

Pyoverdin mediated sunlight induced green synthesis of silver nanoparticles

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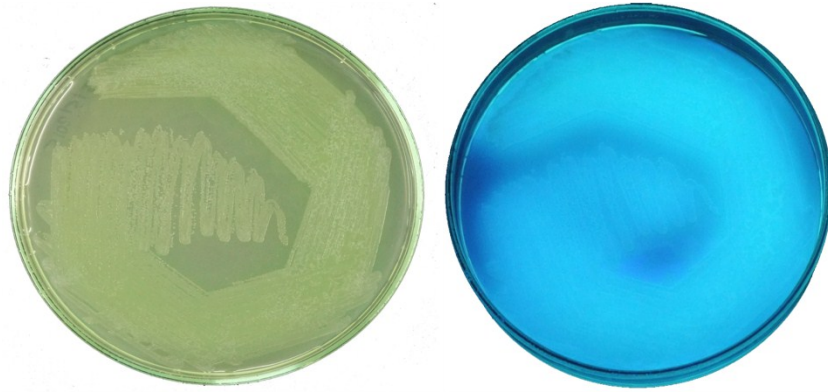
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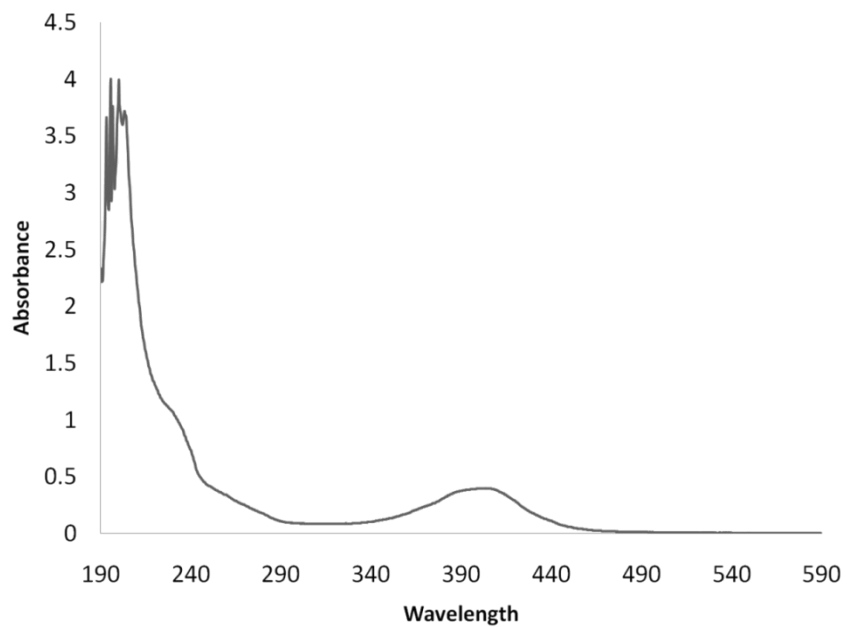
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Supplementary Information:

Fig. S1. The fluorescence of *P. aeruginosa* PSR 213 grown on solid King's B medium observed before and after illuminated with UV transilluminator at 254 nm.



S2. UV-Visible spectrum of PVD produced by *Pseudomonas aeruginosa* PSR 213



S3. Morphological and biochemical characteristics of *Pseudomonas* sp.

Morphological characteristics	
Colony on King'sB medium	Opaque, regular, smooth
Gram character	Gram negative short rods
Microscopy	Motile
Spore	Non spore forming
Pigment on King'B	Bright fluorescent diffusible pigment
Growth on Cetrimide agar	+
Biochemical characteristics	
Amylase	+
Catalase	+
IMViC	+ - - +
Oxidase	+
H ₂ S production	-
Glucose fermentation	-
Haemolysis	Non haemolytic

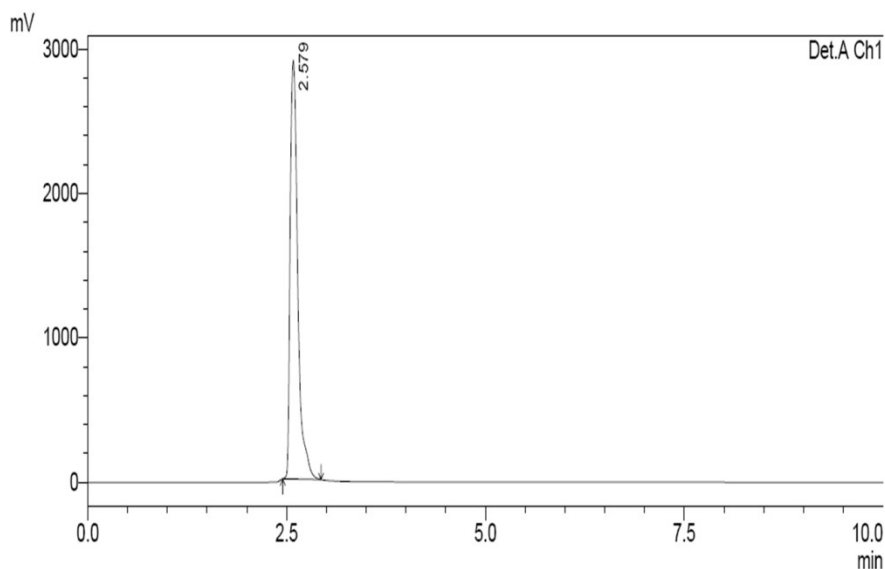
I:Indole production; M: Methyl red; V: Voges-Proskauer; C: Citrate utilization

The isolate SBC-I was (i) catalase and oxidase positive, (ii) able to produce indole and utilize citrate but unable to ferment glucose and failed to produce acetoin, H₂S and on the basis of these results, the isolate SBC-I was tentatively identified as *Pseudomonas* sp.

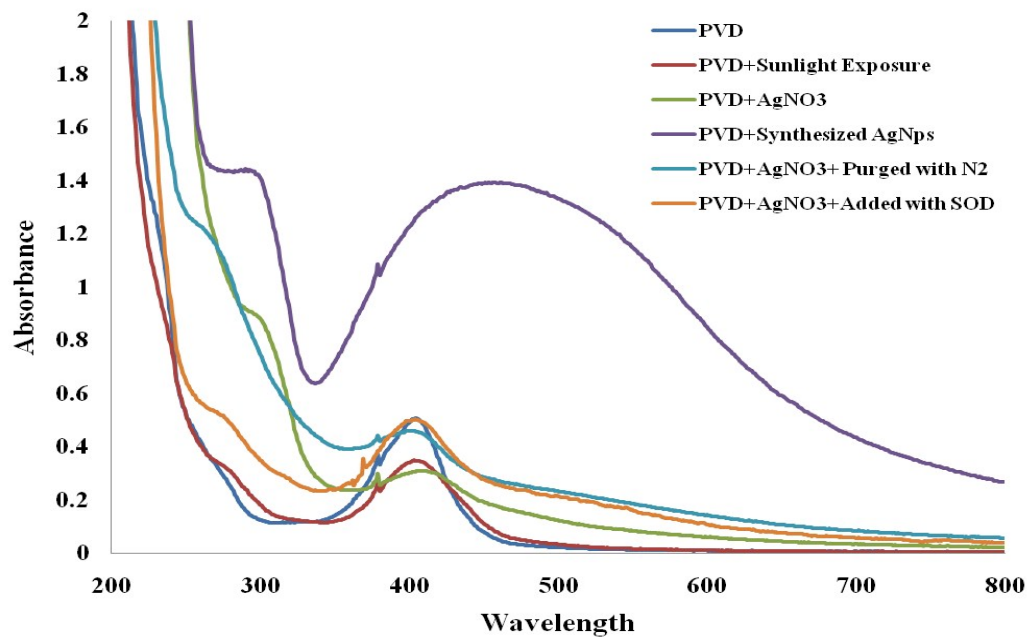
S4. The 16s rRNA gene sequence of *Pseudomonas aeruginosa* PSR 213 submitted to GenBank (Accession No. KJ857033)

TGCAGTCGAGCGGATGAAGGGAGCTTGCTCCTGGATTGAGCGGCGGACGGGTGAGTAATGCCT
AGGAATCTGCCTGGTAGTGGGGGATAACGTCCGGAAACGGGCGCTAATACCGCAGACGTCTCG
AGGGAGAAAGTGGGGGATCTTCGGACCTCACGCTATCAGATGAGCCTAGGTCCGATTAGCTAGT
TGGTGGGGTAAAGGCCTACCAAGGCGACGATCCGTAACCTGGTCTGAGAGGATGATCAGTCACA
CTGGAACCTGAGACACGGTCCAGACTCCTACGGGAGGCAGCAGTGGGGAAATATTGGACAATGGG
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AGGTGCGAAAGCGTGGGGAGCAAACAGGATTAGATACCCTGGTAGTCCACGCCGTAAACGATG
TCGACTAGCCGTTGGGATCCTTGAGATCTTAGTGGCGCAGCTAACCGGATAAGTCGACCGCCTG
GGGAGTACGGCCGCAAGGTTAAAACCTCAAATGAATTGACGGGGGCCCCGACAAGCGGTGGAG
CATGTGGTTTAATTGAAGCAACGCGAAGAACCTTACCTGGCCTTGACATGCTGAGAATTTC
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GTGAGATGTTGGGTTAAGTCCCGTAACGAGCGCAACCCTTGTCTTAGTTACCAGCACCTCGGGT
GGCACTCTAAGGAGACTGCCGGTGACAAACCGGAGGAAGGTGGGGATGACGTCAAGTCATC
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GAGGTGGAGCTAATCCATAAAACCGATCGTAGTCCGGATCGCAGTCTGCAACTCGACTGCGTG
AAGTCGGAATCGTAGTAATCGTGAATCAGAATGTCACGGTGAATACGTTCCCGGGCCTTGTA
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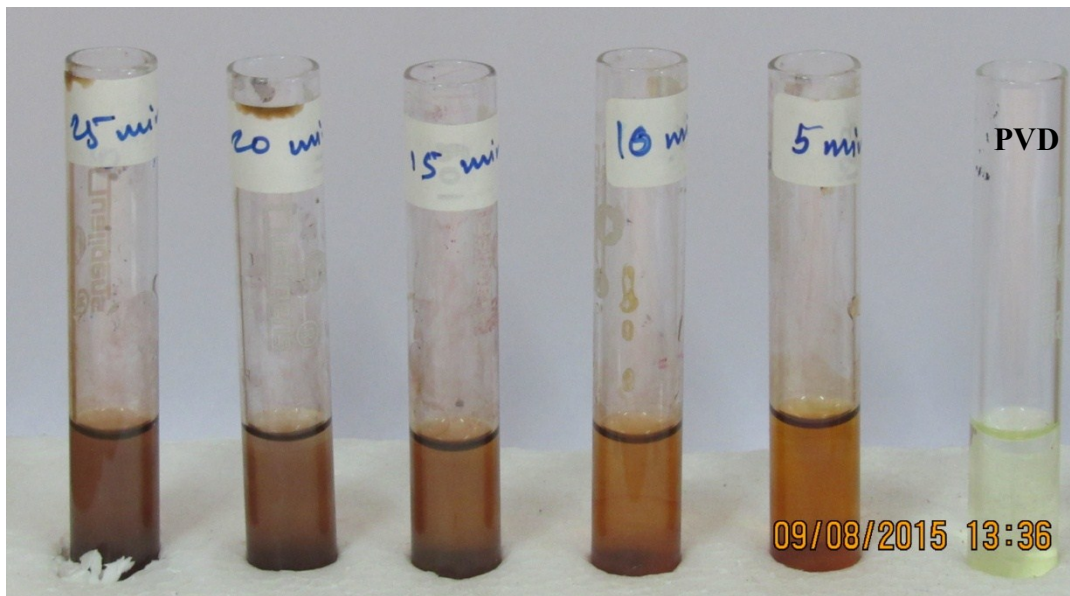
S5. RP-HPLC of purified pyoverdinin produced by *Pseudomonas aeruginosa* PSR 213.



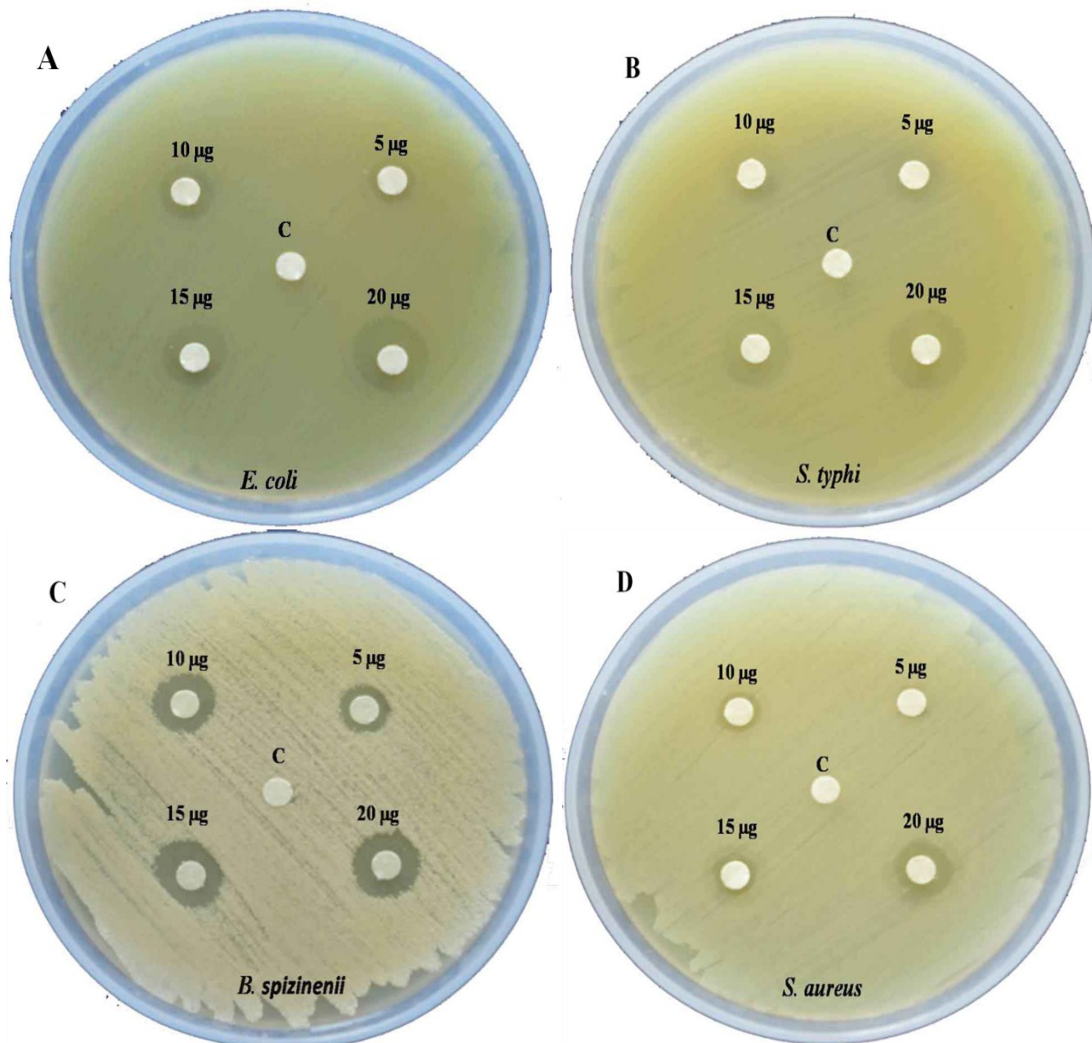
S6. UV-Vis spectra of PVD, PVD (exposed to sunlight), PVD-AgNO₃, PVD-AgNps (synthesized AgNps after exposed to sunlight), PVD-AgNO₃ purged with N₂ (exposed to sunlight) and PVD-AgNO₃ added with SOD (exposed to sunlight).



S7. Photograph of AgNps synthesized with function of time.



S8. Antibacterial activity of AgNps against human pathogens *Escherichia coli*, *Salmonella typhi*, *Bacillus spizizenii* and *Staphylococcus aureus*



S9. The size evolutions of the resultant AgNps upon the sun-light illumination durations from 5 min to 30 min.

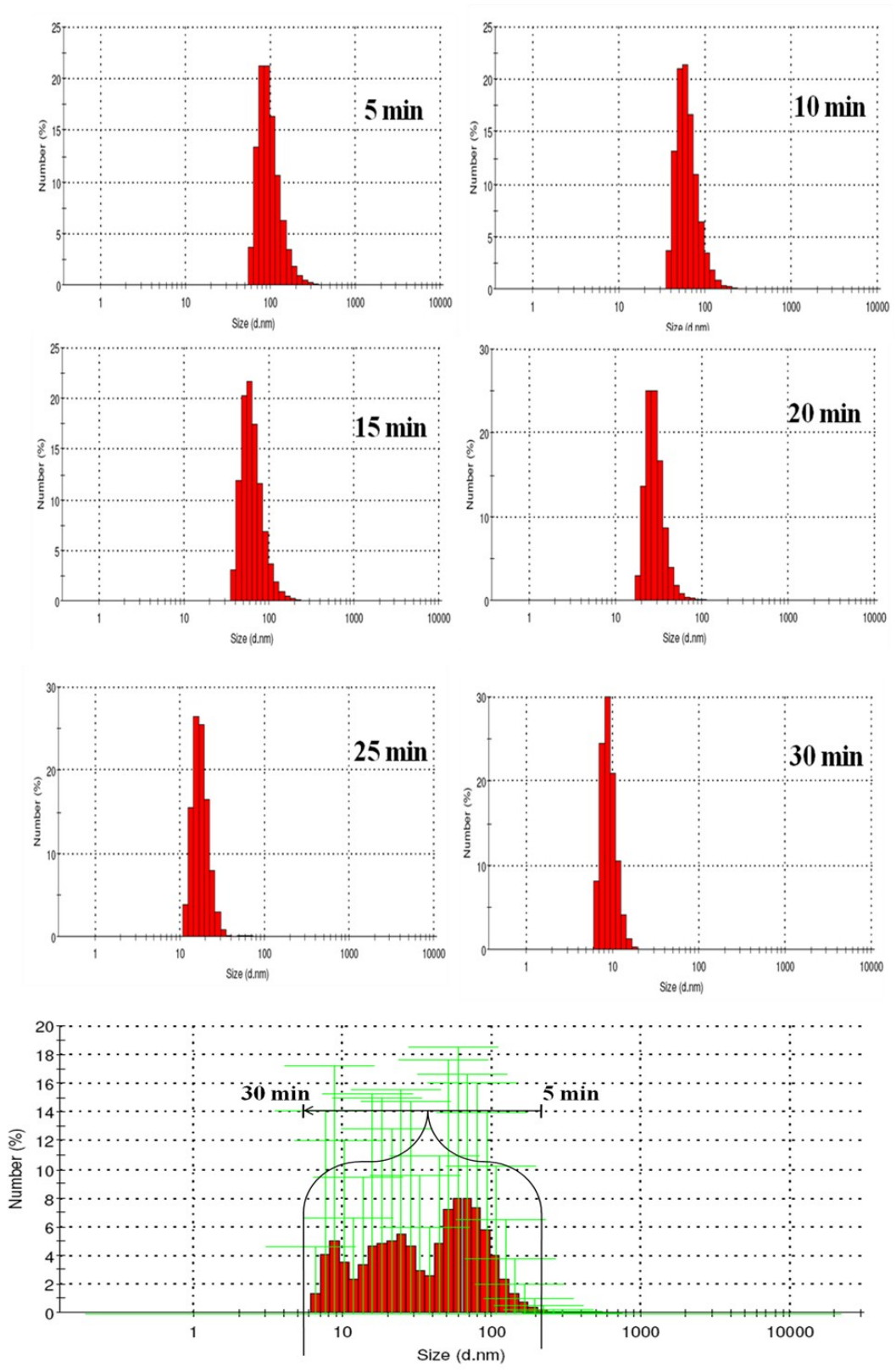


Table S1. Screening of 3 different medium for siderophoregenesis of *Pseudomonas* sp.

Isolates	Siderophore Units (%)		
	SCM	KMB	PPM
SBC-A	75	62	31
SBC-I	80	66	29
SBC-J	72	57	28
SBC-K	63	46	32
SBC-L	56	47	30
SBC-M	50	43	33

SCM: Succinic Acid Medium; **KMB:** King's B Medium; **PPM:** Pigment Production Medium

Table S2. Antibacterial activity of synthesized AgNps.

Pathogen	Concentration of AgNps ($\mu\text{g/ml}$)	Mean zone of Inhibition (mm)
<i>Escherichia coli</i> (ATCC 8739)	05	07
	10	10
	15	14
	20	15
<i>Salmonella typhi</i> (NCIM 2501)	05	10
	10	10
	15	15
	20	17
<i>Bacillus spizizenii</i> (ATCC 6633)	05	10
	10	14
	15	15
	20	15
<i>Staphylococcus aureus</i> (ATCC 6538)	05	00
	10	08
	15	08
	20	11