

Supplementary Materials: Characterization and Genome Analysis of *Arthrobacter bangladeshi* sp. nov., Applied for the Green Synthesis of Silver Nanoparticles and Their Antibacterial Efficacy against Drug-Resistant Human Pathogens

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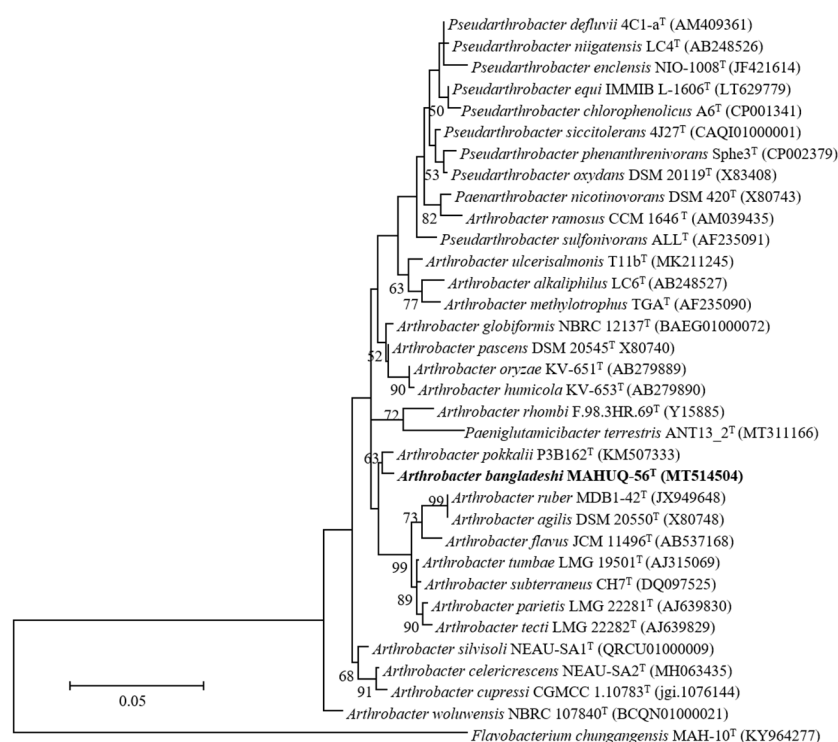


Figure S1. The maximum-likelihood (ML) tree based on 16S rRNA gene sequence analysis showing phylogenetic relationships of strain MAHUQ-56 and the related type strains. Values less than 50% were not shown. Scale bar, 0.05 substitutions per nucleotide position.

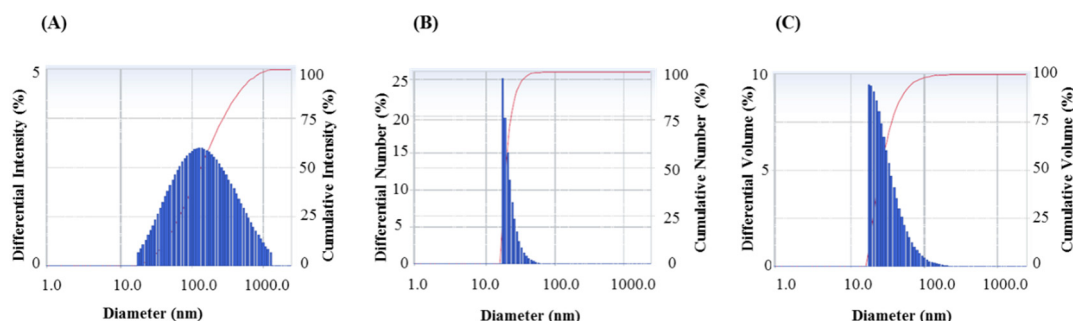


Figure S2. Particles size distribution of biosynthesized AgNPs according to intensity (A), number (B) and volume (C).

Table S1. dDDH and ANI values between proposed novel strain MAHUQ-56^T and the closest type strains.

Query genome	Reference genome	Formula 1				Formula 2 (Recommended)				Formula 3				ANI (%)
		DDH	Model C.I.	Distance	Prob. DDH ≥ 70%	DDH	Model C.I.	Distance	Prob. DDH ≥ 70%	DDH	Model C.I.	Distance	Prob. DDH ≥ 70%	
<i>Arthrobacter bangladeshi</i> MAHUQ-56 ^T (JAIFZQ000000000)	<i>Arthrobacter pokkali</i> GZK-1 (GCA_006715285.1)	51.9	[48.4 - 55.3%]	0.2932	16.42	27.5	[25.1–30.0%]	0.1568	0.03	44.3	[41.3 - 47.4%]	0.4040	0.56	84.06 Gc=65.86
	<i>Arthrobacter phenanthrenivorans</i> Sphe3 (GCA_000189535.1)	39.3	[35.9 - 42.8%]	0.3994	1.43	24.5	[22.2 – 27.0%]	0.1778	0.01	34.4	[31.4 - 37.5%]	0.5062	0.02	81.53 GC=65.37
	<i>Arthrobacter enclensis</i> NIO-1008 (GCA_001457025.1)	40.8	[37.5 - 44.3%]	0.3843	2.05	24.8	[22.5 - 27.3%]	0.1758	0.01	35.5	[32.6 - 38.6%]	0.4926	0.03	82.02 GC=67.09

Table S2. dDDH and ANI values between proposed novel strain MAHUQ-56^T and the closest type strains.

Bacteria used for synthesis of AgNPs	Size of AgNPs	Average hydrodynamic diameter	Polydispersity index	Absorbance peaks found by FTIR analysis	Reference
<i>Arthrobacter bangladeshi</i>	12-50 nm	122.5 nm	0.286	3438.60, 2921.32, 2848.50, 2352.20, 2330.50 and 1645.20 cm ⁻¹	In the current study
<i>Cedecea</i> sp.	10–40 nm	115.9 nm	0.39	3241.87, 2915.24, 2848.56, 2113.44, 1999.70, 1922.51, 1621.15, 1514.19, 1444.29 and 1007.59 cm ⁻¹	[43]
<i>Paenarthrobacter nicotinovorans</i>	13–27 nm	44.2 nm	0.443	3420.90, 2921.69, 2851.34, 2360.21, 2341.64, 1653.02, and 1033.62 cm ⁻¹	[45]
<i>Terrabacter humi</i>	6-24 nm	Not available	Not available	3444.65, 2917.98, 2847.83, 2360.10, 2342.18, 1635.91, 1374.25 and 1175.36 cm ⁻¹	[46]