



ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่

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APPENDIX A

Phagocytosis and killing of THP-1 macrophage on wild-type, quadruple *lac* gene deletion strain, $\Delta lac1$, $\Delta lac2$, $\Delta lac3$ and $\Delta arb2$

Table A-1 Phagocytosis of THP-1 on wild-type, quadruple *lac* gene deletion strain, $\Delta lac1$, $\Delta lac2$, $\Delta lac3$ and $\Delta arb2$ with MOI=2

Time of incubation (minutes)	Strains of <i>P. marneffei</i>					
	Wild-type	Quadruple <i>lac</i> gene deletion	$\Delta lac1$	$\Delta lac2$	$\Delta lac3$	$\Delta arb2$
15	(4,5), (6,7)	(8,7), (7,5)	(4,6), (4,5)	(5,5), (5,4)	(5,4), (7,7)	(4,3), (2,6)
30	(10,12), (15,13)	(15,17), (11,13)	(11,9), (10,6)	(12,10), (12,14)	(10,9), (17,15)	(11,7), (10,5)
60	(13,13), (17,13)	(21,17), (25,26)	(11,14), (16,12)	(14,16), (12,12)	(14,15), (17,18)	(13,11), (11,13)
120	(25,24), (24,27)	(33,29), (32,30)	(24,20), (19,22)	(27,20), (21,23)	(27,25), (21,20)	(26,18), (15,23)

(Test1, Test2)

Table A-2 Phagocytic index of THP-1 on wild-type, quadruple *lac* gene deletion strain, $\Delta lac1$, $\Delta lac2$, $\Delta lac3$ and $\Delta arb2$ with MOI=2

Time of incubation (minutes)	Strains of <i>P. marneffei</i>					
	Wild-type	Quadruple <i>lac</i> gene deletion	$\Delta lac1$	$\Delta lac2$	$\Delta lac3$	$\Delta arb2$
15	(1.25,1.00), (1.00,1.00)	(1.88,1.43), (2.14,2.00)	(1.00,1.20), (1.00,1.25)	(1.16,1.40), (1.20,1.50)	(1.60,1.00), (1.57,1.14)	(1.00,1.00), (1.00,1.15)
30	(1.20,1.00), (1.13,1.38)	(1.60,1.65), (1.82,2.15)	(1.00,1.00), (1.11,1.17)	(1.17,1.30), (1.42,1.20)	(1.10,1.22), (1.29,1.40)	(1.25,1.18), (1.57,1.78)
60	(1.08,1.31), (1.35,1.15)	(2.03,1.53), (2.14,2.04)	(1.00,1.10), (1.00,1.08)	(1.28,1.32), (1.5,1.67)	(1.25,1.45), (1.78,1.44)	(1.18,1.27), (1.09,1.15)
120	(1.24,1.46), (1.00,1.22)	(2.15,2.28), (2.31,2.37)	(1.28,1.60), (1.00,1.05)	(1.96,1.20), (1.14,1.22)	(1.59,1.56), (1.57,1.70)	(1.53,1.14), (1.00,1.06)

(Test1, Test2)

Table A-3 Killing ability of THP-1 on wild-type, quadruple *lac* gene deletion strain, $\Delta lac1$, $\Delta lac2$, $\Delta lac3$ and $\Delta arb2$ with MOI=2

Time of incubation (hours)	Strains of <i>P. marneffei</i>					
	Wild-type	Quadruple <i>lac</i> gene deletion	$\Delta lac1$	$\Delta lac2$	$\Delta lac3$	$\Delta arb2$
2	(2.44,12.19), (7.69,17.95)	(13.21,20.75), (10.00,25.00)	(12.20,7.32), (16.13,9.68)	(16.00,12.00), (23.10,7.69)	(19.05,9.52), (23.53,5.90)	(20.93,6.98), (10.00,15.00)
4	(31.71,12.19), (23.08,28.20)	(43.40,35.85), (40.00,35.00)	(26.82,12.19), (29.03,16.13)	(28.00,20.00), (23.08,28.20)	(23.81,14.28), (17.65,35.29,)	(34.88,16.28), (15.00,40.00)
8	(51.22,36.58), (33.33,43.59)	(62.26,58.49), (45.00,55.00)	(36.58,46.34), (29.03,48.39)	(48.00,36.00), (33.33,48.72)	(33.33,47.62), (47.06,29.41)	(39.53,53.49), (30.00,40.00)

(Test1, Test2)

Table A-4 TNF- α concentration in THP-1 cell stimulated with wild-type, quadruple *lac* gene deletion strain, $\Delta lac1$, $\Delta lac2$, $\Delta lac3$ and $\Delta arb2$

Time of incubation (hours)	Concentration (pg/ml) (mean $\pm$ SD)					
	Wild-type	Quadruple <i>lac</i> gene deletion	$\Delta lac1$	$\Delta lac2$	$\Delta lac3$	$\Delta arb2$
2	11.198 $\pm$ 0.473, 3.275 $\pm$ 0.310	22.037 $\pm$ 1.023, 8.442 $\pm$ 0.140	18.819 $\pm$ 0.719, 8.843 $\pm$ 0.440	21.311 $\pm$ 0.346, 8.688 $\pm$ 0.369	27.971 $\pm$ 0.788, 8.229 $\pm$ 0.000	24.082 $\pm$ 1.201, 14.792 $\pm$ 0.273
8	19.621 $\pm$ 0.652, 11.819 $\pm$ 0.155	301.712 $\pm$ 11.332, 212.450 $\pm$ 8.980	21.099 $\pm$ 1.325, 20.579 $\pm$ 0.249	61.422 $\pm$ 2.778, 39.441 $\pm$ 1.887	37.553 $\pm$ 1.002, 12.296 $\pm$ 0.370	25.354 $\pm$ 0.565, 19.045 $\pm$ 0.996
24	80.235 $\pm$ 3.958, 49.458 $\pm$ 0.869	487.894 $\pm$ 6.714, 371.169 $\pm$ 11.122	20.432 $\pm$ 0.095, 37.079 $\pm$ 1.633	85.012 $\pm$ 0.687, 44.082 $\pm$ 0.453	52.896 $\pm$ 1.357, 50.895 $\pm$ 11.151	25.063 $\pm$ 0.727, 33.556 $\pm$ 1.905

(Test1, Test2)

Table A-5 IL-6 concentration in THP-1 cell stimulated with wild-type, quadruple *lac* gene deletion strain, $\Delta lac1$, $\Delta lac2$, $\Delta lac3$ and $\Delta arb2$

Time of incubation (hours)	Concentration (pg/ml) (mean $\pm$ SD)					
	Wild-type	Quadruple <i>lac</i> gene deletion	$\Delta lac1$	$\Delta lac2$	$\Delta lac3$	$\Delta arb2$
2	3.832 $\pm$ 0.118, 4.263 $\pm$ 0.199	3.962 $\pm$ 0.157, 4.198 $\pm$ 0.055	3.278 $\pm$ 0.074, 4.327 $\pm$ 0.097	3.452 $\pm$ 0.155, 5.216 $\pm$ 1.097	3.937 $\pm$ 0.250, 4.886 $\pm$ 0.153	3.897 $\pm$ 0.689, 4.719 $\pm$ 0.172
8	6.679 $\pm$ 1.186, 11.401 $\pm$ 1.213	18.288 $\pm$ 0.836, 20.902 $\pm$ 0.287	11.676 $\pm$ 2.076, 8.993 $\pm$ 1.127	11.336 $\pm$ 0.294, 9.269 $\pm$ 0.440	9.957 $\pm$ 0.433, 9.565 $\pm$ 0.620	9.689 $\pm$ 2.148, 9.815 $\pm$ 0.148
24	21.765 $\pm$ 2.372, 26.291 $\pm$ 0.273	58.478 $\pm$ 1.391, 74.528 $\pm$ 4.105	25.131 $\pm$ 6.216, 26.101 $\pm$ 3.263	24.190 $\pm$ 1.516, 25.448 $\pm$ 3.137	25.798 $\pm$ 6.920, 21.344 $\pm$ 0.254	19.696 $\pm$ 0.482, 35.609 $\pm$ 2.383

(Test1, Test2)

Table A-6 IL-1 β concentration in THP-1 cell stimulated with wild-type, quadruple *lac* gene deletion strain, $\Delta lac1$, $\Delta lac2$, $\Delta lac3$ and $\Delta arb2$

Time of incubation (hours)	Concentration (pg/ml) (mean $\pm$ SD)					
	Wild-type	Quadruple <i>lac</i> gene deletion	$\Delta lac1$	$\Delta lac2$	$\Delta lac3$	$\Delta arb2$
2	125.981 $\pm$ 4.537, 95.958 $\pm$ 4.854	123.616 $\pm$ 2.812, 100.092 $\pm$ 2.705	119.909 $\pm$ 5.240, 109.783 $\pm$ 2.009	118.192 $\pm$ 12.390, 103.816 $\pm$ 7.237	124.418 $\pm$ 18.601, 106.624 $\pm$ 4.307	118.628 $\pm$ 11.162, 115.983 $\pm$ 4.910
8	1090.326 $\pm$ 68.592, 285.266 $\pm$ 7.964	1433.272 $\pm$ 8.168, 540.531 $\pm$ 16.794	1231.442 $\pm$ 24.067, 526.980 $\pm$ 14.390	1052.850 $\pm$ 22.009, 437.962 $\pm$ 21.038	538.772 $\pm$ 12.983, 185.099 $\pm$ 15.855	443.457 $\pm$ 3.474, 295.423 $\pm$ 17.377
24	5737.309 $\pm$ 353.515, 1013.224 $\pm$ 89.733	15095.311 $\pm$ 461.164, 4057.179 $\pm$ 153.768	4663.430 $\pm$ 198.791, 1334.990 $\pm$ 26.154	4640.438 $\pm$ 65.643, 1673.166 $\pm$ 32.814	5892.444 $\pm$ 17.392, 1235.551 $\pm$ 18.052	6246.036 $\pm$ 88.139, 1738.003 $\pm$ 144.128

Test1, Test2

APPENDIX B

Statistic analysis

Table B-1 Statistic significance of percentage of phagocytosis at 15 minutes by One-Way ANOVA

(I) group	(J) group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	-1.25000	.89365	.179	-3.1275	.6275
	3	.75000	.89365	.412	-1.1275	2.6275
	4	.75000	.89365	.412	-1.1275	2.6275
	5	-.25000	.89365	.783	-2.1275	1.6275
	6	1.75000	.89365	.066	-.1275	3.6275

Table B-2 Statistic significance of percentage of phagocytosis at 30 minutes by One-Way ANOVA

(I) group	(J) group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	-1.50000	2.02244	.468	-5.7490	2.7490
	3	3.50000	2.02244	.101	-.7490	7.7490
	4	-1.75000	2.02244	.398	-5.9990	2.4990
	5	-.25000	2.02244	.903	-4.4990	3.9990
	6	4.25000*	2.02244	.050	.0010	8.4990

Table B-3 Statistic significance of percentage of phagocytosis at 60 minutes by One-Way ANOVA

(I) group	(J) group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	-8.25000*	1.68737	.000	-11.7950	-4.7050
	3	.75000	1.68737	.662	-2.7950	4.2950
	4	.50000	1.68737	.770	-3.0450	4.0450
	5	-2.00000	1.68737	.251	-5.5450	1.5450
	6	2.00000	1.68737	.251	-1.5450	5.5450

Table B-4 Statistic significance of percentage of phagocytosis at 120 minutes by One-Way ANOVA

(I) group	(J) group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	-6.00000*	2.18899	.013	-10.5989	-1.4011
	3	3.75000	2.18899	.104	-.8489	8.3489
	4	2.25000	2.18899	.318	-2.3489	6.8489
	5	2.00000	2.18899	.373	-2.5989	6.5989
	6	4.50000	2.18899	.055	-.0989	9.0989

1= wild-type, 2 = quadruple *lac* gene deletion strain, 3 = $\Delta lac1$, 4 = $\Delta lac2$, 5 = $\Delta lac3$,
6 = $\Delta arb2$ * $P < 0.05$

Table B-5 Statistic significance of phagocytic index at 15 minutes by One-Way ANOVA

(I) group	(J) group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	-.80000*	.14463	.000	-1.1039	-.4961
	3	-.05000	.14463	.734	-.3539	.2539
	4	-.25250	.14463	.098	-.5564	.0514
	5	-.26500	.14463	.084	-.5689	.0389
	6	.02500	.14463	.865	-.2789	.3289

Table B-6 Statistic significance of phagocytic index at 30 minutes by One-Way ANOVA

(I) group	(J) group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	-.62750*	.12951	.000	-.8996	-.3554
	3	.10750	.12951	.417	-.1646	.3796
	4	-.09500	.12951	.473	-.3671	.1771
	5	-.07500	.12951	.570	-.3471	.1971
	6	-.26750	.12951	.054	-.5396	.0046

1= wild-type, 2 = quadruple *lac* gene deletion strain, 3 = $\Delta lac1$, 4 = $\Delta lac2$, 5 = $\Delta lac3$,

6 = $\Delta arb2$ * $P < 0.05$

Table B-7 Statistic significance of phagocytic index at 60 minutes by One-Way ANOVA

(I) group	(J) group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	-.71250*	.12262	.000	-.9712	-.4538
	3	.18500	.12262	.150	-.0737	.4437
	4	-.22000	.12262	.091	-.4787	.0387
	5	-.25500	.12262	.053	-.5137	.0037
	6	.08250	.13244	.542	-.1969	.3619

Table B-8 Statistic significance of phagocytic index at 120 minutes by One-Way ANOVA

(I) group	(J) group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	-1.04750*	.16321	.000	-1.3904	-.7046
	3	.00500	.16321	.976	-.3379	.3479
	4	-.15000	.16321	.370	-.4929	.1929
	5	-.33750	.16321	.053	-.6804	.0054
	6	.04750	.16321	.774	-.2954	.3904

1= wild-type, 2 = quadruple *lac* gene deletion strain, 3 = $\Delta lac1$, 4 = $\Delta lac2$, 5 = $\Delta lac3$,

6 = $\Delta arb2$ * $P < 0.05$

Table B-9 Statistic significance of percentage of killing at 2 hours by One-Way ANOVA

(I) group	(J) group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	-7.17250	4.58218	.135	-16.7993	2.4543
	3	-1.26500	4.58218	.786	-10.8918	8.3618
	4	-4.63000	4.58218	.326	-14.2568	4.9968
	5	-4.43250	4.58218	.346	-14.0593	5.1943
	6	-3.16000	4.58218	.499	-12.7868	6.4668

Table B-10 Statistic significance of percentage of killing at 4 hours by One-Way ANOVA

(I) group	(J) group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	-14.76750*	5.90556	.022	-27.1746	-2.3604
	3	2.75250	5.90556	.647	-9.6546	15.1596
	4	-1.02500	5.90556	.864	-13.4321	11.3821
	5	1.03750	5.90556	.863	-11.3696	13.4446
	6	-2.74500	5.90556	.648	-15.1521	9.6621

1= wild-type, 2 = quadruple *lac* gene deletion strain, 3 = $\Delta lac1$, 4 = $\Delta lac2$, 5 = $\Delta lac3$,
6 = $\Delta arb2$ * $P < 0.05$

Table B-11 Statistic significance of percentage of killing at 8 hours by One-Way ANOVA

(I) group	(J) group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	-14.00750*	6.08028	.033	-26.7817	-1.2333
	3	1.09500	6.08028	.859	-11.6792	13.8692
	4	-.33250	6.08028	.957	-13.1067	12.4417
	5	1.82500	6.08028	.768	-10.9492	14.5992
	6	.42500	6.08028	.945	-12.3492	13.1992

Table B-12 Statistic significance of TNF- α concentration in THP-1 cell at 2 hours by One-Way ANOVA

(I) group	(J) group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	-1.27300	.79293	.160	-3.2132	.6672
	3	-1.19000	.79293	.184	-3.1302	.7502
	4	-1.27800	.79293	.158	-3.2182	.6622
	5	-1.50550	.79293	.106	-3.4457	.4347
	6	-2.33000*	.79293	.026	-4.2702	-.3898

1= wild-type, 2 = quadruple *lac* gene deletion strain, 3 = $\Delta lac1$, 4 = $\Delta lac2$, 5 = $\Delta lac3$,

6 = $\Delta arb2$ * $P < 0.05$

Table B-13 Statistic significance of TNF- α concentration in THP-1 cell at 8 hours by
One-Way ANOVA

(I) group	(J) group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	-15.67600*	.81962	.000	-17.6815	-13.6705
	3	-.40800	.81962	.636	-2.4135	1.5975
	4	-1.97500	.81962	.053	-3.9805	.0305
	5	-.47700	.81962	.582	-2.4825	1.5285
	6	-.45150	.81962	.602	-2.4570	1.5540

Table B-14 Statistic significance of TNF- α concentration in THP-1 cell at 24 hours by
One-Way ANOVA

(I) group	(J) group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	-5.79300*	.44613	.000	-6.8846	-4.7014
	3	.62100	.44613	.213	-.4706	1.7126
	4	.02500	.44613	.957	-1.0666	1.1166
	5	.15600	.44613	.739	-.9356	1.2476
	6	.50500	.44613	.301	-.5866	1.5966

1= wild-type, 2 = quadruple *lac* gene deletion strain, 3 = $\Delta lac1$, 4 = $\Delta lac2$, 5 = $\Delta lac3$,

6 = $\Delta arb2$ * $P < 0.05$

Table B-15 Statistic significance of IL-6 concentration in THP-1 cell at 2 hours by
One-Way ANOVA

(I) group	(J) group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	-.00950	.11326	.936	-.2866	.2676
	3	.06500	.11326	.587	-.2121	.3421
	4	-.06200	.11326	.604	-.3391	.2151
	5	-.08650	.11326	.474	-.3636	.1906
	6	-.06200	.11326	.604	-.3391	.2151

Table B-16 Statistic significance of IL-6 concentration in THP-1 cell at 8 hours by
One-Way ANOVA

(I) group	(J) group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	-1.28550*	.52388	.050	-2.5674	-.0036
	3	-.26850	.52388	.627	-1.5504	1.0134
	4	-.25500	.52388	.644	-1.5369	1.0269
	5	-.16500	.52388	.763	-1.4469	1.1169
	6	-.15600	.52388	.776	-1.4379	1.1259

1= wild-type, 2 = quadruple *lac* gene deletion strain, 3 = $\Delta lac1$, 4 = $\Delta lac2$, 5 = $\Delta lac3$,

6 = $\Delta arb2$ * $P < 0.05$

Table B-17 Statistic significance of IL-6 concentration in THP-1 cell at 24 hours by
One-Way ANOVA

(I) group	(J) group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	-1.76100*	.18402	.000	-2.2113	-1.3107
	3	-.07400	.18402	.702	-.5243	.3763
	4	-.03950	.18402	.837	-.4898	.4108
	5	.00350	.18402	.985	-.4468	.4538
	6	-.12950	.18402	.508	-.5798	.3208

Table B-18 Statistic significance of IL-1 β concentration in THP-1 cell at 2 hours by
One-Way ANOVA

(I) group	(J) group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	-.01200	.10955	.916	-.2801	.2561
	3	-.04800	.10955	.677	-.3161	.2201
	4	-.01700	.10955	.882	-.2851	.2511
	5	-.04950	.10955	.667	-.3176	.2186
	6	-.07550	.10955	.516	-.3436	.1926

1= wild-type, 2 = quadruple *lac* gene deletion strain, 3 = $\Delta lac1$, 4 = $\Delta lac2$, 5 = $\Delta lac3$,
6 = $\Delta arb2$ * $P < 0.05$

Table B-19 Statistic significance of IL-1 β concentration in THP-1 cell at 8 hours by
One-Way ANOVA

(I) group	(J) group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	-.60500	.83363	.495	-2.6448	1.4348
	3	-.48800	.83363	.580	-2.5278	1.5518
	4	-.25050	.83363	.774	-2.2903	1.7893
	5	.42850	.83363	.626	-1.6113	2.4683
	6	-.74300	.83363	.407	-2.7828	1.2968

Table B-20 Statistic significance of IL-1 β concentration in THP-1 cell at 24 hours by
One-Way ANOVA

(I) group	(J) group	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	-2.31750*	.52264	.004	-3.5964	-1.0386
	3	-.06550	.52264	.904	-1.3444	1.2134
	4	-.23000	.52264	.675	-1.5089	1.0489
	5	-.12300	.52264	.822	-1.4019	1.1559
	6	-.40200	.52264	.471	-1.6809	.8769

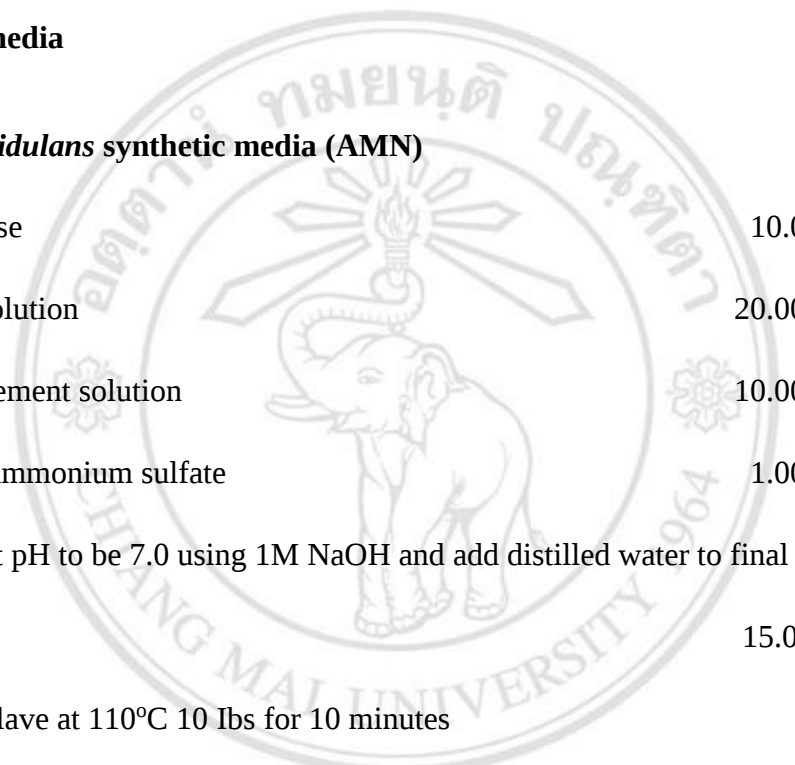
1= wild-type, 2 = quadruple *lac* gene deletion strain, 3 = $\Delta lac1$, 4 = $\Delta lac2$, 5 = $\Delta lac3$,
6 = $\Delta arb2$ * $P < 0.05$

APPENDIX C

Media and reagents

1. Culture media

Aspergillus nidulans synthetic media (AMN)



Glucose	10.00 g
Salt solution	20.00 ml
Supplement solution	10.00 ml
1 M Ammonium sulfate	1.00 ml
Adjust pH to be 7.0 using 1M NaOH and add distilled water to final volume 1L	
Agar	15.00 g
Autoclave at 110°C 10 lbs for 10 minutes	

Potato dextrose agar (PDA)



PDA	39.00 g
Distilled water	1,000.00 ml

Add distilled water, mix thoroughly, melt and autoclave at 121°C 15 lbs for 15 minutes

Salt solution

KCl	26.00 g
MgSO ₄	26.00 g
KH ₂ PO ₄	26.00 g
Trace element solution	50.00 ml
Chloroform	2.00 ml

Add distilled water to final volume 1L and store 4°C

Trace element solution

Na ₂ B ₄ O ₇ ·10H ₂ O	0.04 g
CuSO ₄ ·5H ₂ O	0.40 g
MnSO ₄ ·H ₂ O	0.60 g
Na ₂ MoO ₄ ·2H ₂ O	0.80 g
FeSO ₄	1.00 g
ZnSO ₄ ·7H ₂ O	8.00 g

Add distilled water to final volume 1L and autoclave at 121°C 15 lbs for 15 minutes

2. Reagents

Normal saline solution (NSS) - 0.01% Tween 80

Normal saline solution	1,000.00 ml
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Tween 80	0.10 ml
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Mix and sterilize by autoclaving at 121°C 15 lbs for 15 minutes

10X Phosphate buffered saline (PBS)

NaCl	80.00 g
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KCl	2.00 g
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KH ₂ PO ₄	2.00 g
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Na ₂ HPO ₄	11.50 g
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Add distilled water to final volume 1 L after adjusting pH to 7.4 with 1M HCl or 1M NaOH and autoclave at 121°C 15 lbs for 15 minutes

PBS-0.05% tween 20

Phosphate buffered saline, pH 7.2	1,000.00 ml
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Tween 20	0.10 ml
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Mix and autoclave at 121°C 15 lbs for 15 minutes

CURRICULUM VITAE

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