

Biosurfactant Production Using Mutant Strains of *Pseudomonas aeruginosa* and *Bacillus subtilis* from Agro-industrial Wastes

Supplementary Table 1. Evaluation of biosurfactants produced by wild and mutant strains

Sample	Surface Tension (D/cm)	Emulsification Index (%)	Oil Displacement (mm)	Dry weight of biosurfactants (g/L)	P-value
PS2	38.25±0.32	50.05±1.03	23.38±0.98	0.878±0.61	0.0*
PS2mu	29.67±0.44	63.34±1.47	39.73±2.03	0.992±0.01	0.0*
BS3	34.12±1.12	57.17±0.32	28.21±1.21	0.905±1.04	0.0*
BS3mu	25.96±0.38	65.73±0.65	45.66±0.58	1.112±0.11	0.0*
Tween 80	20.19±1.18	51.17±2.03	27.96±1.20	NA	0.0*

All data were statistically described in terms of mean and standard error (\pm S. E); *, represent highly significant difference ($P < 0.001$)

Supplementary Table 2. Antimicrobial activity of the biosurfactants

Isolates		Inhibition zone diameter (mm) at different concentrations (mg/L)							
		0	10.2	20.4	30.6	61.2	122.4	PC	NC
Bacteria	<i>Escherichia coli</i>	N	N	N	N	8	11	25	N
	<i>Salmonella</i>	N	N	N	N	6	14	20	N
	<i>Shigellae</i> spp	N	N	N	N	N	N	17	N
	<i>Listeria</i> spp	N	N	N	N	N	N	21	N
	<i>Vibrio</i> spp	N	N	N	N	N	N	18	N
	<i>Staphylococcus aureus</i>	N	N	N	N	N	N	22	N
Fungi	<i>Aspergillus niger</i>	N	N	N	N	N	N	31	N
	<i>Aspergillus flavus</i>	N	N	N	N	N	N	36	N
	<i>Candida albicans</i>	N	N	N	N	N	N	34	N

Diameters are recorded as mean values of triplicate measurements

KEY:

N: No zone of inhibition

Positive Control (PC): Gentamicin (10 μ g) for Bacteria; Clotrimazole (50 μ g) for Fungi

Negative Control (NC): Dimethyl Sulfoxide (DMSO) (5 mm) for both bacteria and fungi