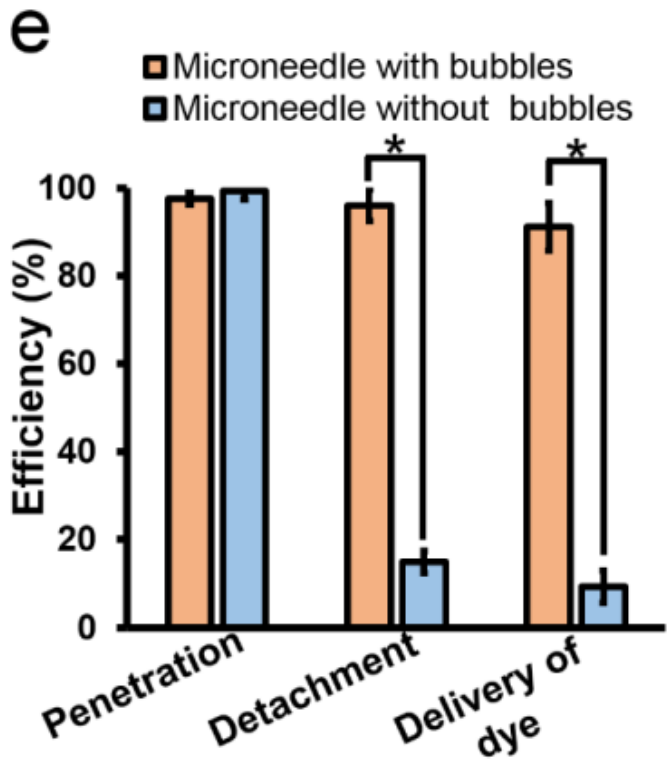
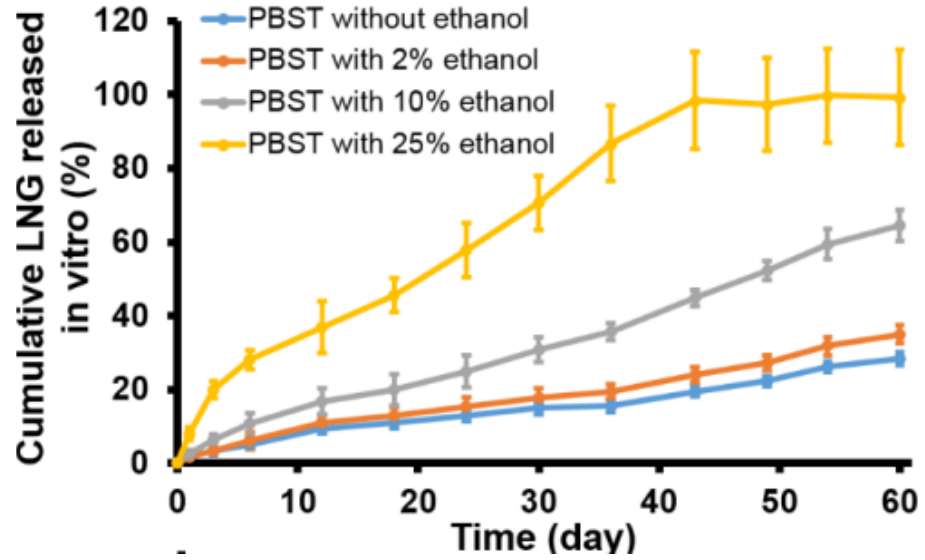


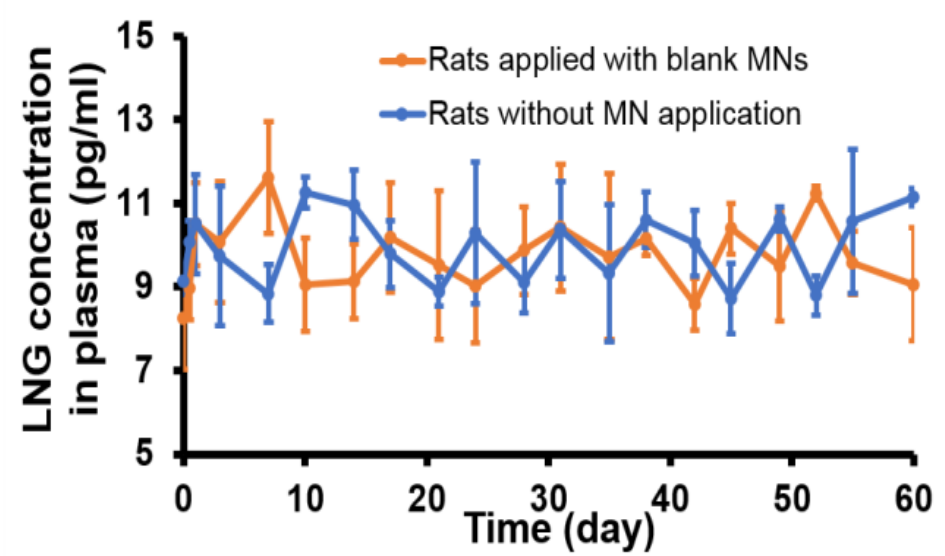
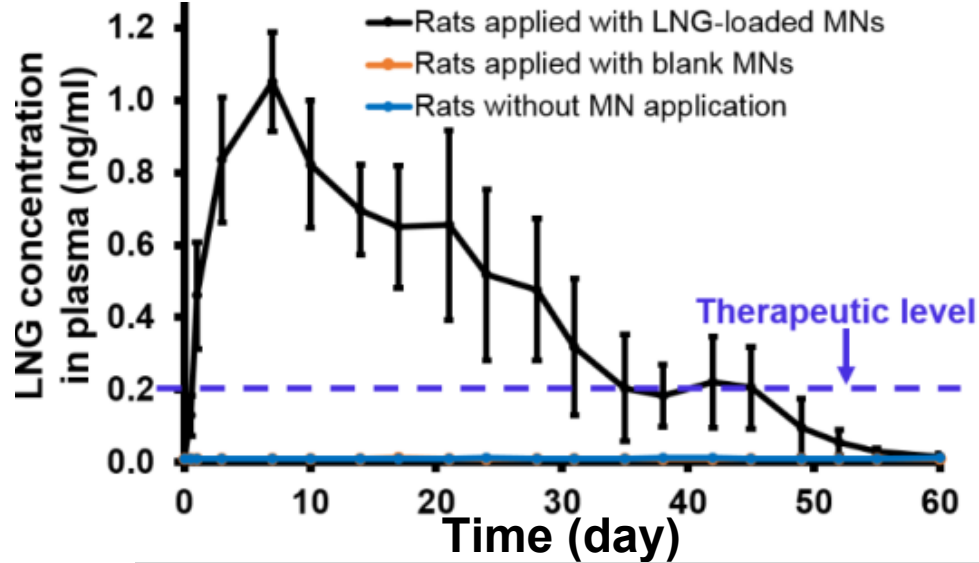
	30 $\mu\text{l}$ backing	50 $\mu\text{l}$ backing	70 $\mu\text{l}$ backing	90 $\mu\text{l}$ backing
Height of bubble	310.00	238.50	161.00	105.75
sd	26.46	16.30	20.02	11.79



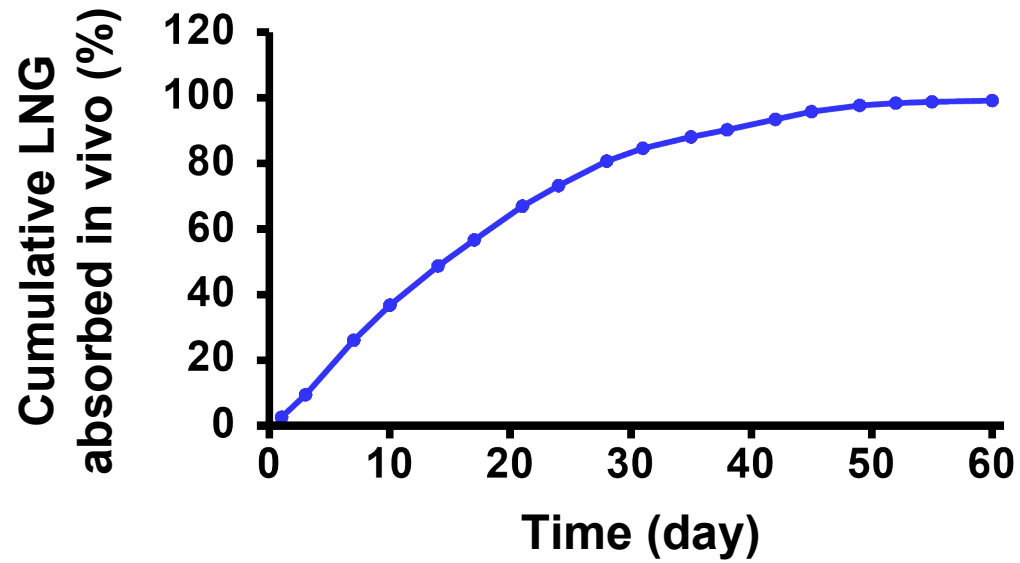
	Penetration	sd	Detachment	sd	Delivery of dye	sd
Microneedle with bubbles	97.60	1.30	96.00	3.65	91.12	5.44
Microneedle without bubbles	99.20	1.89	15.00	2.50	9.23	3.70



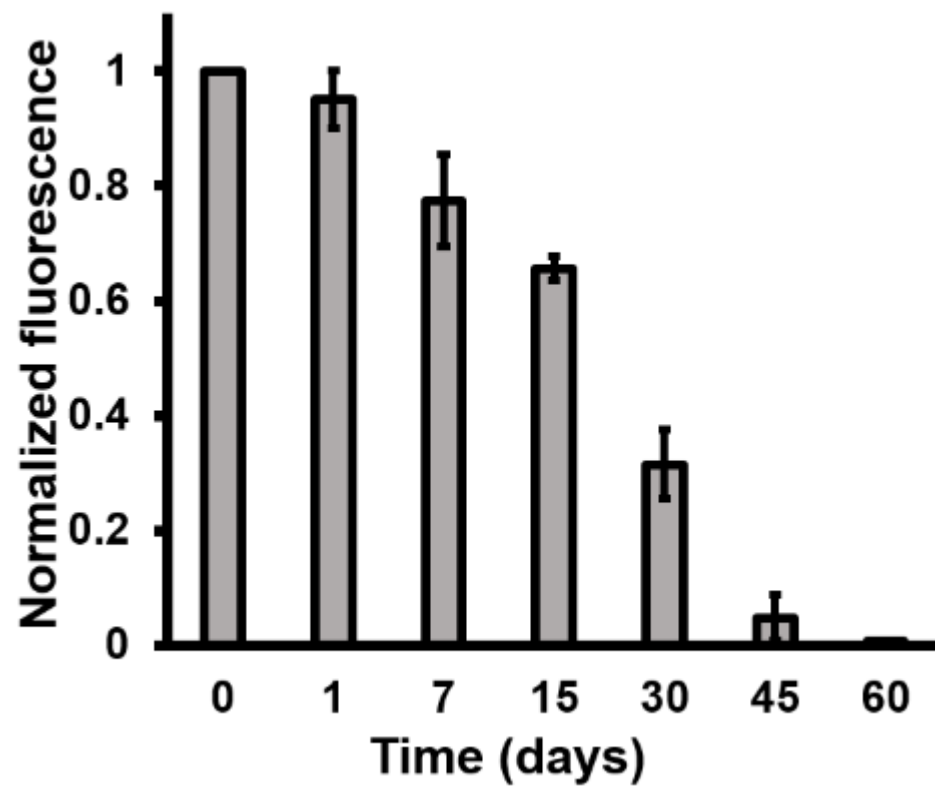
Time (Day)	PBST without ethanol		PBST with 2% ethanol		PBST with 10% ethanol		PBST with 25% ethanol	
	Mean	sd	Mean	sd	Mean	sd	Mean	sd
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1	1.660	0.528	1.817	0.506	2.637	0.990	8.020	1.826
3	3.273	1.177	3.383	0.906	6.340	1.403	19.893	2.311
6	5.127	0.992	6.123	2.275	10.617	3.045	28.037	2.594
12	9.280	1.230	10.883	2.028	16.797	3.430	36.917	6.948
18	11.000	1.639	13.007	2.276	19.980	4.239	45.613	4.628
24	12.940	1.675	15.363	2.536	24.910	4.411	57.840	7.268
30	14.940	1.716	17.753	2.492	30.767	3.330	70.693	7.321
36	15.717	1.769	19.350	2.054	35.683	2.268	86.737	10.140
43	19.457	1.369	24.020	1.958	44.863	2.171	98.483	13.051
49	22.303	1.384	27.247	2.106	52.333	2.616	97.350	12.617
54	26.130	1.436	31.787	2.498	59.450	4.050	99.777	12.812
60	28.413	1.717	34.953	2.469	64.487	4.160	99.383	12.950



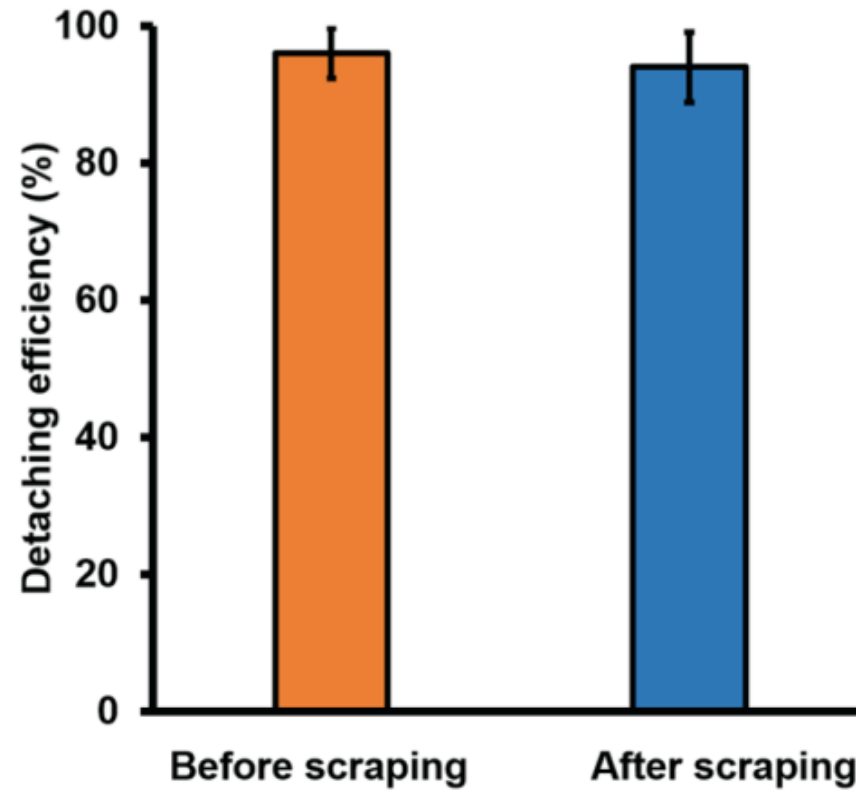
time (d)	Rats applied with LNG-loaded MNs (ng/ml)		Rats applied with blank MNs (pg/ml)		Rats without MN application (pg/ml)	
	Mean	sd	Mean	sd	Mean	sd
0	0.008	0.001	8.265	1.230	9.132	0.320
0.5	0.129	0.055	8.959	0.754	10.073	0.515
1	0.460	0.147	10.499	0.987	10.499	1.179
3	0.836	0.174	10.073	1.450	9.733	1.669
7	1.051	0.136	11.610	1.331	8.839	0.690
10	0.823	0.175	9.057	1.120	11.244	0.371
14	0.697	0.124	9.132	0.901	10.964	0.820
17	0.650	0.170	10.190	1.310	9.790	0.798
21	0.655	0.261	9.520	1.780	8.880	0.351
24	0.517	0.235	9.010	1.360	10.280	1.693
28	0.476	0.196	9.870	1.045	9.120	0.733
31	0.318	0.189	10.420	1.524	10.366	1.165
35	0.204	0.147	9.723	1.977	9.330	1.644
38	0.183	0.085	10.153	0.394	10.603	0.663
42	0.221	0.126	8.578	0.617	10.034	0.789
45	0.206	0.113	10.390	0.602	8.713	0.837
49	0.096	0.080	9.494	1.311	10.623	0.291
52	0.054	0.036	11.241	0.172	8.800	0.470
55	0.028	0.010	9.572	0.765	10.561	1.719
60	0.016	0.008	9.062	1.356	11.141	0.203



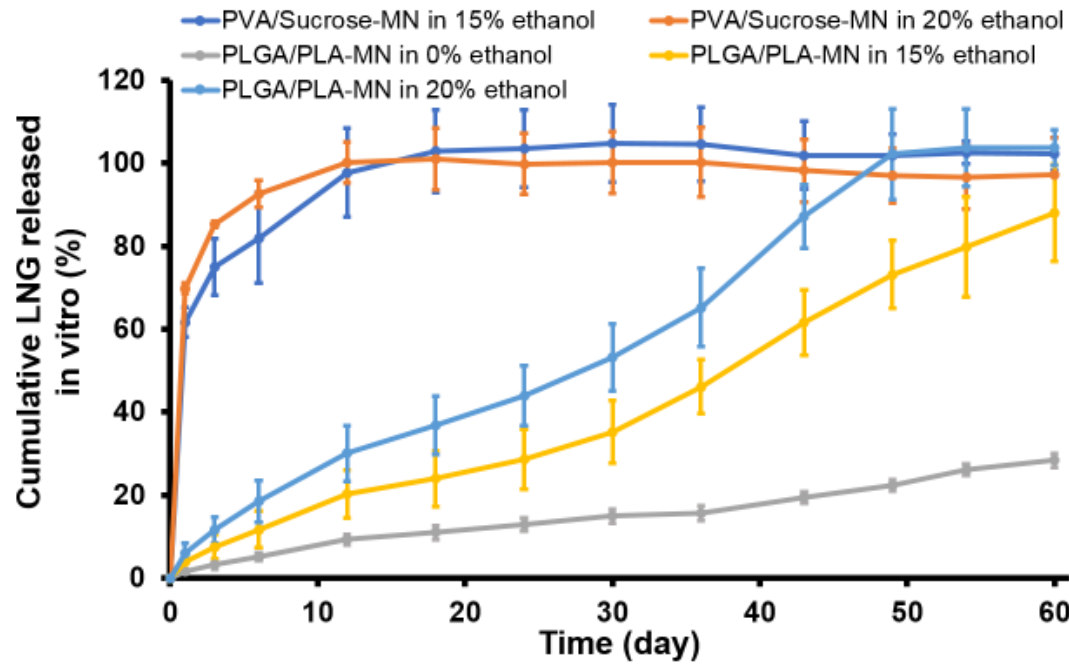
Time (d)	Mean	sd
1	2.5825	0.9673
3	9.4238	2.6888
7	26.0700	5.9010
10	36.7475	7.5376
14	48.7050	9.0857
17	56.6350	9.3460
21	66.9563	9.4242
24	73.2175	8.9814
28	80.7050	8.1646
31	84.6088	6.8824
35	88.0900	5.1863
38	90.2488	4.5099
42	93.4388	3.4788
45	95.7988	2.7105
49	97.6825	1.8454
52	98.3963	1.5421
55	98.7888	1.5153
60	99.1650	1.5053



Time (day)	0	1	7	15	30	45	60
Normalized	1	0.95	0.77	0.66	0.32	0.05	0.01
sd	0	0.05	0.08	0.02	0.06	0.04	0.00

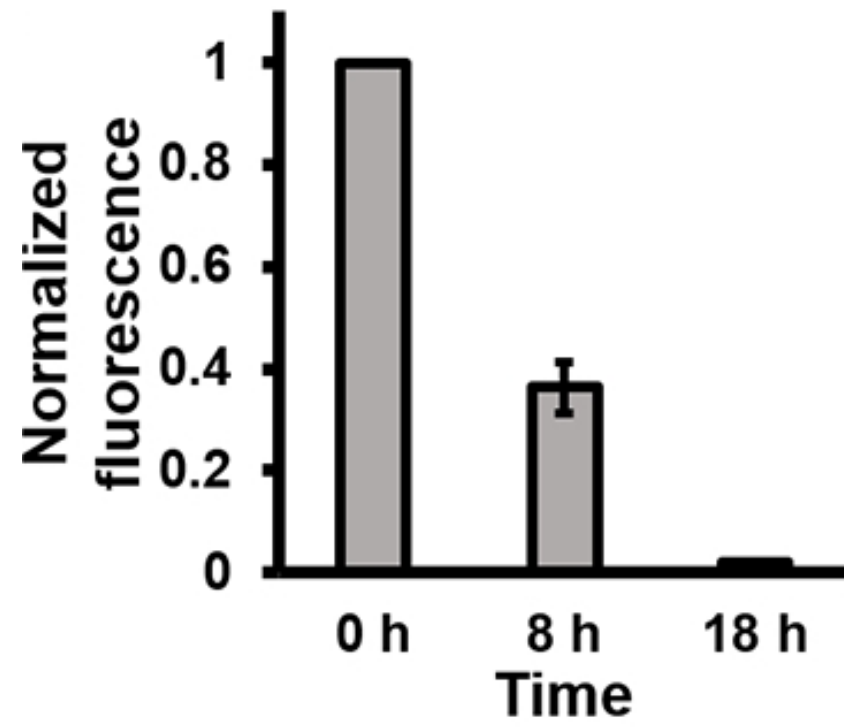


	Before scraping	After scraping
Mean	96.2	94.0
sd	3.7	5.1

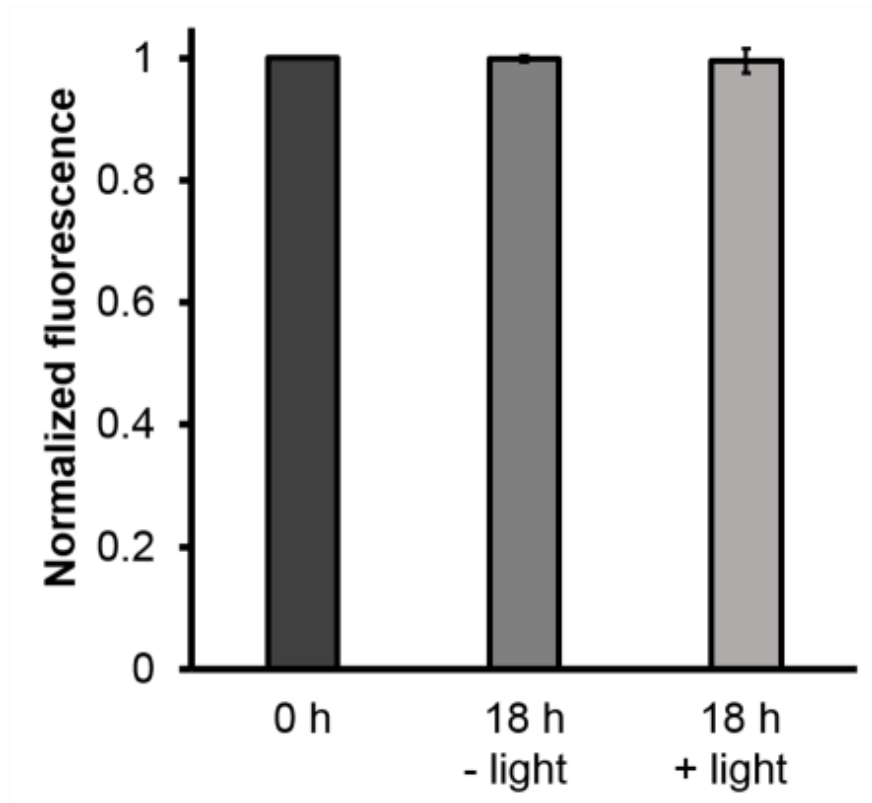


Time (day)	PVA/Sucrose-MN in 15%EtOH		PVA/Sucrose-MN in 20%EtOH		PLGA/PLA-MN in 15% EtOH		PLGA/PLA-MN in 20% EtOH		PLGA/PLA-MN in 0% EtOH	
	mean	sd	mean	sd	mean	sd	mean	sd	mean	sd
0	0	0	0	0	0	0	0	0	0	0
1	61.659	3.589	69.854	1.253	3.958	1.994	6.037	2.347	1.660	0.528
3	74.946	6.835	85.250	0.790	7.530	2.976	11.594	3.107	3.273	1.177
6	82.019	10.854	92.632	3.169	11.686	4.399	18.525	5.060	5.127	0.992
12	97.686	10.703	100.128	4.935	20.311	5.752	30.117	6.723	9.280	1.230
18	102.868	9.945	100.958	7.450	23.965	6.786	36.819	6.983	11.000	1.639
24	103.540	9.373	99.771	7.343	28.660	7.320	44.031	7.268	12.940	1.675
30	104.814	9.358	100.165	7.403	35.254	7.528	53.155	8.122	14.940	1.716
36	104.543	8.842	100.213	8.412	46.156	6.582	65.218	9.405	15.717	1.769
43	101.878	8.195	98.210	7.541	61.579	7.928	87.128	7.621	19.457	1.369
49	101.806	5.253	97.042	6.625	73.219	8.209	102.201	10.845	22.303	1.384
54	102.542	2.670	96.661	7.605	79.822	12.124	103.754	9.403	26.130	1.436
60	102.224	4.026	97.281	8.891	87.985	11.602	103.663	4.324	28.413	1.717

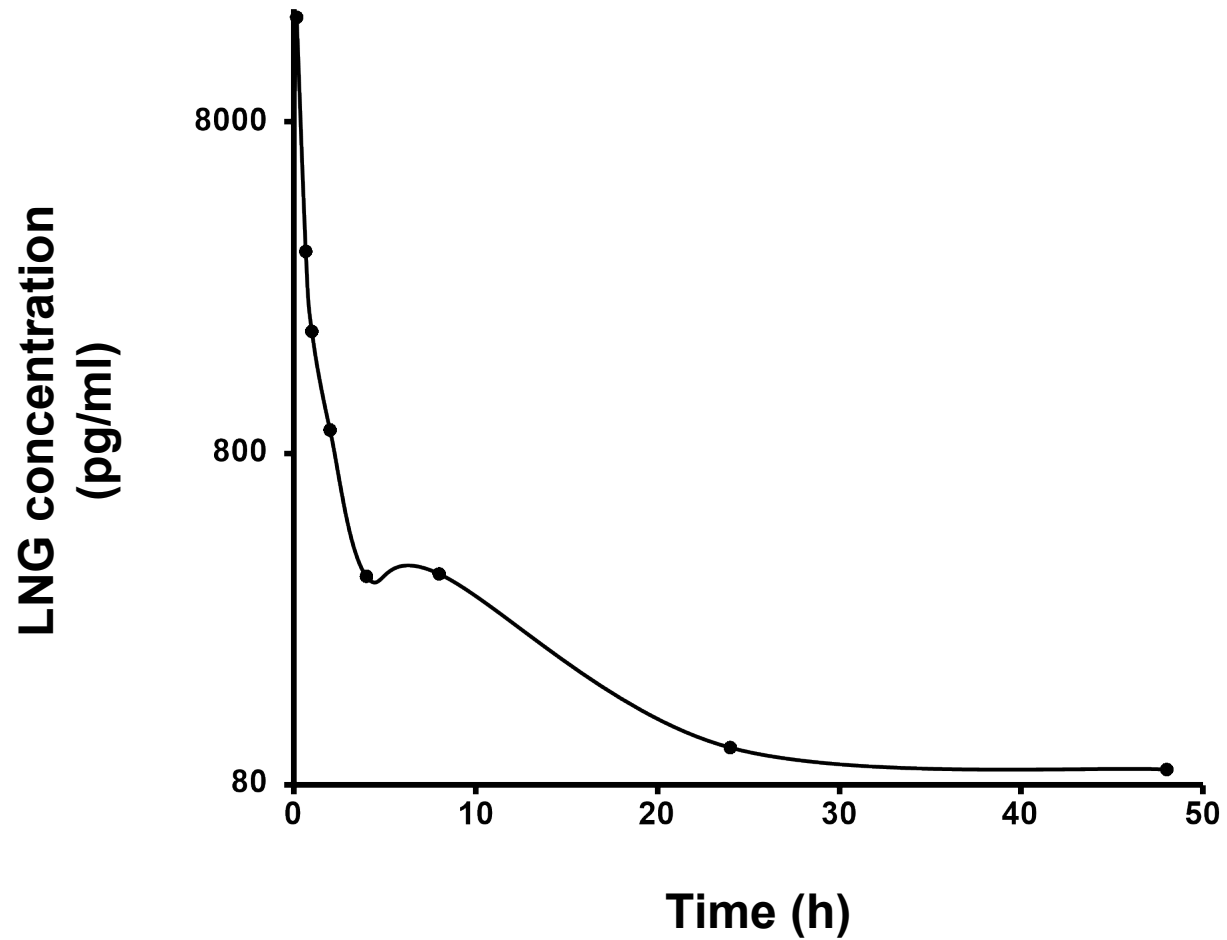




Time (h)	0	8	18
Normalized	1	0.36	0.02
sd	0	0.05	0.00



Conditions	0 h	18 h without light	18 with light
Normalized	1	0.996	0.973
sd	0	0.005	0.020



Time (h)	Mean (pg/ml)	sd
0.17	16536	318.5421
0.67	3255.5	183.2341
1	1867.375	117.3665
2	941.88	71.80486
4	341.05	5.753124
8	346.9	6.075643
24	103.8075	2.748307
48	89.17	2.714534