SUPPLEMENTARY MATERIALS

Molecular Characterization and Biocompatibility of Exopolysaccharide Produced by Moderately Halophilic bacterium *Virgibacillus dokdonensis* from the Saltern of Kumta Coast

Affiliation

***Gurunathan Jayaraman-** Department of Biotechnology, School of Biosciences and Technology, Vellore Institute of Technology, Vellore, Tamil Nadu, India 632014

 # Monic Andrew- Department of Biotechnology, School of Biosciences and Technology, Vellore Institute of Technology, Vellore, Tamil Nadu, India 632014

***Corresponding author:** Dr G.Jayaraman, E-mail: gjayaraman@vit.ac.in. Tel: + 91416 2202011. Fax: + 91 416 224 3092

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(5.605 min); peak 4 – mannose (5.807 min); peak 5 – ribose (5.884 min); peak 6 – xylose (13.916 min); peak 7 – fructose (13.104 min).

Supplementary Figure S7. XRD profile of EPS

Total: Tables (3)

Table S1. Total carbohydrate and proteins in Exopolysaccharides (EPS)

Strain	**Final concentration CHO (% w/w)**	**Protein (% w/w)**
Virgibacillus sp VITP14	96.75.10 ± 0.76	0.47 ± 0.10

Table S2. EPS production of different strains from different locations that are compared to the strains of present study

S.No	**Microorganism**	**Source**	**Growth Medium**	**EPS Yield (g/L)**	**Reference**
1	*Pantoea* sp. *BM39*	Tyrrhenian Sea	EMG medium	21.3	(Silvi et al 2013)
2	*Halobacillus* sp *EG1HP4QL*	Lake Qarun, Egypt	S-G medium, Sucrose	5.9	(Ibrahim et al 2020)
3	*Halomonas hydrothermalis* MB45	South Indian Ocean	Zobell marine broth	5.2	(Banerjee et al 2020)
4	*Rhodobacter johrii.*	Cabo-De-Rama beach Goa, India	R2A medium with Glucose	6.2	(Sran Kulwinder Singh et al 2019)
5	*E. cloacae* VVD-MBB8	Gulf of Mannar, Tamil Nadu, India.	Modified Minimal media	18.3	(Karuppiah et al 2021)
6	***Virgibacillus Dockdonensis VITP14***	Saltern Kumta coast, Arabian Sea, India	Zobell Marine broth	17.3	**Present study**
			Zobell Marine broth + glucose	23.2	
7	*Salibacterium halochares STm*	Cuatro Ciénegas Basin, Coahuila Mexico	yeast extract and NaCl	17.3	(Lopez et al 2021)
8	*Chromohalobacter salexigens*	Lake Qarun, Egypt	Sucrose	15.1	(Ibrahim et al 2022)

Table S3. Anti-coagulant activity of EPS based on APTT and PT

S.No	EPS concentration µg/mL	APTT (seconds)	PT (seconds)
1	Control	32.4 ± 1.8	13.8 ±1.9
2	50	28.6 ± 1.4^{ns}	13.6 ± 0.8^{ns}
3	100	43.2 ± 1.9^{b}	24.7 ± 1.2^{a}
4	500	123.3 ± 1.9^{a}	61.4 ± 1.5^{a}

Note: ns-non significant; a-(p<0.0001) b-(p<0.001) were statistically significant in comparison to control

Figures (7)

Figure S1:

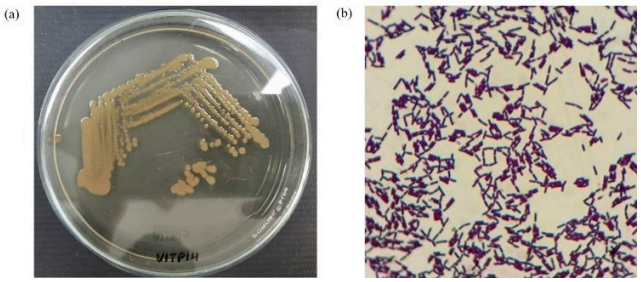

Figure S1. (a) Mucoid colonies of *Virgibacillus dokdonensis* VITP14; (**b)** Morphology of *Virgibacillus dokdonensis*-VITP14 (100X Magnification under Light Microscope)

Figure S2

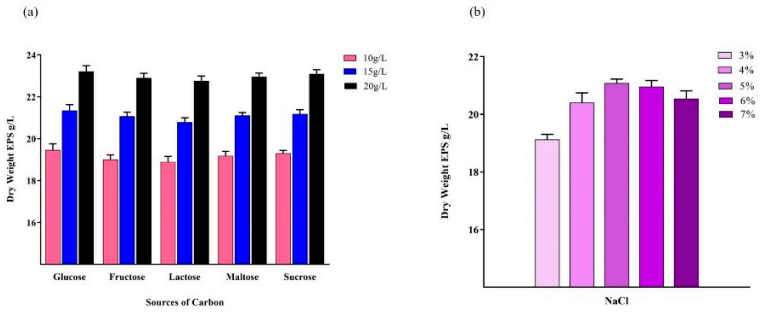

Figure S2. (a) EPS production by different carbon sources; **(b)** EPS production under different salt conditions

Figure S3

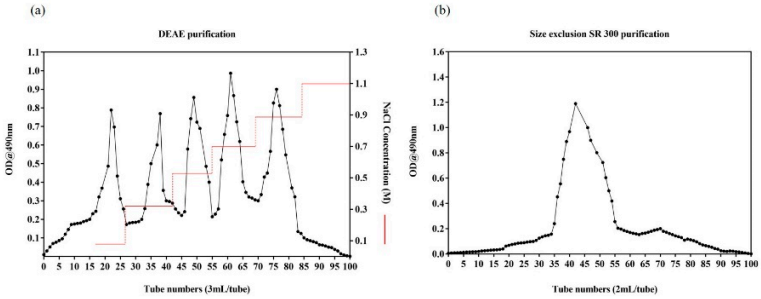

Figure S3. (a) Elution curve of EPS fractions in DEAE–cellulose 52 anion-exchange column purified by different concentrations of NaCl (0.1-1.1M); **(b)** Elution curve of EPS on Sephacryl S-300 gel chromatography column with distilled water.

Figure S4

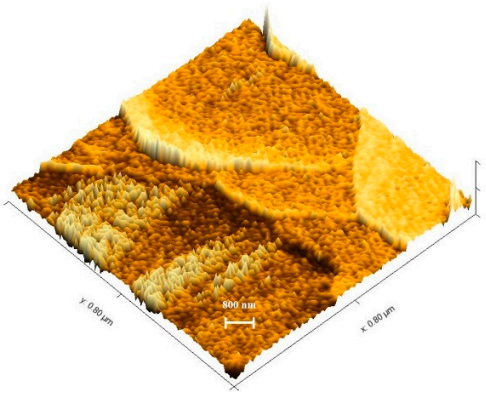

Figure S4. AFM analysis of EPS (3D view) 800nm scale

Figure S5

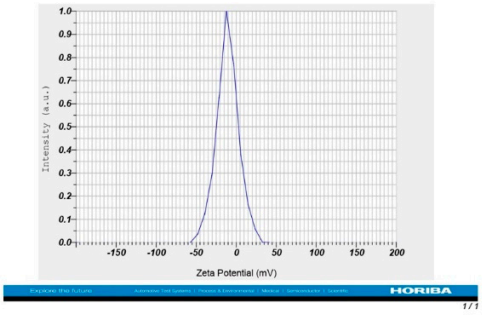

Figure S5. Zeta potential of EPS

Figure S6:

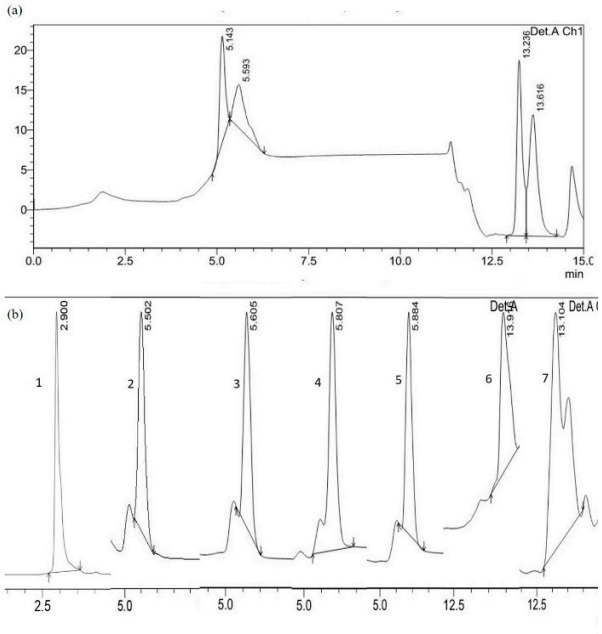

Figure S6. (a) The HPLC results of *Virgibacillus dokdonensis* VITP14 Exopolysaccharide (EPS) (glucose – 5.143 min; ribose – 5.593 min; fructose – 13.236 min; xylose – 13.616 min; **(b)** The HPLC chromatographic peaks of sugar standards: peak 1- arabinose; peak 2 – glucose (5.502 min); peak 3 – galactose (5.605 min); peak 4 – mannose (5.807 min); peak 5 – ribose (5.884 min); peak 6 – xylose (13.916 min); peak 7 – fructose (13.104 min).

Figure S7:

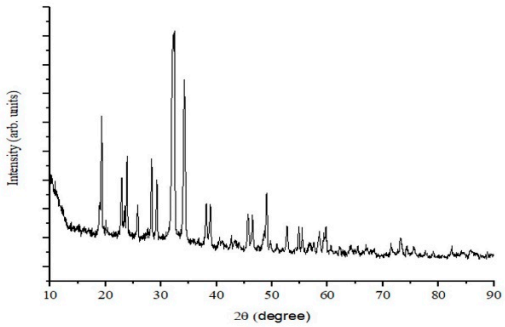

Figure S7. XRD profile of EPS