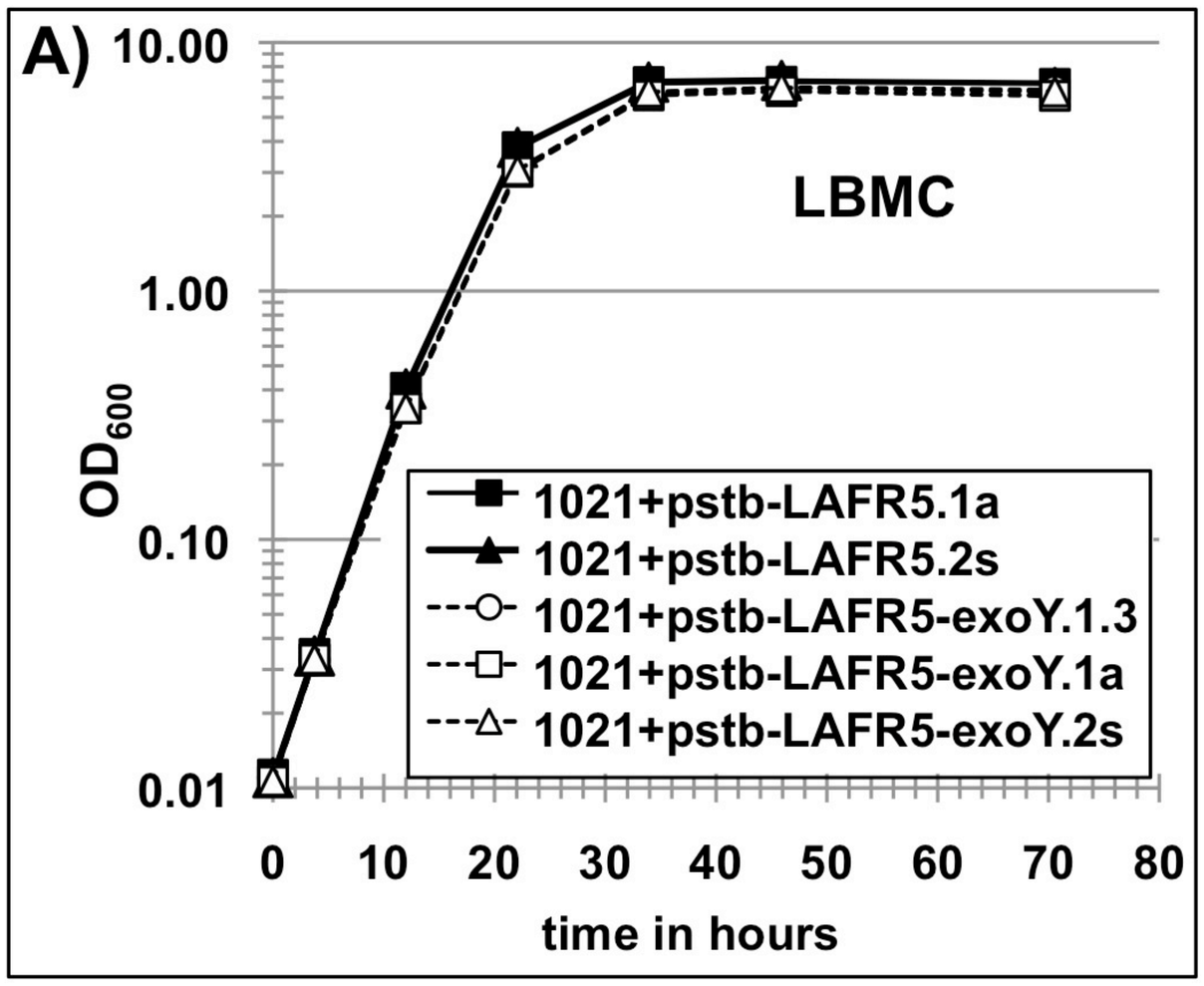
component of trace elements	mM concentration of each compound	M9 ammonium/sucrose	M9 glutamate/mannitol	GMS (glutamate/mannitol	Jensen's glutamate/mannitol
	Na_2HPO_4	155.0	155.0	0	0
	KH_2PO_4	44.1	44.1	0	0
	NaCl	17.1	17.1	0	3.4
	NH_4Cl	9.4	0	0	0
	K_2HPO_4	0	0	5.7	1.1
	$MgSO_4.7H_2O$	1.0	1.0	0.8	0.8
	$CaCl_2.2H_2O$	0.3	0.3	0.4	0
	$CaHPO_4$	0	0	0	7.3
GMS and Jensen's	$FeCl_3.6H_2O$	0	0	9.2E-03	0.4
GMS and Jensen's	H_3BO_3	0	0	1.6E-04	1.6E-02
GMS and Jensen's	$ZnSO_4.7H_2O$	0	0	3.5E-05	3.5E-03
GMS	$CoCl_2.6H_2O$	0	0	4.2E-05	0
GMS and Jensen's	$CuSO_4.5H_2O$	0	0	4.0E-05	2.0E-03
GMS and Jensen's	$MnCl_2.4H_2O$	0	0	5.1E-03	2.5E-03
GMS and Jensen's	$Na_2MoO_4.2H_2O$	0	0	4.1E-05	4.1E-03
	sucrose	11.7	0	0	0
	glutamic acid Na salt hydrate	0	5.9	5.9	5.9
	mannitol	0	12.0	27.5	12.0
	thiamine	0	0	0.1 mg/L	0
	biotin	1 mg/L	1 mg/L	0.01 mg/L	1 mg/L
	NaOH	0	0	0	1
	predicted PO4 buffer pH	7.3-7.4	7.3-7.4	N/A	N/A
	pH reading of Calcofluor plate	>7.5	>7.5	6.5-7	6.5-7

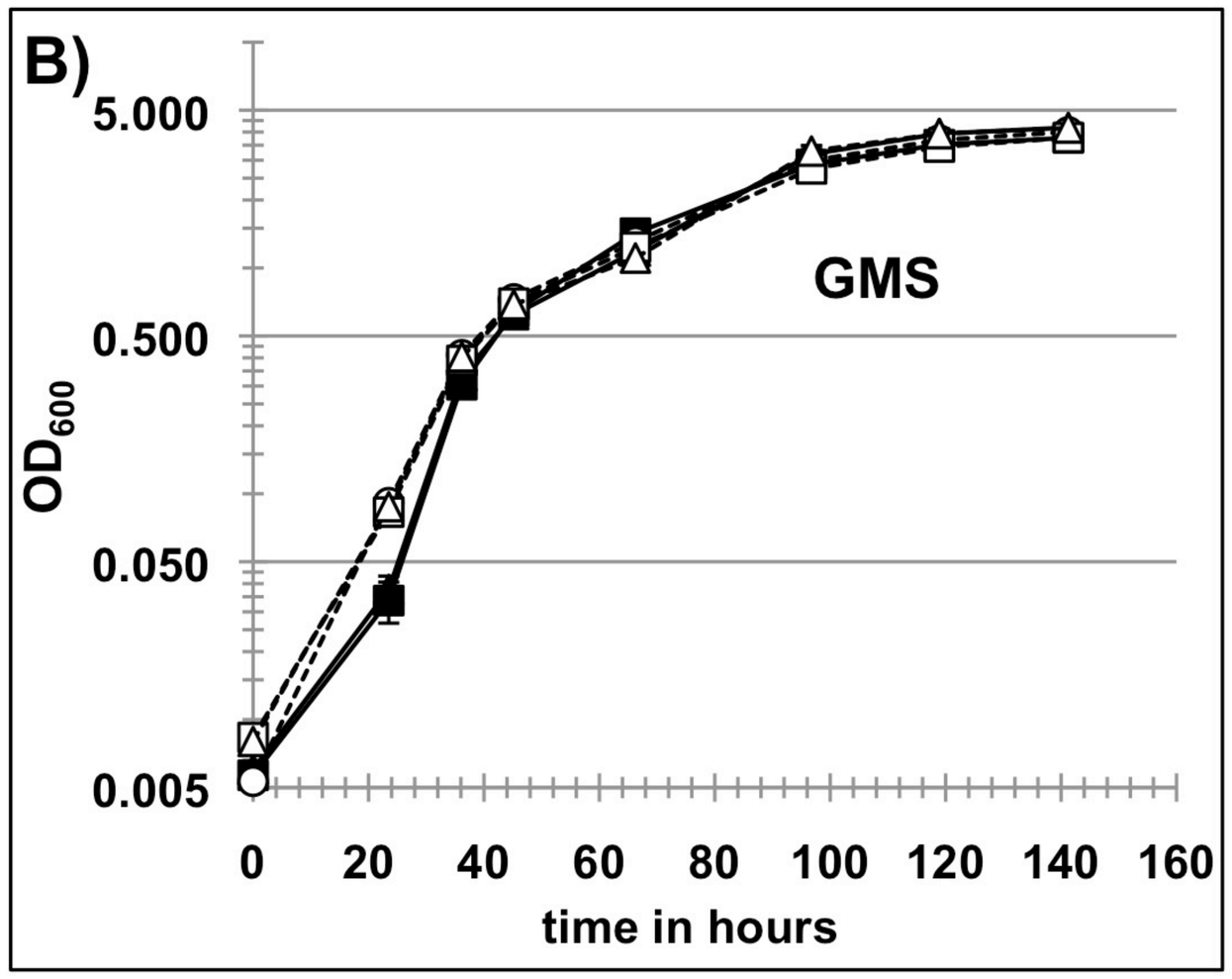
total mM concentration of each ion added in compounds listed above

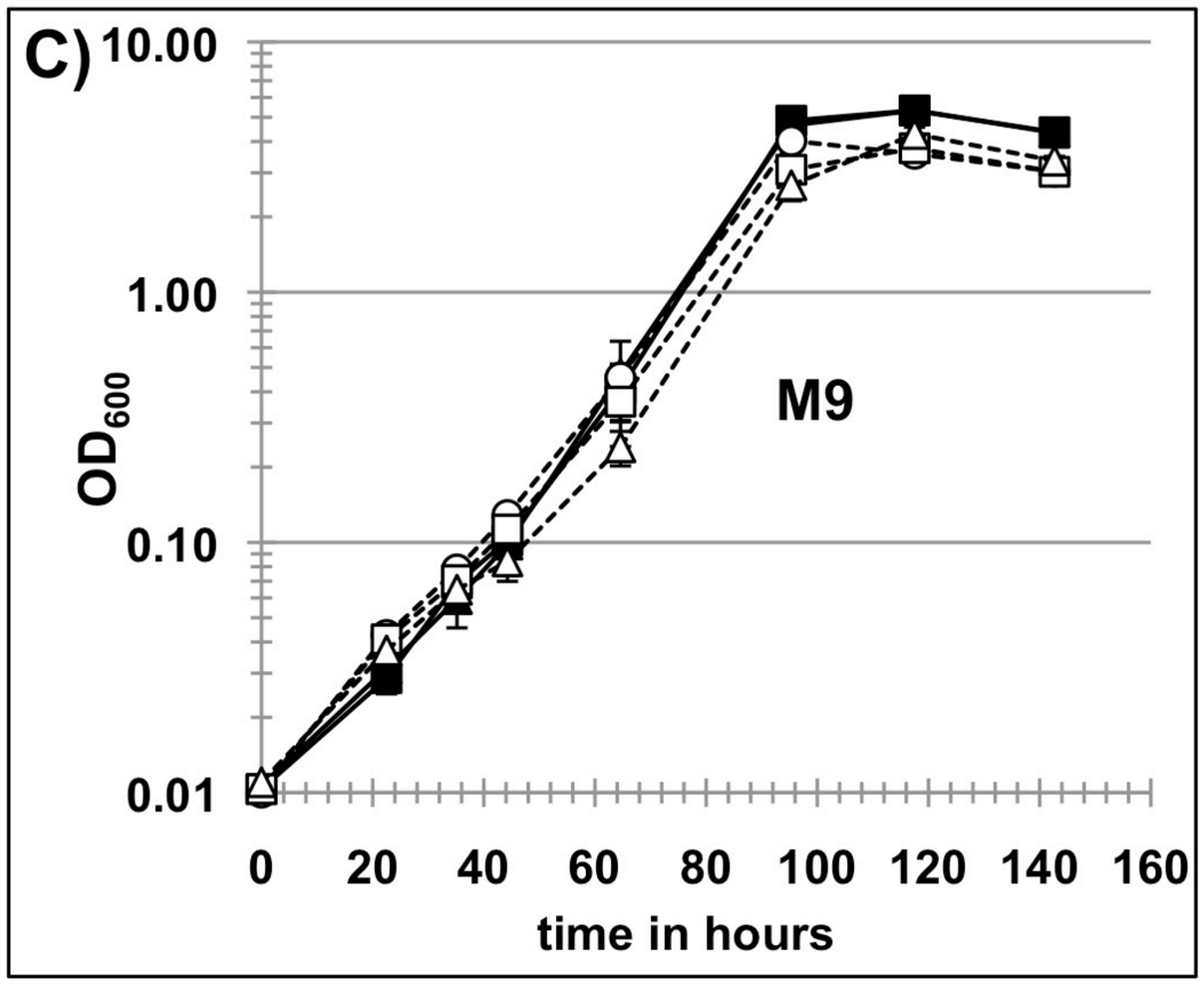
	M9 ammonium/sucrose	M9 glutamate/mannitol	GMS (glutamate/mannitol	Jensen's glutamate/mannitol
PO_4	199.1	199.1	5.7	8.5
Na	327.1	333.0	5.9	10.3
SO_4	1.0	1.0	0.8	0.8
K	44.1	44.1	11.5	2.3
Cl	9.4	17.6	0.8	4.5
Ca	0.3	0.3	0.4	7.3
Mg	1.0	1.0	0.8	0.8
Fe	0	0	9.2E-03	0.4
BO_3	0	0	1.6E-04	1.6E-02
Zn	0	0	3.5E-05	3.5E-03
Co	0	0	4.2E-05	0
Cu	0	0	4.0E-05	2.0E-03
Mn	0	0	5.1E-03	2.5E-03
MoO_4	0	0	4.1E-05	4.1E-03
NH_4	9.4	0	0	0

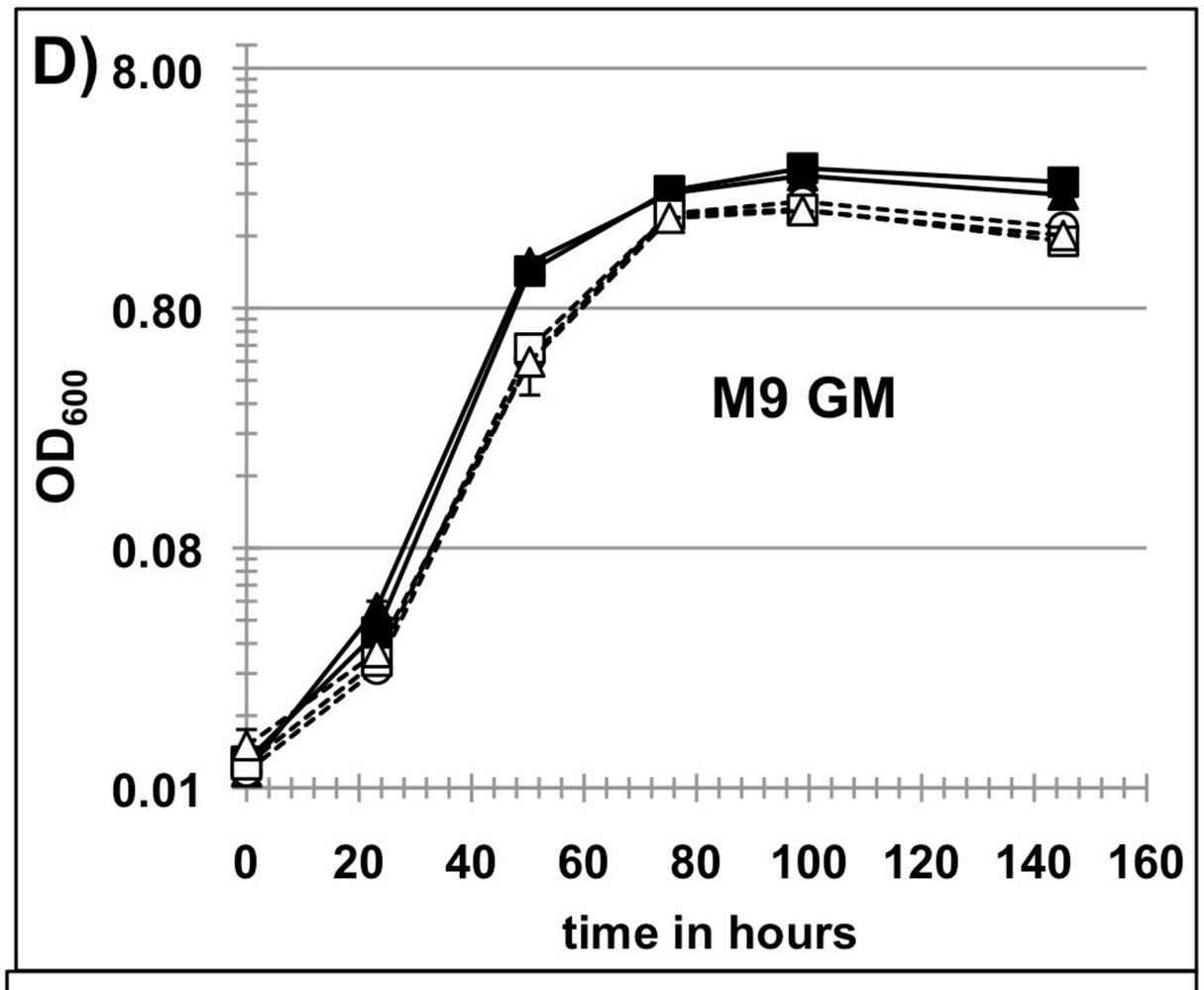


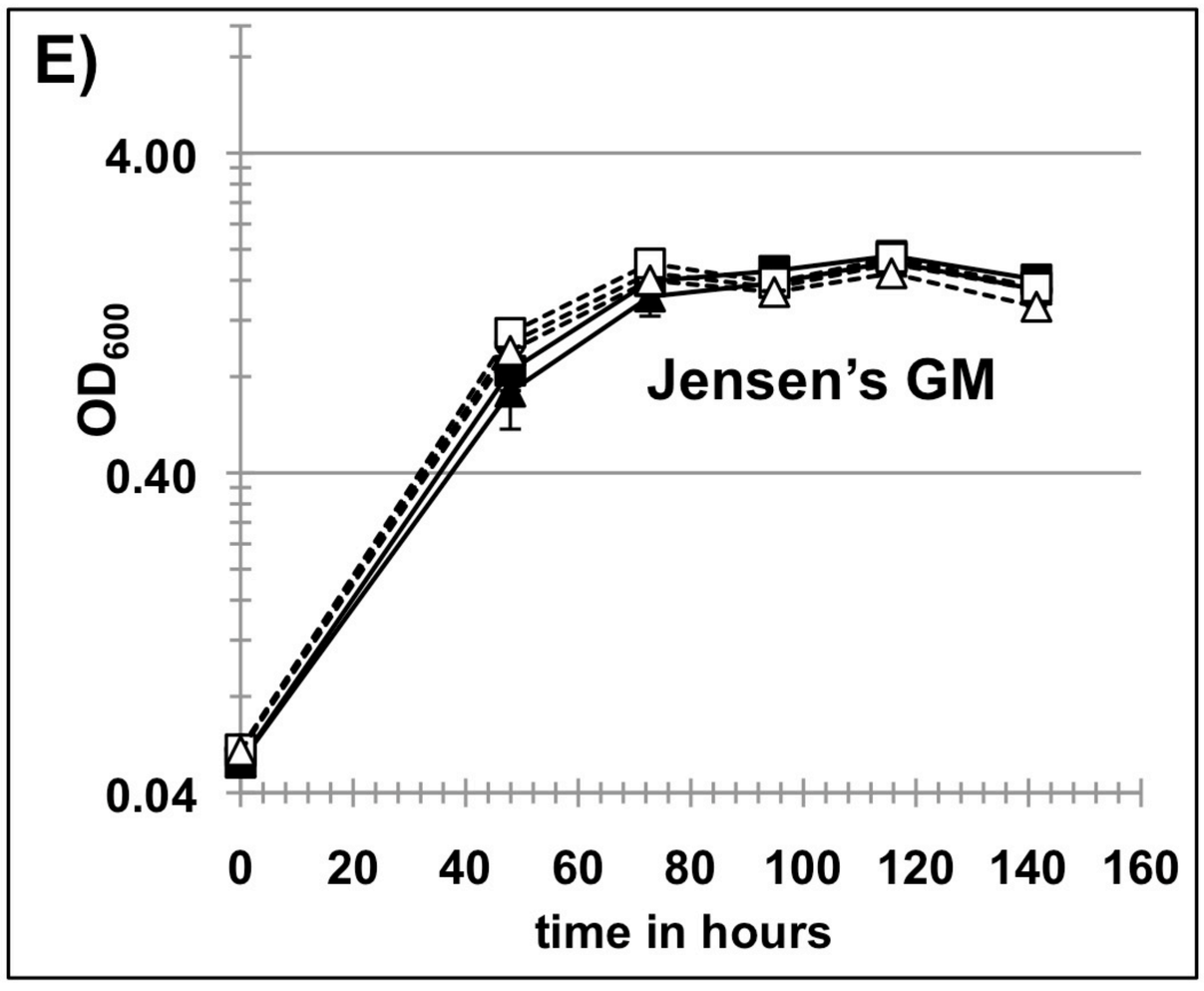
Supplemental Figure 1. Time-series of the development of Calcofluor fluorescence. Binding of succinoglycan to the dye Calcofluor White M2R produces fluorescence when excited with UV light. Fluorescence from the *S. meliloti* 1021 reference strain and from the *exoY::Tn5* mutant is shown at A) 2 days; B) 4 days; C) 6 days after streaking to an LBMC 500 μg/mL streptomycin, 0.02% Calcofluor plate. Fluorescence is apparent from *S. meliloti* 1021 after 4 days, but not from the *exoY::Tn5* mutant, which cannot make succinoglycan. All exposures were 0.5 seconds on a 302 nm UV light box.











Supplemental Figure 2. Growth of strains overexpressing *exoY* relative to control strains. Growth of *S. meliloti* 1021 strains carrying the pstb-LAFR5-exoY expression plasmid (open symbols) grow as well as strains carrying the pstb-LAFR5 negative control construct (closed symbols) on A) LBMC medium; B) GMS medium and E) Jensen's GM medium, indicating that under these conditions the diversion of resources to exopolysaccharide production does not retard growth. However, growth of the strains carrying the pstb-LAFR5-exoY expression plasmid is slowed on C) M9 salts medium and on D) M9 GM medium. This is consistent with the reduced growth observed for *exoY*-overexpressing strains grown on M9 and M9 GM plates (Figure 1).