

**Supplementary Table 1** Change in viscosity during pullulan production at different  $k_{La}$  conditions

Time (hours)	Viscosity (cP) at 1.99 $k_{La}$	Viscosity (cP) at 1.4 $k_{La}$	Viscosity (cP) at 1.1 $k_{La}$	Viscosity (cP) at 0.29 $k_{La}$	Viscosity (cP) at 0.28 $k_{La}$
0	1.2	1.18	1.23	1.1	1.1
8	3.14	3.74	2.63	1.69	1.25
16	9.24	8.65	6.67	2.03	1.99
24	15.04	12.13	8.58	4.02	3.68
32	20.52	13.5	10.5	4.90	4.63
40	22.88	17.12	14.69	5.44	5.32
46	25.95	20.43	16.41	5.82	5.76