

Figure S1 FTIR spectra of Ag NCs, BSA and Lysozyme. where peaks shows at the 2962, 2874, 1658, 1454, 2496 that corresponds to functional groups like NH<sub>2</sub>, CH, C=O (carboxylic group) and C=C stretching of aromatic ring and SH group, respectively.

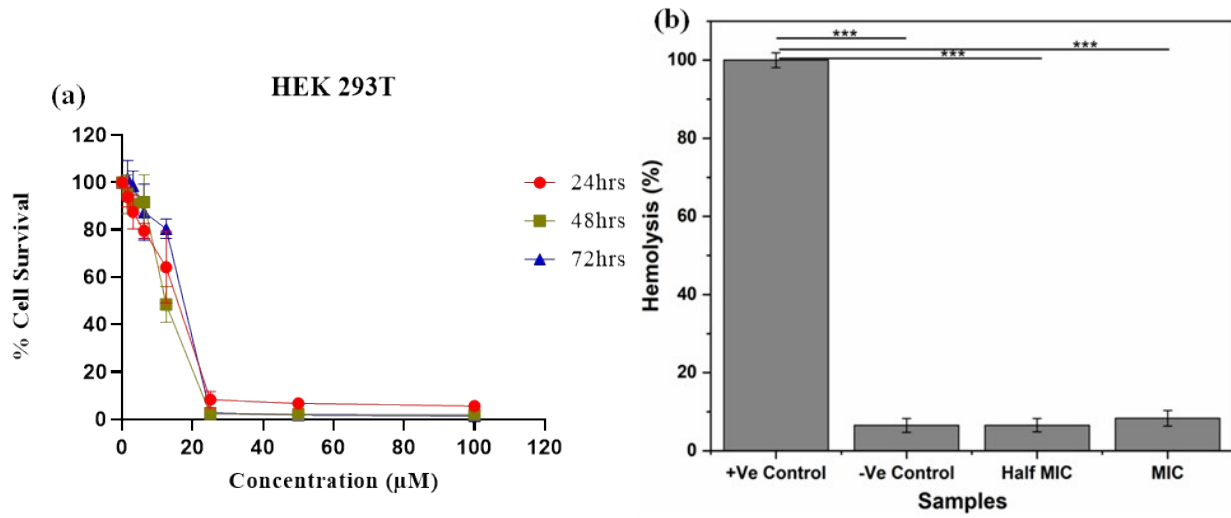


Figure S2 a) Study of cytotoxic effects of Ag NCs on HEK 293T. The cells were treated with Ag NCs at various concentrations ranging from 1.5625 to 100 µM for 24 hr, 48 hr and 72 hr, respectively. The MTT assay was then performed to measure the cell viability. b) Hemolysis assay at different concentrations of Ag NCs (MIC and MIC/2) at physiological pH (7.4). Each experiment was repeated thrice and the result was represented as mean ± SD.

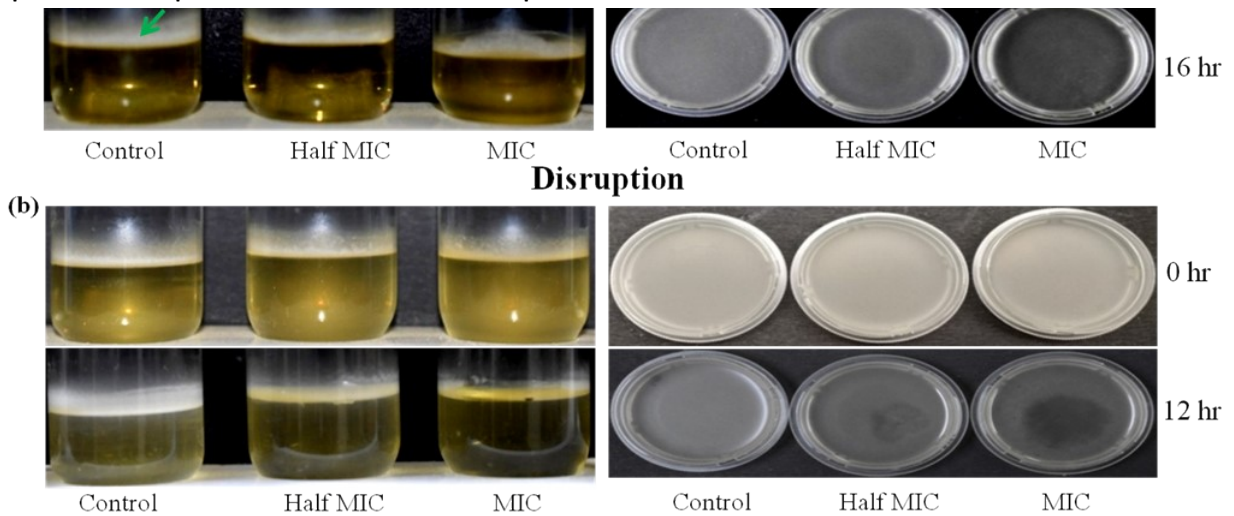


Figure S3 Ag NCs induced inhibition and disruption of biofilm from *B. subtilis* a) Qualitative analysis of biofilm inhibition after 16 hr of treatment by Ag NCs (MIC and half MIC dose) b) Qualitative analysis of biofilm disruption by 12 hr treatment of established biofilm by Ag NCs (MIC and half MIC dose). The mass of biofilm is indicated by green arrow.

**Table S1** List of downregulated genes from DEG analysis

S.No	Gene ID	Gene name	Log2fold change	pAdj value
1	P39603	ywcE	-5.45	1.2995E-05
2	O32241	sdpl	-5.12	0.00078025
3	O32242	sdpR	-3.92	0.00557969
4	P26901	katA	-3.52	0.03085577
5	O34718	ioIT	-3.33	0.00652648
6	O34409	yflN	-3.21	0.02587952
7	O34653	des	-3.17	0.0316143
8	P37960	mrgA	-2.94	0.04016809
9	P19220	adaB	-2.89	0.01397245
10	O32202	lial	-2.87	0.04853495
11	O34742	opuCD	-2.84	0.01818985
12	O31551	acoR	-2.7	0.03691535
13	Q00828	rapA	-2.71	0.04705609

14	P0AF01	modB	-2.56	0.03930012
15	P25148	gspA	-2.54	0.04215821
16	O34626	yfmB	-2.46	0.03082434
17	O31688	zosA	-2.45	0.04704492
18	O32243	opuCC	-2.30	0.03660402
19	O34992	opuCA	-2.29	0.03161246
20	O34718	iolT	-2.23	0.04080891

---

**Table S2** List of upregulated genes from DEG analysis

<b>S.No</b>	<b>Gene ID</b>	<b>Gene name</b>	<b>Log2fold change</b>	<b>pAdj value</b>
1	Q07833	WapA	5.64	8.9412E-12
2	P68577	sunA	5.47	3.7799E-09
3	P19947	rpmD	5.14	5.7338E-07
4	O05404	sigV	5.13	8.9087E-06
5	P63740	carB	4.99	1.1958E-05
6	O05403	rsiV	4.98	3.8766E-06
7	P25971	pyrF	4.95	4.5328E-06
8	Q07836	wapI	4.85	4.73E-08
9	P25996	pyrD	4.85	1.8633E-05
10	P54507	tasA	4.46	4.5328E-06
11	Q81WF6	pyrE	4.42	3.1691E-05
12	P20166	ptsG	4.37	3.6432E-06
13	P19946	rplO	4.36	0.0004243
14	P99147	carA	4.35	0.00021798
15	P25983	pyrK	4.29	0.00010446
16	P39579	dltC	4.10	0.00018094
17	P46898	rplF	4.04	0.00232542
18	P39581	dltA	4.02	0.00026834
19	P46899	rplR	4.01	0.00323412
20	P0CI78	rplX	3.97	0.00176857

21	P13714	ldh	3.95	0.00018094
22	P71014	bslA	3.93	3.1691E-05
23	Q7A3D6	oatA	3.91	0.00083348
24	P02394	rplL	3.88	0.00409074
25	P12878	rpsN1	3.83	0.00652648
26	P42920	rplC	3.82	0.0031688
27	Q2FZW3	dltD	3.81	0.0016297
28	P42923	rplJ	3.80	0.00549294
29	P02968	hag	3.79	0.00348626
30	P12873	rpmC	3.74	0.0059456
31	P20278	rpmJ	3.72	0.00811679
32	P14577	rplP	3.71	0.00758968
33	P20282	rpsM	3.64	0.00762861
34	P12875	rplN	3.60	0.01532703
35	P9WGF5	Rv2025c	3.59	0.00291258
36	Q08313	cotX	3.59	0.000231
37	Q81WF0	pyrC	3.58	0.0028961
38	P55910	lctP	3.56	0.00031207
39	P21472	rpsL	3.56	0.0097659
40	P21468	rpsF	3.55	0.00758968
41	P94571	bcrC	3.48	0.00727747
42	P21881	pdhA	3.46	0.00415688
43	P21467	rpsE	3.40	0.02226868
44	P37877	ackA	3.37	0.00079891
45	P71012	fruA	3.36	0.00084606
46	P96611	ydbP	3.32	0.00758968
47	P12877	rplE	3.29	0.02915079
48	P45744	dhbC	3.28	0.00050911
49	P21883	pdhC	3.28	0.01456117

50	P04969	rpsK	3.28	0.02071379
51	P42919	rplB	3.25	0.02493323
52	P08877	ptsH	3.24	0.01693831
53	Q5HEB7	ddl	3.22	0.00652648
54	P39214	mcpA	3.22	0.00075374
55	P37455	ssbA	3.21	0.02679884
56	P19994	map	3.20	0.03036149
57	Q08312	cotZ	3.16	0.00085297
58	P21474	rpsP	3.16	0.01782143
59	Q02170	ysxA	3.15	0.00550595
60	P21466	rpsD	3.15	0.02156978
61	Q833W9	lacC	3.13	0.00291258
62	P23453	fliM	3.12	0.00323412
63	P94391	putC	3.12	0.00492874
64	P94356	yxkC	3.12	0.01301556
65	P55874	rpml	3.12	0.02493323
66	P39801	cotG	3.10	0.00313996
67	P21471	rpsJ	3.10	0.04890216
68	Q08311	cotY	3.07	0.00145562
69	O06477	yfmS	3.05	0.00176857
70	P21464	rpsB	3.04	0.03085577
71	P21469	rpsG	3.04	0.04243709
72	P39739	fliS	3.02	0.00274493
73	P26908	rplU	3.01	0.0316143
74	P39070	clpQ	2.97	0.00314597
75	P0ABK2	cydB	2.97	0.00314597
76	P94431	ycnI	2.96	0.02548038
77	P31847	ypuA	2.96	0.00550595
78	P21465	rpsC	2.96	0.04778271

79	Q05873	valS	2.95	0.0024216
80	P40409	feuA	2.95	0.00848917
81	P29018	cydD	2.93	0.00401494
82	Q01095	Flavodoxin	2.93	0.00863243
83	O34841	yoeB	2.93	0.01202349
84	P45743	dhbB	2.933	0.00250432
85	P21874	pdhB	2.925	0.02966292
86	P67248	SAV1236	2.91	0.01827027
87	O31601	yjbC	2.91	0.01786897
88	P56427	motB	2.90	0.00314597
89	P39778	clpY	2.90	0.00957328
90	Q57538	HI_0664	2.87	0.00578544
91	Q5SHU9	truA	2.86	0.0099021
92	P9WFM7	Rv2908c	2.86	0.01337927
93	P42921	rplD	2.84	0.04890216
94	P40410	feuB	2.81	0.01247799
95	O34334	yjoA	2.80	0.01206026
96	P39776	xerC	2.80	0.02071379
97	P08838	ptsI	2.80	0.04464702
98	P39802	cheW	2.79	0.00459818
99	P15874	grpE	2.78	0.01369084
100	P32132	typA	2.76	0.02724455
101	Q9WYN9	cheB	2.76	0.00713351
102	P45745	dhbF	2.76	0.00549294
103	P67744	lacR	2.75	0.02623084
104	P29072	cheA	2.75	0.00492874
105	P80870	yugI	2.74	0.03627705
106	Q09049	cydA	2.73	0.00762861
107	P11880	murF	2.72	0.00578544



108	O06478	yfmT	2.71	0.00551198
109	P39071	dhbA	2.68	0.00725336
110	O34981	dapH	2.68	0.00846472
111	O31773	pbpX	2.67	0.04961252
112	P94433	ycnK	2.67	0.04704492
113	P0AEJ0	emrB	2.67	0.01827027
114	P05654	pyrB	2.66	0.03036149
115	P0A1J3	flgG	2.66	0.00873229
116	O31986	sunS	2.60	0.01903934
117	Q01465	mreB	2.59	0.03007193
118	P09424	mtlD	2.59	0.02099034
119	O06873	pomA	2.58	0.01266217
120	P10726	sigD	2.58	0.00965037
121	P40404	cheD	2.57	0.02373216
122	Q01960	flhF	2.56	0.01202349
123	P0AC38	aspA	2.55	0.02071379
124	P40403	cheC	2.55	0.00957328
125	P68571	bdbB	2.55	0.03732145
126	C0H3V2	mtlF	2.54	0.01827027
127	O34798	pdaC	2.53	0.04016809
128	P39646	pta	2.53	0.01782143
129	Q08310	cotW	2.53	0.01827027
130	C1I202	pnpB	2.53	0.02493323
131	Q01466	mreC	2.52	0.02998558
132	P39779	codY	2.50	0.043491
133	O34746	fabHA	2.50	0.04961252
134	P39758	abh	2.50	0.01827027
135	Q7A4T3	SA1683	2.50	0.03732145
136	P67513	leuS	2.49	0.01562704

137	O32188	yusV	2.49	0.03131935
138	P20964	obg	2.49	0.02286174
139	P54716	glvA	2.49	0.02615122
140	P39597	efeN	2.48	0.01975161
141	Q08309	cotV	2.47	0.01303186
142	P54700	fliP	2.47	0.02158911
143	P41972	ileS	2.46	0.03085577
144	P15925	fpgS	2.46	0.01284788
145	P00961	glyS	2.45	0.02158911
146	P55192	ybbA	2.44	0.01556297
147	P18255	thrS	2.44	0.03166798
148	P40727	flhB	2.42	0.02071379
149	P40871	dhbE	2.40	0.02328062
150	P94421	yclQ	2.40	0.04255691
151	P40411	feuC	2.40	0.02099034
152	Q02169	maf	2.38	0.04115657
153	P59852	lagD	2.38	0.03210787
154	P40291	sctN	2.37	0.02149387
155	P39815	trmFO	2.37	0.0200452
156	P67011	alaS	2.36	0.01780296
157	P35620	flhA	2.35	0.02775602
158	P42199	tcyA	2.34	0.02493323
159	P42596	rlmG	2.34	0.04312013
160	O66647	serS	2.31	0.02594576
161	P25798	fliF	2.31	0.02506192
162	P39738	fliD	2.30	0.03082434
163	O31711	yknY	2.30	0.04358295
164	P39808	yvyG	2.30	0.03085577
165	P42200	tcyB	2.29	0.03085577

166	O32102	besA	2.28	0.02615122
167	Q5M244	ecfA2	2.26	0.03210787
168	P40742	ylxH	2.24	0.03166798
169	P18429	xynA	2.21	0.03142669
170	Q9WY63	fliG	2.19	0.03810607
171	P18158	glpD	2.19	0.04115657
172	Q65JX9	murB	2.18	0.04617176
173	Q97NF1	gpsA	2.18	0.04138928
174	P17631	dnaJ	2.16	0.03627705
175	P54944	yxeE	2.13	0.03753502
176	P54941	yxeB	2.12	0.04255691
177	O67081	glyQ	2.12	0.04307256
178	O34925	deoD	2.11	0.04243709

---