

Antibacterial Activities of Bacteria Isolated from the Marine Sponges *Isodictya compressa* and *Higginsia bidentifera* Collected from Algoa Bay, South Africa

Relebohile Matthew Matobole ¹, Leonardo Joaquim van Zyl ^{1,*}, Shirley Parker-Nance ^{3,4}, Michael T. Davies-Coleman ² and Marla Trindade ¹

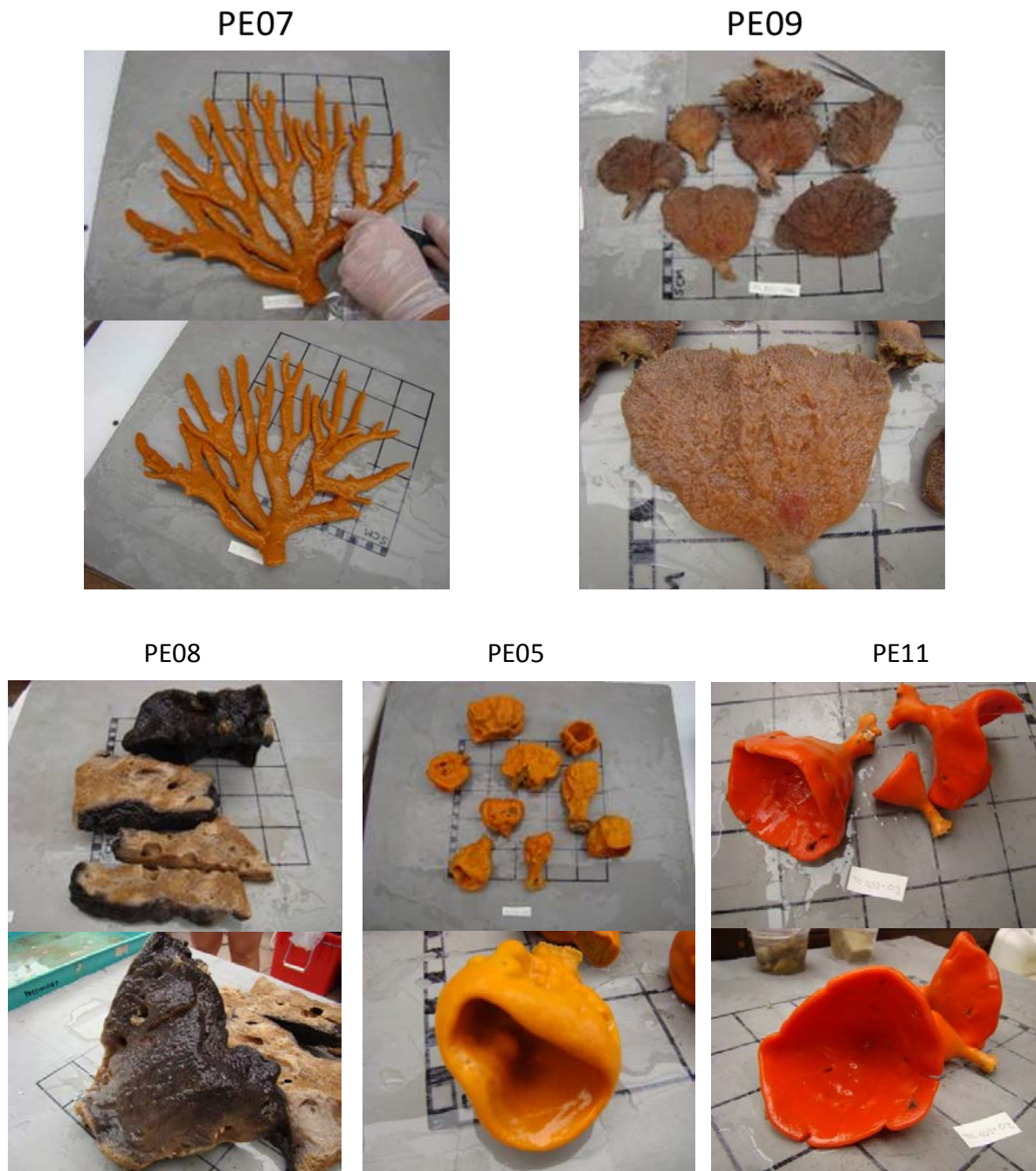


Figure S1. Sponges used in this study: PE05 - *Waltherarndtia caliculatum*, PE07 - *Higginsia bidentifera*, PE08 - *Spongia* sp., PE09 - *Isodictya compressa*, PE11 - *Axinella* sp.

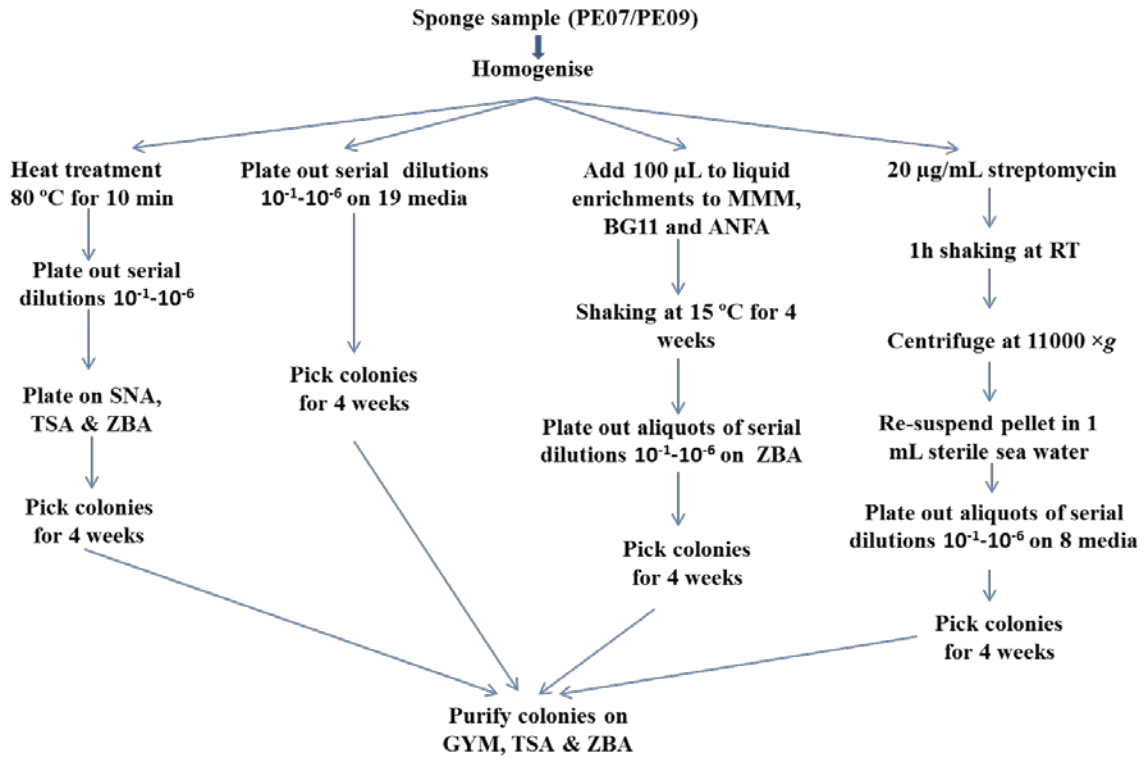


Figure S2. Flow diagram showing the culturing process used in this study.

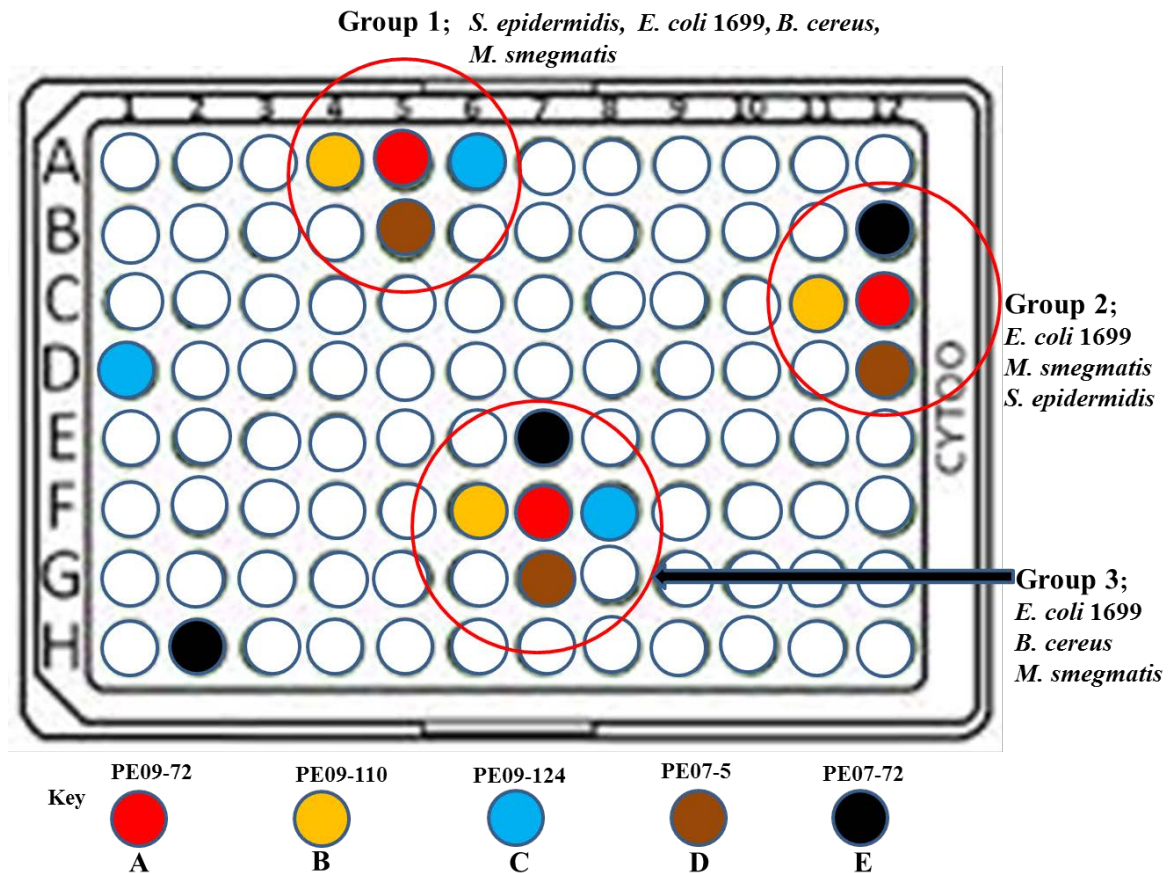


Figure S3. 96-well plate setup for matrix screening. Bioactivities of the isolate PE9-72 when cultured on (NaNO₃, 0.5 mM phosphate, mannitol and heat shock) under co-culture conditions with 3 and 4 “immediate” neighbouring isolates in 96 well-plate setup.

Table S2. Panel of 29 isolates selected for the matrix study; 12 isolates which showed antibacterial activities after primary screening and 17 isolates which did not show any bioactivities

Isolate	Identity (%)	Closest hit/relative (as present in EzTaxon)	Phylum/class
Activities in prior screening			
PE07-5	99.7	<i>Bacillus vietnamesis</i> B-23890	Firmicutes
PE07-106	99.5	<i>Oceanobacillus picturae</i> LMG 19492	Firmicutes
PE07-133	99.7	<i>Micrococcus yunnanensis</i> YIM 65004	Actinobacteria
PE07-144	99.7	<i>Bacillus vietnamensis</i> B-23890	Firmicutes
PE07-172	98.8	<i>Sporosarcina aquimarina</i> SW28	Firmicutes
PE07-200	99%	<i>Staphylococcus warneri</i> ATCC 27836	Firmicutes
PE09-110	99.8	<i>Citricoccus nitrophenolicus</i> PNP1	Actinobacteria
PE09-124	98.9	<i>Kushneria pakistanensis</i> NCCP-934	Gammaproteobacteria
PE09-140	100	<i>Pseudomonas fulva</i> NBRC 16637	Gammaproteobacteria
PE09-142	NA	NA	
PE09-221	96.5	<i>Aeromicrobium erythreum</i> NRRL B-3381	Actinobacteria
PE09-229	99.9	<i>Halomonas titanicae</i>	Gammaproteobacteria
No prior activities			
PE07-37	99.5	<i>Bacillus hwajinpoensis</i> SW-72	Firmicutes
PE07-72	99.9	<i>Brevibacterium frigoritolerans</i> DSM 8801	Firmicutes
PE07-103	99.5	<i>Bacillus kochii</i> WCC 4582	Firmicutes
PE07-124	99.8	<i>Brevibacterium frigoritolerans</i> DSM 8801	Firmicutes
PE07-136	99.7	<i>Lysinibacillus fusiformis</i> NBRC 15717	Firmicutes
PE09-4	99.9	<i>Staphylococcus saprophyticus</i> ATCC 15305	Firmicutes
PE09-55	100	<i>Pseudovibrio ascidiaceicola</i> DSM 16392	Alphaproteobacteria
PE09-72	99.9	<i>Bacillus zhangzhouensis</i> DW5-4	Firmicutes
PE09-77	NA	NA	
PE09-103	100	<i>Pseudovibrio ascidiaceicola</i> DSM 16392	Alphaproteobacteria
PE09-116	NA	NA	
PE09-163	99.9	<i>Staphylococcus saprophyticus</i> ATCC 15305	Firmicutes
PE09-180	98.7	<i>Marinilactibacillus piezotolerans</i> DSM 16108	Firmicutes
PE09-222	100	<i>Pseudovibrio ascidiaceicola</i> DSM 1692	Alphaproteobacteria
PE09-250	99.9	<i>Paenibacillus glucanolyticus</i> DSM 5162	Firmicutes
PE09-267	NA	NA	
PE09-274	99.8	<i>Staphylococcus saprophyticus</i> ATCC 15305	Firmicutes