

Supplementary File 1

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Biosynthesis of TiO₂ and ZnO nanoparticles by *Halomonas elongata* IBRC-M 10214 in different conditions of medium

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Table S1. Orthogonal array of Taguchi experimental design for biological synthesis of TiO₂ NPs

Trail No.	A (M)	B (°C)	C (hour)
1	0.1	25	48
2	0.1	30	72
3	0.1	37	96
4	0.01	25	72
5	0.01	30	96
6	0.01	37	48
7	0.001	25	96
8	0.001	30	48
9	0.001	37	72

Table S2. Orthogonal array of Taguchi experimental design for biological synthesis of ZnO NPs

Trail No.	A (M)	B (M)	C (°C)
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1	0.1	0.05	25
2	0.1	0.07	30
3	0.1	1	37
4	0.01	0.05	30
5	0.01	0.07	37
6	0.01	1	25
7	0.001	0.05	37
8	0.001	0.07	25
9	0.001	1	30

Table S3. Effects of three different factors on the TiO₂ NPs biosynthesis

Factors	Level 1	Level 2	Level 3
A	0.012	0.001	0
B	0.003	0.004	0.005
C	0.003	0.004	0.005

Table S4. Effects of three different factors on the ZnO NPs biosynthesis

Factors	Level 1	Level 2	Level 3
A	0.453	0.514	0.28
B	0.296	0.389	0.562

C	0.361	0.269	0.617
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Table S5. Analysis of variance (ANOVA) for TiO₂ NPs biosynthesis

Factors	DOF (f)	Sum of Sqrs.	Variance	F-Ratio (F)	Pure Sum (S')	Percent (%)
A	2	0	0	2.746	0	44.888
B	2	0	0	0.062	0	0
C	2	0	0	0.082	0	0

Table S6. Analysis of variance (ANOVA) for ZnO NPs biosynthesis

Factors	DOF (f)	Sum of Sqrs.	Variance	F-Ratio (F)	Pure Sum (S')	Percent (%)
A	2	0.089	0.044	2.215	0.048	11.245
B	2	0.109	0.054	2.731	0.069	16.013
C	2	0.195	0.097	4.863	0.155	35.736

Table S7. Optimum conditions of TiO₂ NPs biosynthesis by bacterium

Factors	Level	Contribution
A	1	0.007
B	3	0.001
C	3	0.001
Total contribution from all factors	-	0.008
Current grand average of performance	-	0.004
Expected result at optimum condition	-	0.013