

## Supplementary information

### Biological metasurfaces based on tailored LBA growth medium formulations for photonic applications

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## Section 1 - Colony Forming Units method:

Bacterial growth was evaluated in three different Luria Bertani Agar formulations, LBA, LB<sub>2</sub>A, and LB<sub>4</sub>A, in order to analyze the effect of nutrient composition on cell replication. We consider the bacterial cells in the exponential growth phase, i.e, a condition in which all cells have a similar shape and where their number double in a constant time interval. During this phase, we have found that both the cell concentration and growth rate are different for the three formulations, despite the similar initial cells concentration (see **Figure 2b,c** in Results and Discussion section of the main text). In this way, it is possible to compare the growth capacity of each formulation by evaluating the generation number  $n$  through the following relation:

$$N = N_0 2^n \quad [1]$$

Here  $N$  is the cells concentration after a certain growth time,  $N_0$  is the initial cells concentration and  $n$  represents the generation number used to obtain a final population  $N$ . Expressed in terms of  $n$  (see **Equation 2**), the generation time “g”, also known as the “doubling time”, can be assessed as  $g = \text{Time}/n$ . It describes the period required to give rise to two daughter cells from one. Other important parameters can be used to describe the growth dynamics for each formulation: (i) the growth rate ( $K = 1/g = n/\text{Time}$ ), indicating the generations number produced in a hour and (ii) the instantaneous rate constant  $k = \log(2)/g$ , expressing the rate at which the population is growing at any instant ( $K$  and  $k$  are expressed in units of reciprocal hours ( $\text{h}^{-1}$ ), see **Table 1**).

$$n = \frac{\log(N) - \log(N_0)}{\log(2)} \quad [2]$$

The doubling times and instantaneous growth rates were found to be significantly different for the three formulations. The doubling time for *E. coli* bacteria has been determined to be about 15 minutes in LBA, 17 minutes in LB<sub>2</sub>A and 34 minutes in LB<sub>4</sub>A. The higher instantaneous growth rate ( $k$ ) observed in LBA indicates a faster cells replication compared to LB<sub>2</sub>A and LB<sub>4</sub>A, for which growth

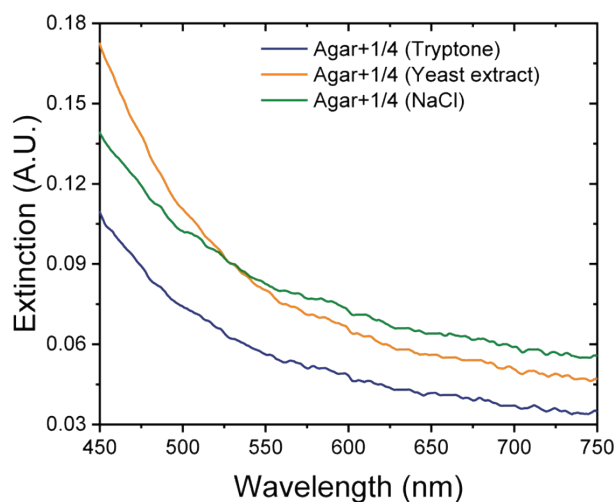
rates are lower. Although the nutritional components are in smaller quantities and the doubling time becomes longer compared to a standard LBA, it is possible to obtain a significant number of cells even for LB<sub>4</sub>A.

**Table 1:** Evaluation of  $n$ ,  $g$ ,  $K$  and  $k$  values for *E. coli* bacteria in LBA, LB<sub>2</sub>A and LB<sub>4</sub>A.

	<b>LBA</b>	<b>LB<sub>2</sub>A</b>	<b>LB<sub>4</sub>A</b>
Log ( $N_0$ )	7.21	7.07	7.57
Log ( $N$ )	13.14	12.34	10.18
$n$	19.69	17.54	8.68
$g$ (minutes)	15'23"	17'10"	34'55"
$K$ (generation/h)	3.94	3.51	1.74
$k$ (h <sup>-1</sup> )	2.73	2.43	1.20

## Section 2 – Scattering contribution of each single nutrient of the LB<sub>4</sub>A formulation

Even though separating the contribution of each single component to the overall scattering is not a simple task to achieve, useful insight can be, however, gained by investigating the extinction coefficient of films containing only one of the nutritive components (Tryptone, Yeast Extract and NaCl) based on the LB<sub>4</sub>A formulation. The measurements (**Figure S1**) reveal that the single isolated components provide almost equal contribution to the overall scattering, since their extinction coefficients are almost the same. These considerations justify our approach of equally reducing the concentration of all the nutrients.



**Figure R1** - Extinction curves of films containing only one component, based on the LB<sub>4</sub>A formulation: tryptone (blue curve), yeast extract (yellow curve) and NaCl (green).

### Section 3 – Produced Data

Produced data for Figure 1a:

$\lambda$ (nm)	Abs (LBA)	Abs (LB <sub>2</sub> A)	Abs (LB <sub>4</sub> A)
354	86.045	81.6644	75.1357
355	85.81355	81.34454	74.71756
356	85.57638	81.02056	74.29867
357	85.33348	80.69246	73.87902
358	85.08487	80.36024	73.4586
359	84.83053	80.0239	73.03743
360	84.57047	79.68343	72.61549
361	84.30469	79.33884	72.19279
362	84.03319	78.99013	71.76934
363	83.75596	78.6373	71.34512
364	83.47302	78.28035	70.92014
365	83.18435	77.91927	70.4944
366	82.88996	77.55407	70.06789
367	82.58985	77.18475	69.64063
368	82.28401	76.81131	69.21261
369	81.96828	76.42905	68.77986
370	81.64754	76.04399	68.34698
371	81.32209	75.65589	67.91517
372	80.99064	75.26342	67.4847
373	80.65365	74.86695	67.05029
374	80.31426	74.46972	66.61702
375	79.96825	74.06761	66.18275
376	79.61928	73.66531	65.74996
377	79.26459	73.25374	65.31341
378	78.90554	72.84297	64.88101
379	78.54225	72.43039	64.4495
380	78.17514	72.0135	64.01915
381	77.80044	71.59259	63.5847
382	77.4244	71.16933	63.15389
383	77.04253	70.74075	62.71962
384	76.65464	70.30911	62.28585
385	76.26168	69.87446	61.85226
386	75.86702	69.43763	61.41981
387	75.46545	68.99872	60.98784
388	75.05647	68.55508	60.55585
389	74.64594	68.11135	60.12591
390	74.22882	67.66493	59.69474
391	73.80656	67.2173	59.26716
392	73.37969	66.76526	58.84144
393	72.94843	66.31317	58.41576
394	72.51346	65.86039	57.99326
395	72.07561	65.40706	57.57381
396	71.6354	64.95437	57.15819
397	71.1935	64.50226	56.74545
398	70.74991	64.05027	56.33837
399	70.30555	63.59809	55.93372
400	69.86003	63.14821	55.53368
401	69.41278	62.70164	55.13896

402	68.96682	62.25729	54.7489
403	68.52081	61.81678	54.36396
404	68.07638	61.3788	53.98458
405	67.63172	60.9437	53.60939
406	67.18977	60.51153	53.24113
407	66.74942	60.08425	52.87724
408	66.31344	59.66233	52.52015
409	65.88034	59.24392	52.1674
410	65.45202	58.83235	51.82094
411	65.02798	58.4256	51.48091
412	64.60803	58.02555	51.14633
413	64.19025	57.62885	50.81678
414	63.77731	57.23759	50.49215
415	63.36945	56.85416	50.17605
416	62.964	56.47577	49.8637
417	62.56456	56.10376	49.55618
418	62.16928	55.73474	49.25239
419	61.7786	55.37288	48.95396
420	61.39267	55.01552	48.66084
421	61.01092	54.66291	48.37322
422	60.63492	54.3163	48.09069
423	60.26254	53.97514	47.81295
424	59.89531	53.63871	47.5407
425	59.53364	53.30729	47.27106
426	59.174	52.97908	47.0062
427	58.81979	52.65445	46.7455
428	58.46911	52.33485	46.4882
429	58.1221	52.0201	46.23633
430	57.77982	51.71041	45.98589
431	57.44151	51.40204	45.73898
432	57.10705	51.09777	45.49485
433	56.77638	50.79856	45.2551
434	56.44851	50.50227	45.01821
435	56.12558	50.21032	44.78451
436	55.80531	49.92105	44.55092
437	55.4911	49.637	44.32341
438	55.17803	49.3554	44.0979
439	54.87096	49.07805	43.87477
440	54.56576	48.8048	43.65666
441	54.26348	48.53509	43.43948
442	53.96567	48.26891	43.22544
443	53.67312	48.00949	43.01559
444	53.3818	47.75118	42.80718
445	53.09454	47.49659	42.60069
446	52.81011	47.24554	42.39691
447	52.52864	46.99772	42.19546
448	52.25082	46.75464	41.99898
449	51.97618	46.51337	41.80543
450	51.70512	46.27575	41.61466
451	51.43489	46.0418	41.42663

452	51.16702	45.80986	41.24098
453	50.90296	45.58147	41.05947
454	50.64323	45.35671	40.88119
455	50.38425	45.13398	40.70425
456	50.1284	44.91509	40.53059
457	49.87534	44.69854	40.35899
458	49.62608	44.48569	40.19183
459	49.37749	44.27451	40.02618
460	49.13085	44.06609	39.86354
461	48.88664	43.86105	39.70367
462	48.64552	43.65737	39.54583
463	48.40557	43.45683	39.39004
464	48.16901	43.25807	39.23478
465	47.93488	43.06212	39.08417
466	47.70198	42.86851	38.93523
467	47.47175	42.67709	38.78635
468	47.24287	42.48752	38.6409
469	47.01497	42.29998	38.49506
470	46.78977	42.11447	38.35053
471	46.56591	41.92968	38.20715
472	46.34372	41.7475	38.06653
473	46.12162	41.5651	37.92491
474	45.90152	41.38365	37.78349
475	45.68315	41.20423	37.64443
476	45.466	41.02518	37.50644
477	45.25	40.84825	37.3711
478	45.03389	40.67159	37.23495
479	44.8179	40.49536	37.10132
480	44.60308	40.31954	36.96666
481	44.39074	40.1454	36.83338
482	44.1785	39.97196	36.70141
483	43.968	39.79993	36.57057
484	43.75895	39.62844	36.44107
485	43.55111	39.46002	36.31315
486	43.34423	39.29191	36.18711
487	43.13791	39.12556	36.06143
488	42.93274	38.95981	35.93642
489	42.72863	38.79446	35.81287
490	42.52629	38.6319	35.68977
491	42.32451	38.4692	35.56644
492	42.12452	38.30862	35.44583
493	41.92555	38.14822	35.3274
494	41.72975	37.9915	35.21081
495	41.535	37.83581	35.09481
496	41.34265	37.68206	34.98115
497	41.15239	37.52949	34.86791
498	40.96345	37.37944	34.75599
499	40.77794	37.23133	34.64627
500	40.59449	37.08458	34.53731
501	40.41294	36.93923	34.42966
502	40.23374	36.79602	34.32191
503	40.057	36.65456	34.21632
504	39.88229	36.51506	34.1118
505	39.71165	36.37855	34.00954

506	39.54216	36.24266	33.9081
507	39.37615	36.10906	33.80768
508	39.21227	35.97634	33.70788
509	39.05171	35.8461	33.60943
510	38.8929	35.71778	33.51252
511	38.73668	35.59074	33.41599
512	38.58282	35.46555	33.32166
513	38.43068	35.34204	33.22638
514	38.2809	35.22025	33.1334
515	38.13337	35.09977	33.03888
516	37.98747	34.98127	32.94693
517	37.84348	34.86279	32.8546
518	37.70231	34.74667	32.76428
519	37.56321	34.63241	32.67572
520	37.42572	34.51883	32.58754
521	37.29048	34.40733	32.5019
522	37.15697	34.29596	32.41672
523	37.02464	34.18715	32.33275
524	36.89354	34.07841	32.24783
525	36.76339	33.97096	32.16432
526	36.63526	33.86474	32.08152
527	36.50953	33.7604	32.00072
528	36.38347	33.65476	31.91864
529	36.25912	33.55199	31.83932
530	36.13523	33.44979	31.75939
531	36.01221	33.34806	31.68021
532	35.89055	33.24619	31.60074
533	35.7667	33.14391	31.52042
534	35.64277	33.04002	31.43915
535	35.51835	32.93637	31.35754
536	35.39455	32.83253	31.27673
537	35.2727	32.7321	31.19719
538	35.15193	32.63159	31.11883
539	35.03494	32.53317	31.04189
540	34.91701	32.43533	30.96618
541	34.80271	32.33985	30.89173
542	34.69004	32.24629	30.81836
543	34.57881	32.15388	30.74607
544	34.47082	32.06436	30.67701
545	34.36341	31.97433	30.60746
546	34.25884	31.88713	30.54057
547	34.15692	31.80321	30.47667
548	34.05608	31.71944	30.41238
549	33.9558	31.63714	30.34923
550	33.8585	31.55541	30.28875
551	33.76282	31.47684	30.2281
552	33.66892	31.39924	30.16991
553	33.5763	31.32468	30.11292
554	33.4855	31.25141	30.05681
555	33.39633	31.17774	30.00133
556	33.30538	31.10373	29.94512
557	33.21743	31.03214	29.89097
558	33.14887	30.97961	29.85435
559	33.07593	30.92153	29.81276

560	32.99424	30.8559	29.76328
561	32.90553	30.78367	29.70719
562	32.81099	30.70568	29.64549
563	32.71383	30.62396	29.58132
564	32.61299	30.53983	29.51388
565	32.50993	30.4537	29.44442
566	32.40435	30.36352	29.37128
567	32.2971	30.27163	29.29671
568	32.18836	30.17905	29.22092
569	32.07921	30.08657	29.14417
570	31.97109	29.99329	29.0681
571	31.86302	29.90035	28.99233
572	31.75621	29.80904	28.91796
573	31.65061	29.71762	28.84418
574	31.5483	29.62956	28.77331
575	31.44873	29.54531	28.70574
576	31.35267	29.46347	28.63992
577	31.26086	29.38546	28.57866
578	31.17319	29.31128	28.52213
579	31.09099	29.24364	28.47002
580	31.01363	29.18073	28.42282
581	30.94174	29.12248	28.37987
582	30.87492	29.06978	28.34076
583	30.81538	29.02214	28.30814
584	30.76089	28.97981	28.2802
585	30.71296	28.94397	28.2574
586	30.67252	28.91451	28.24123
587	30.62326	28.87634	28.21632
588	30.56199	28.82664	28.17976
589	30.49825	28.77402	28.14046
590	30.43198	28.71781	28.09788
591	30.36386	28.66023	28.05365
592	30.29407	28.60063	28.00642
593	30.22192	28.53856	27.95629
594	30.14902	28.47569	27.90483
595	30.07569	28.41112	27.8511
596	30.0012	28.34663	27.79718
597	29.92794	28.28242	27.74327
598	29.85581	28.21874	27.69059
599	29.78601	28.15773	27.63914
600	29.71861	28.09839	27.58984
601	29.65502	28.04309	27.54363
602	29.59563	27.9918	27.5003
603	29.54133	27.94571	27.4623
604	29.4912	27.90383	27.42783
605	29.44731	27.86791	27.39937
606	29.40852	27.83764	27.37495
607	29.37544	27.81202	27.35609
608	29.34799	27.79282	27.34231
609	29.32525	27.77779	27.33268
610	29.30628	27.76715	27.32622
611	29.29173	27.7594	27.32472
612	29.28049	27.755	27.32524
613	29.27085	27.75266	27.32764

614	29.26306	27.75187	27.33243
615	29.25639	27.75204	27.33756
616	29.25002	27.75246	27.34334
617	29.24165	27.75091	27.34763
618	29.23289	27.74804	27.35079
619	29.22248	27.74352	27.35229
620	29.20959	27.73713	27.3521
621	29.19371	27.72768	27.34901
622	29.17398	27.71514	27.3435
623	29.15045	27.69793	27.33388
624	29.1235	27.67844	27.32186
625	29.09251	27.65534	27.30604
626	29.05749	27.62753	27.28675
627	29.01817	27.59561	27.26249
628	28.97441	27.55984	27.23502
629	28.92715	27.52058	27.20402
630	28.87656	27.47796	27.16981
631	28.82278	27.43243	27.13287
632	28.76528	27.38297	27.09248
633	28.7052	27.33147	27.04938
634	28.64262	27.27768	27.00433
635	28.57801	27.22139	26.95768
636	28.51196	27.1644	26.90945
637	28.4437	27.10619	26.85941
638	28.3745	27.04689	26.80883
639	28.30496	26.98671	26.75751
640	28.23528	26.92677	26.7062
641	28.16652	26.86828	26.6553
642	28.09834	26.81074	26.60552
643	28.03137	26.75335	26.55607
644	27.96574	26.69746	26.50807
645	27.90209	26.64288	26.46175
646	27.84009	26.58958	26.41627
647	27.78163	26.54021	26.37406
648	27.72492	26.49206	26.33369
649	27.67037	26.44689	26.2949
650	27.61775	26.4034	26.25851
651	27.56764	26.36242	26.22372
652	27.52013	26.32404	26.1911
653	27.47522	26.28835	26.16075
654	27.43256	26.25411	26.13118
655	27.39179	26.22116	26.10318
656	27.35363	26.19114	26.07715
657	27.31813	26.16263	26.05232
658	27.2836	26.13558	26.02957
659	27.25131	26.10974	26.00833
660	27.22039	26.08568	25.98787
661	27.19082	26.06202	25.96853
662	27.16144	26.0398	25.95006
663	27.13342	26.01821	25.93251
664	27.106	25.99844	25.91567
665	27.07905	25.9787	25.89853
666	27.05355	25.96062	25.88285
667	27.02835	25.94273	25.86742

668	27.00299	25.92435	25.85219
669	26.97816	25.90619	25.83688
670	26.95443	25.88852	25.8226
671	26.93045	25.87049	25.8088
672	26.90715	25.85336	25.79511
673	26.884	25.83705	25.78206
674	26.86058	25.81945	25.76962
675	26.83724	25.80305	25.75618
676	26.81336	25.78641	25.74385
677	26.78963	25.76948	25.7314
678	26.76548	25.75311	25.71993
679	26.74035	25.73599	25.70812
680	26.71528	25.72006	25.69659
681	26.69085	25.70343	25.68534
682	26.66573	25.68665	25.67404
683	26.63994	25.66819	25.66184
684	26.61318	25.65023	25.64938
685	26.58741	25.63291	25.63773
686	26.56092	25.61456	25.62628
687	26.53403	25.59481	25.61586
688	26.50721	25.57688	25.60403
689	26.48014	25.55814	25.59231
690	26.45211	25.53974	25.58082
691	26.42445	25.52116	25.56908
692	26.39652	25.50247	25.55779
693	26.36807	25.48327	25.54664
694	26.34025	25.46388	25.53613
695	26.31081	25.44491	25.52548
696	26.28101	25.42468	25.51358
697	26.25069	25.40353	25.50129
698	26.22157	25.38315	25.49089
699	26.19203	25.36408	25.48093
700	26.16093	25.34393	25.46993
701	26.13005	25.32337	25.45908
702	26.09892	25.30275	25.44823
703	26.06815	25.28117	25.43777
704	26.03659	25.25982	25.42689
705	26.00489	25.2386	25.41667
706	25.97312	25.21765	25.4061
707	25.93981	25.19629	25.39542
708	25.9081	25.17652	25.3853
709	25.87655	25.15549	25.37491
710	25.84425	25.13282	25.36429
711	25.81201	25.1119	25.35413
712	25.77925	25.0901	25.34234
713	25.74773	25.06952	25.33305
714	25.7157	25.04902	25.32311
715	25.68353	25.0276	25.31376
716	25.65239	25.00733	25.3043
717	25.62177	24.98769	25.29471
718	25.59018	24.96737	25.28519
719	25.55944	24.94765	25.27528
720	25.52916	24.92667	25.26588
721	25.49789	24.90614	25.25708

722	25.46712	24.88483	25.24839
723	25.43704	24.86527	25.24088
724	25.40751	24.84499	25.23216
725	25.37769	24.8249	25.22352
726	25.34726	24.80405	25.21695
727	25.31767	24.7845	25.20821
728	25.28778	24.76498	25.20018
729	25.25768	24.74556	25.19081
730	25.22872	24.72614	25.18227
731	25.20002	24.70512	25.17402
732	25.17101	24.68562	25.16541
733	25.14254	24.66668	25.15737
734	25.11451	24.64714	25.14895
735	25.08705	24.62792	25.1407
736	25.06116	24.60892	25.13222
737	25.03425	24.58972	25.12427
738	25.00541	24.56797	25.11408
739	24.97883	24.54959	25.10699
740	24.95092	24.53076	25.09862
741	24.92489	24.51231	25.09157
742	24.89948	24.49553	25.08426
743	24.87374	24.47876	25.07662
744	24.84898	24.46056	25.06984
745	24.82535	24.44359	25.06185
746	24.80141	24.4266	25.05472
747	24.77741	24.40958	25.04758
748	24.75231	24.39059	25.03884
749	24.72884	24.37314	25.03188
750	24.7062	24.35569	25.0258
751	24.68447	24.33983	25.02038
752	24.66273	24.32583	25.01303
753	24.64078	24.31183	25.0079
754	24.61917	24.29754	25.00166
755	24.59868	24.28476	24.99503
756	24.57868	24.27229	24.98956
757	24.55774	24.25898	24.98244
758	24.53899	24.2475	24.97762
759	24.51925	24.234	24.97167
760	24.49882	24.22116	24.96481
761	24.47975	24.20813	24.95864
762	24.46208	24.19628	24.95345
763	24.44533	24.18488	24.94692
764	24.42768	24.17211	24.94043
765	24.40993	24.16026	24.93611
766	24.39371	24.14869	24.9321
767	24.3771	24.13747	24.92734
768	24.36156	24.12729	24.92329
769	24.34547	24.11643	24.91768
770	24.33073	24.10605	24.91168
771	24.31462	24.09469	24.90671
772	24.29845	24.0804	24.90084
773	24.2827	24.06838	24.89484
774	24.26612	24.05665	24.89001
775	24.25047	24.04404	24.88391

776	24.23523	24.03137	24.87724
777	24.22018	24.02051	24.8725
778	24.20592	24.00947	24.8682
779	24.19368	23.99928	24.8642
780	24.18124	23.99133	24.86052
781	24.16757	23.98227	24.8545
782	24.15474	23.97156	24.85042
783	24.14181	23.96423	24.84597
784	24.12985	23.95552	24.84112
785	24.11734	23.94597	24.83608
786	24.10448	23.93601	24.82999
787	24.09224	23.92687	24.82555
788	24.08019	23.91787	24.82121

789	24.06835	23.90899	24.81697
790	24.05671	23.90024	24.81283
791	24.04527	23.89163	24.80878
792	24.03404	23.88315	24.80484
793	24.023	23.87479	24.80099
794	24.01217	23.86657	24.79724
795	24.00153	23.85848	24.79358
796	23.9911	23.85052	24.79003
797	23.98087	23.84269	24.78657
798	23.97085	23.83499	24.78321
799	23.96102	23.82742	24.77995
800	23.9514	23.81998	24.77678

**Produced data for Figure 1b:**

$\lambda$ (nm)	Scatt LBA	Scatt LB2A	Scatt LB4A
354	14.15991	10.61926	7.11779
355	14.12702	10.60391	7.10605
356	14.16994	10.63231	7.12862
357	14.15202	10.6167	7.13249
358	14.1533	10.63135	7.1287
359	14.15533	10.62492	7.12713
360	14.13588	10.62039	7.12443
361	14.16172	10.61885	7.10515
362	14.16554	10.63182	7.12645
363	14.16162	10.6202	7.13154
364	14.16213	10.62925	7.13068
365	14.16005	10.6175	7.13214
366	14.16046	10.62094	7.13912
367	14.15853	10.63507	7.13224
368	14.17273	10.62663	7.13492
369	14.16795	10.63926	7.13578
370	14.15501	10.62715	7.13258
371	14.16984	10.64413	7.1416
372	14.17674	10.63693	7.13401
373	14.16283	10.6429	7.14049
374	14.171	10.63893	7.14164
375	14.15749	10.6454	7.13969
376	14.18338	10.65213	7.14793
377	14.16308	10.64812	7.15308
378	14.1696	10.6369	7.15392
379	14.17249	10.66656	7.14997
380	14.15972	10.65868	7.15241
381	14.1633	10.65896	7.16127
382	14.16264	10.64911	7.15625
383	14.17255	10.66467	7.15753
384	14.1684	10.66211	7.17224
385	14.16549	10.66126	7.16366
386	14.17154	10.66426	7.16896
387	14.17596	10.67441	7.15628
388	14.16516	10.67414	7.15742
389	14.16083	10.67094	7.16473
390	14.18101	10.67421	7.16071

391	14.16109	10.67336	7.15821
392	14.16975	10.68532	7.1737
393	14.14691	10.68195	7.1703
394	14.15101	10.69123	7.16527
395	14.13998	10.67848	7.17133
396	14.14916	10.68872	7.17579
397	14.14683	10.69207	7.17681
398	14.15176	10.69272	7.17064
399	14.15167	10.69162	7.17569
400	14.1306	10.69152	7.17294
401	14.14087	10.70416	7.17258
402	14.15168	10.696	7.17897
403	14.12932	10.70157	7.16516
404	14.14226	10.69434	7.17857
405	14.13703	10.6879	7.17733
406	14.13148	10.70422	7.16988
407	14.11724	10.70166	7.1642
408	14.11398	10.69093	7.16498
409	14.11348	10.69343	7.15906
410	14.09943	10.7065	7.1693
411	14.11206	10.70083	7.16429
412	14.11189	10.69429	7.17144
413	14.10927	10.70654	7.17477
414	14.10531	10.69565	7.17108
415	14.10918	10.70004	7.16619
416	14.08395	10.7018	7.18037
417	14.09138	10.68946	7.16079
418	14.10519	10.6987	7.16434
419	14.08967	10.70624	7.16612
420	14.07393	10.71679	7.1642
421	14.08919	10.72059	7.16437
422	14.08933	10.72192	7.1593
423	14.08039	10.7117	7.15662
424	14.07851	10.71649	7.14751
425	14.05879	10.70839	7.1586
426	14.07385	10.7153	7.15566
427	14.08216	10.73187	7.15162
428	14.07169	10.71265	7.14731
429	14.07055	10.71647	7.15396



430	14.11004	10.76347	7.14299
431	14.05292	10.71236	7.15605
432	14.07014	10.71439	7.15237
433	14.06028	10.7302	7.15403
434	14.06563	10.71315	7.14112
435	14.06067	10.7197	7.14808
436	14.06304	10.73327	7.14476
437	14.07316	10.72403	7.1552
438	14.06913	10.7291	7.15955
439	14.05671	10.72383	7.14425
440	14.06509	10.72704	7.14644
441	14.05577	10.71807	7.14652
442	14.06951	10.7303	7.14533
443	14.06486	10.73509	7.13638
444	14.04953	10.72279	7.14175
445	14.06302	10.70226	7.14904
446	14.06287	10.73081	7.14577
447	14.04662	10.72897	7.14821
448	14.06344	10.72912	7.14759
449	14.057	10.72562	7.14562
450	14.06409	10.74053	7.17014
451	14.05812	10.74724	7.14742
452	14.0654	10.75034	7.1434
453	14.06342	10.73838	7.14578
454	14.06803	10.753	7.14006
455	14.06887	10.7548	7.14564
456	14.0898	10.77466	7.13939
457	14.07636	10.74971	7.14518
458	14.06786	10.74957	7.14401
459	14.07732	10.75352	7.15288
460	14.08179	10.75214	7.15114
461	14.07846	10.76546	7.14813
462	14.08387	10.7745	7.15339
463	14.08109	10.76421	7.14965
464	14.07506	10.76997	7.15696
465	14.08718	10.7563	7.15615
466	14.07673	10.76614	7.14567
467	14.09439	10.77714	7.15684
468	14.09677	10.77263	7.15925
469	14.09366	10.78002	7.15997
470	14.1052	10.78436	7.16497
471	14.09002	10.78465	7.1573
472	14.11442	10.79014	7.15108
473	14.10327	10.79505	7.16114
474	14.10484	10.78818	7.1671
475	14.11246	10.78971	7.16116
476	14.10445	10.79458	7.16544
477	14.12288	10.80349	7.1627
478	14.09922	10.79469	7.16381
479	14.10675	10.80599	7.16706
480	14.11388	10.80328	7.16633
481	14.11166	10.79694	7.17657
482	14.11	10.80224	7.16746
483	14.11156	10.80857	7.1653

484	14.11333	10.80857	7.17019
485	14.09044	10.77645	7.17594
486	14.10651	10.8084	7.16795
487	14.11734	10.81722	7.16881
488	14.12442	10.8188	7.16728
489	14.12096	10.81092	7.16742
490	14.11178	10.82703	7.17548
491	14.11433	10.82056	7.17151
492	14.11844	10.82815	7.18099
493	14.12728	10.82862	7.17624
494	14.11854	10.82471	7.16723
495	14.11164	10.82551	7.17937
496	14.10834	10.82246	7.16912
497	14.11171	10.82659	7.17475
498	14.1109	10.83537	7.17582
499	14.12024	10.83887	7.17293
500	14.10154	10.82482	7.18311
501	14.11249	10.82955	7.1707
502	14.11462	10.83324	7.17942
503	14.12187	10.83293	7.17598
504	14.07709	10.81587	7.18096
505	14.107	10.83204	7.17766
506	14.10202	10.83868	7.18046
507	14.10386	10.83476	7.16999
508	14.10624	10.83762	7.18039
509	14.09619	10.83788	7.17016
510	14.09034	10.84254	7.1833
511	14.09488	10.84177	7.17244
512	14.09981	10.83327	7.16892
513	14.10516	10.83489	7.16865
514	14.10016	10.84627	7.17923
515	14.05124	10.81368	7.19197
516	14.08662	10.85002	7.1693
517	14.08353	10.86165	7.16833
518	14.08787	10.84295	7.14615
519	14.08388	10.8439	7.17627
520	14.08565	10.85322	7.17266
521	14.09122	10.84601	7.16548
522	14.08627	10.85981	7.17433
523	14.06312	10.83407	7.17745
524	14.0763	10.85577	7.17639
525	14.08052	10.84651	7.17989
526	14.06342	10.85447	7.18124
527	14.07127	10.852	7.14932
528	14.07061	10.86376	7.17678
529	14.07728	10.86885	7.17039
530	14.09539	10.8747	7.17507
531	14.07932	10.88149	7.17782
532	14.06733	10.85206	7.18038
533	14.0656	10.86635	7.16696
534	14.06931	10.86179	7.17127
535	14.07547	10.89443	7.17155
536	14.06052	10.8726	7.16162
537	14.06559	10.86571	7.16959

538	14.07437	10.87699	7.16619
539	14.05492	10.88278	7.17723
540	14.00153	10.83716	7.19167
541	14.06661	10.87824	7.16647
542	14.04952	10.89462	7.16758
543	14.06702	10.88368	7.15387
544	14.05677	10.87773	7.16616
545	14.05376	10.88429	7.14971
546	14.06197	10.90865	7.16353
547	14.06746	10.90421	7.16565
548	14.03513	10.89819	7.17386
549	14.05892	10.90304	7.16939
550	14.06769	10.89225	7.1632
551	14.05436	10.90379	7.16739
552	14.04295	10.90453	7.17775
553	14.05437	10.91549	7.18158
554	14.05868	10.92715	7.17064
555	14.07033	10.90273	7.1823
556	14.03304	10.8963	7.1849
557	14.0599	10.90798	7.18055
558	14.04913	10.92781	7.17134
559	14.05088	10.93585	7.15558
560	14.05479	10.91353	7.18275
561	14.04777	10.92996	7.17902
562	14.07116	10.94861	7.17486
563	14.08503	10.93863	7.18537
564	14.03048	10.92429	7.18925
565	14.07782	10.95928	7.19615
566	14.05584	10.94813	7.18934
567	14.07323	10.96961	7.16946
568	14.0664	10.96178	7.18582
569	14.06925	10.96642	7.18546
570	14.08051	10.97987	7.19237
571	14.08878	10.99393	7.19822
572	14.08306	10.98541	7.20389
573	14.07764	10.98847	7.20903
574	14.07872	10.98532	7.19962
575	14.09381	10.99937	7.21785
576	14.10235	11.00022	7.21464
577	14.10739	11.01993	7.21515
578	14.123	11.0337	7.21453
579	14.11148	11.03852	7.21828
580	14.13626	11.0798	7.21479
581	14.0901	11.01231	7.23975
582	14.12715	11.05842	7.23489
583	14.13177	11.06283	7.23772
584	14.14587	11.08268	7.23566
585	14.14505	11.0698	7.2476
586	14.14379	11.08519	7.23722
587	14.14922	11.10187	7.25463
588	14.16402	11.10497	7.2548
589	14.17263	11.13907	7.26693
590	14.21905	11.14058	7.26726
591	14.156	11.11238	7.28776

592	14.19605	11.14282	7.28537
593	14.19743	11.17711	7.29115
594	14.20547	11.17364	7.28727
595	14.23041	11.1917	7.30902
596	14.2286	11.19751	7.30917
597	14.24782	11.21256	7.30805
598	14.26637	11.22132	7.31815
599	14.27449	11.26001	7.33529
600	14.26456	11.23605	7.3309
601	14.32111	11.27579	7.37009
602	14.31065	11.29123	7.36104
603	14.33077	11.30907	7.37017
604	14.34631	11.30343	7.36791
605	14.35463	11.35184	7.38931
606	14.38001	11.35402	7.39085
607	14.38665	11.37955	7.4155
608	14.41502	11.39009	7.42053
609	14.42105	11.40216	7.43227
610	14.38852	11.39634	7.43237
611	14.47372	11.44743	7.44939
612	14.47149	11.4554	7.46601
613	14.48607	11.50007	7.47924
614	14.5217	11.5167	7.47529
615	14.53463	11.52565	7.49067
616	14.54564	11.5516	7.4998
617	14.57204	11.56902	7.53578
618	14.61697	11.60643	7.54471
619	14.61461	11.62568	7.56117
620	14.64541	11.63616	7.567
621	14.67955	11.67343	7.58673
622	14.70753	11.69159	7.60509
623	14.701	11.73004	7.61744
624	14.73318	11.74555	7.64714
625	14.77343	11.77731	7.64807
626	14.79499	11.81244	7.65355
627	14.8182	11.83025	7.65855
628	14.84708	11.86882	7.69519
629	14.8753	11.88375	7.7196
630	14.90178	11.91178	7.74027
631	14.93114	11.94957	7.76247
632	14.96625	11.96847	7.78292
633	14.99471	12.00334	7.80354
634	15.00737	12.0271	7.8066
635	15.06382	12.07372	7.84842
636	15.11239	12.08493	7.86665
637	15.12944	12.14102	7.87688
638	15.16002	12.19055	7.89557
639	15.21813	12.2007	7.92588
640	15.2492	12.23553	7.94572
641	15.26273	12.26796	7.96802
642	15.28556	12.30342	7.97782
643	15.33409	12.33343	8.02084
644	15.398	12.4008	8.03265
645	15.39219	12.43305	8.04684

646	15.44231	12.4239	8.0794
647	15.49652	12.49346	8.10746
648	15.53163	12.52896	8.13145
649	15.57367	12.58207	8.14621
650	15.59612	12.61404	8.20336
651	15.64997	12.64007	8.19955
652	15.67452	12.69262	8.24641
653	15.69674	12.74074	8.25632
654	15.77363	12.77858	8.30429
655	15.80299	12.81569	8.32238
656	15.85492	12.85037	8.33983
657	15.87098	12.88064	8.36145
658	15.95307	12.93837	8.39689
659	15.98811	12.99611	8.40656
660	15.99787	13.01621	8.46583
661	16.05071	13.05397	8.47937
662	16.12085	13.13452	8.51092
663	16.14496	13.13258	8.54333
664	16.20457	13.20498	8.54046
665	16.23643	13.2288	8.59411
666	16.27909	13.27393	8.61578
667	16.31891	13.3144	8.64363
668	16.37823	13.39288	8.67164
669	16.40462	13.40298	8.69874
670	16.44689	13.46608	8.74028
671	16.47686	13.48316	8.75101
672	16.55945	13.54207	8.78185
673	16.61543	13.6199	8.80645
674	16.6573	13.64768	8.83939
675	16.68025	13.6679	8.88183
676	16.72408	13.72132	8.91394
677	16.7965	13.80398	8.93876
678	16.85225	13.82435	8.97769
679	16.86563	13.86012	8.99819
680	16.93447	13.92293	9.02591
681	16.97136	13.9598	9.06882
682	17.051	14.02251	9.09034
683	17.05902	14.07769	9.13713
684	17.09891	14.07456	9.15313
685	17.17333	14.1606	9.19311
686	17.22392	14.22964	9.22103
687	17.27728	14.27028	9.25953
688	17.33546	14.29371	9.27724
689	17.35378	14.34473	9.32457
690	17.39187	14.39465	9.31794
691	17.43282	14.41077	9.37063
692	17.52616	14.49124	9.40585
693	17.55911	14.53874	9.43415
694	17.57329	14.56889	9.45235
695	17.66339	14.63065	9.48682
696	17.70309	14.66279	9.5156
697	17.72134	14.7027	9.55436
698	17.76483	14.72382	9.56521

699	17.83631	14.81788	9.60614
700	17.91555	14.84479	9.63855
701	17.90845	14.88236	9.66606
702	17.95649	14.94756	9.69663
703	18.03931	14.99914	9.71959
704	18.04864	15.02083	9.73287
705	18.11378	15.06657	9.77743
706	18.14681	15.11232	9.83657
707	18.1814	15.15515	9.85266
708	18.25097	15.2105	9.88785
709	18.27996	15.2636	9.91609
710	18.35231	15.24116	9.95628
711	18.3401	15.33041	9.95798
712	18.41903	15.37984	10.01881
713	18.50671	15.43263	10.0319
714	18.47249	15.47229	10.03742
715	18.56228	15.49145	10.09365
716	18.5862	15.54658	10.10307
717	18.6385	15.61003	10.1443
718	18.67061	15.61934	10.16386
719	18.72239	15.65442	10.18769
720	18.72357	15.73025	10.21393
721	18.78115	15.75177	10.24896
722	18.82367	15.80575	10.24012
723	18.85096	15.81201	10.28049
724	18.91456	15.85155	10.32653
725	18.94332	15.87352	10.34232
726	18.99166	15.95834	10.38608
727	19.04122	15.97631	10.34934
728	19.06437	16.01022	10.41388
729	19.10698	16.06749	10.43559
730	19.12062	16.07351	10.46314
731	19.19634	16.12829	10.49909
732	19.26864	16.14216	10.50657
733	19.22126	16.19646	10.52636
734	19.32789	16.24019	10.55621
735	19.35957	16.29508	10.57592
736	19.3669	16.30172	10.62616
737	19.41389	16.33787	10.65201
738	19.43864	16.36326	10.66868
739	19.48604	16.41516	10.69359
740	19.51871	16.44114	10.71139
741	19.5685	16.48621	10.72114
742	19.59902	16.52472	10.78162
743	19.60286	16.52673	10.79164
744	19.64336	16.57773	10.79948
745	19.64265	16.59195	10.81446
746	19.71478	16.64108	10.83459
747	19.76888	16.69421	10.85537
748	19.7672	16.71536	10.89056
749	19.78181	16.70476	10.88633
354	14.15991	10.61926	7.11779
355	14.12702	10.60391	7.10605

**Produced data for Figure 2a**

<b>Time (h)</b>	<b>Log (CFU/mL) - LBA</b>	<b>Log (CFU/mL) – LB<sub>2</sub>A</b>	<b>Log (CFU/mL) – LB<sub>4</sub>A</b>
0	6.12494	6.4776	6.54489
1	7.21041	7.06769	7.57062
3	9.34058	9.27766	8.49554
6	13.13801	12.34812	10.18378
24	11.99202	11.24485	10.12075

**Produced data for Figure 2b**

<b>Time (h)</b>	<b>Log (CFU/mL) – LBA</b>	<b>Log (CFU/mL) – LB<sub>2</sub>A</b>	<b>Log (CFU/mL) – LB<sub>4</sub>A</b>
1	7.21041	7.06769	7.57062
3	9.34058	9.27766	8.49554
6	13.13801	12.34812	10.18378

**Produced data for Figure 2c**

<b>Time (h)</b>	<b>OD600 – LBA</b>	<b>OD600 – LB<sub>2</sub>A</b>	<b>OD600 – LB<sub>4</sub>A</b>
1	0.206	0.207	0.105
3	2.03	1.26	0.54
6	4.91	2.45	1.25