

Ciencias Marinas Disclaimer: *The content provided in the supplementary material is the responsibility of the authors. For clarifications or inquiries, please contact the corresponding author.*

Supplementary material

Exploring the microbial community and biotechnological potential of the sponge

***Xestospongia* sp. from an anchialine cave from the Yucatan peninsula**

Pablo Suárez-Moo¹, Ninette C García-Martínez¹, Norma A Márquez-Velázquez¹, Mario Figueroa², Eric Allen³, Alejandra Prieto-Davó^{1*}

1 Unidad de Química-Sisal, Facultad de Química, Universidad Nacional Autónoma de México, 97356 Sisal, Yucatán, México.

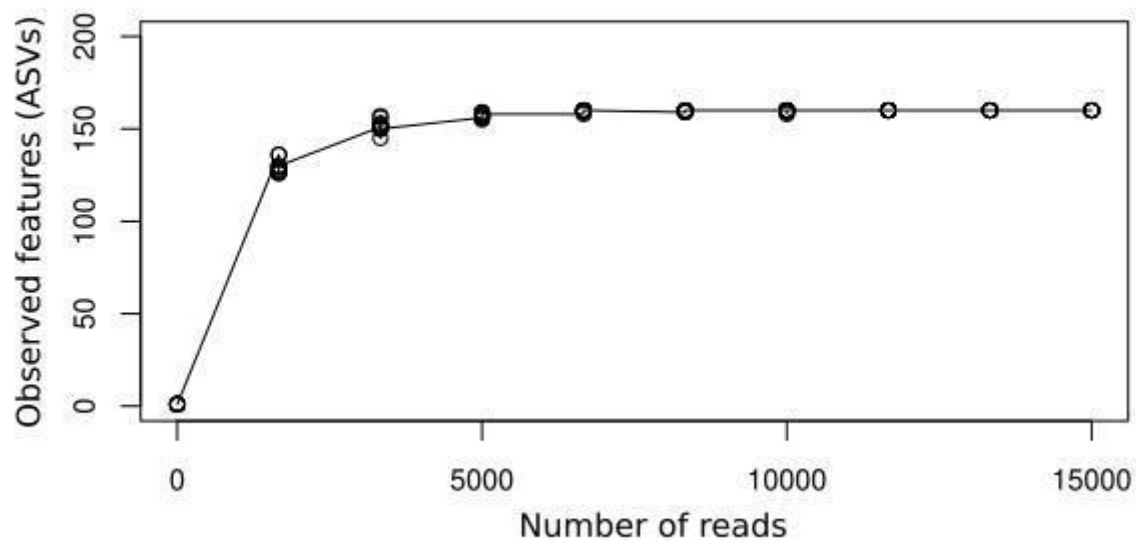
2 Facultad de Química, Universidad Nacional Autónoma de México, 04510 Ciudad de México, México.

3 Scripps Institution of Oceanography, University of California, 92093 San Diego, California, USA.

*Corresponding author. Email: apdavo@unam.mx

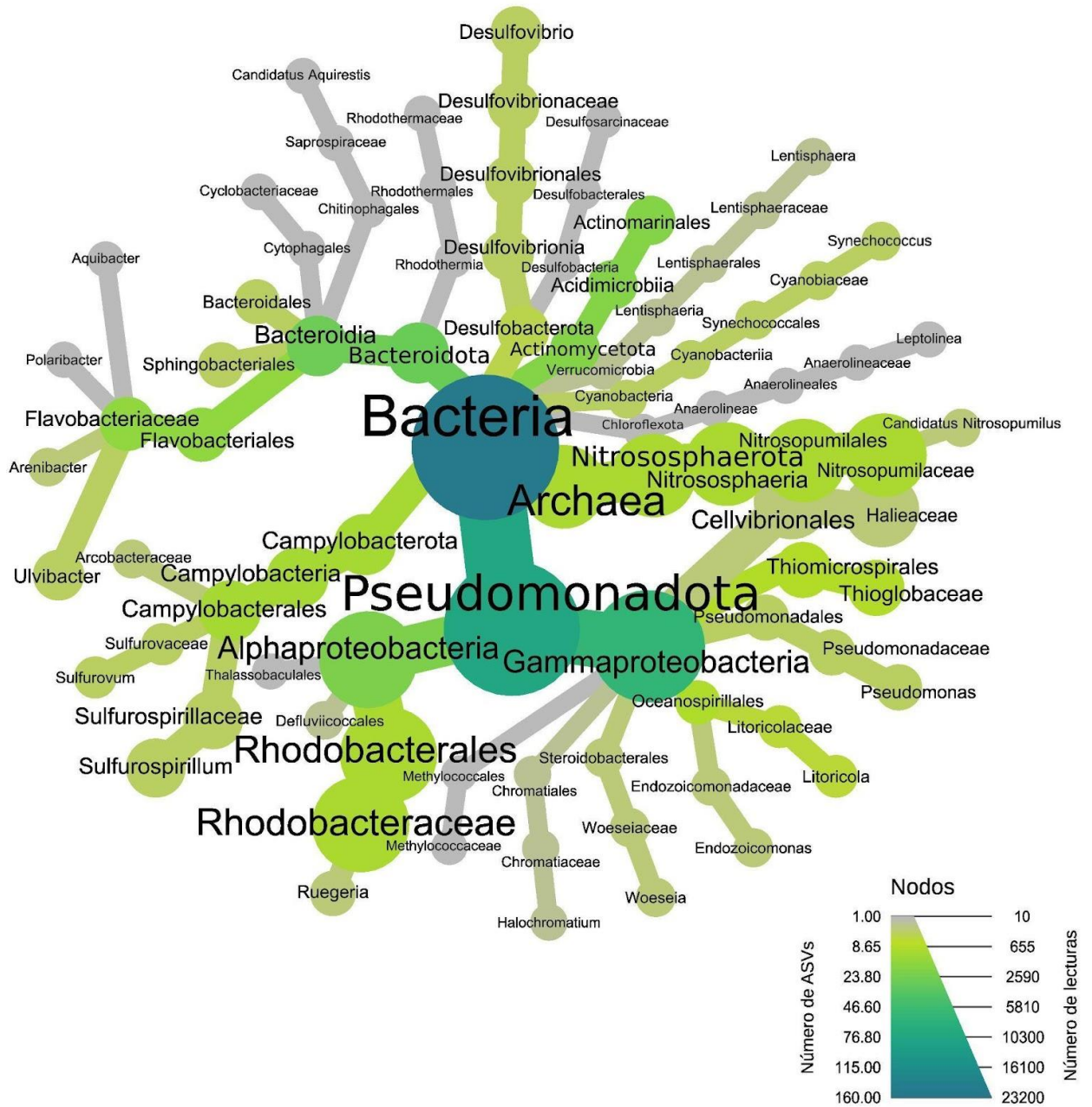
Ciencias Marinas Disclaimer: The content provided in the supplementary material is the responsibility of the authors. For clarifications or inquiries, please contact the corresponding author.

Figure S1. Rarefaction curve of the ASVs observed in the *Xestospongia sp.*



Ciencias Marinas Disclaimer: The content provided in the supplementary material is the responsibility of the authors. For clarifications or inquiries, please contact the corresponding author.

Figure S2. Heat tree showing the taxonomic diversity of the microbial community associated with *Xestospongia* sp. The node width and color indicate the number of reads assigned to each taxon.



Ciencias Marinas Disclaimer: The content provided in the supplementary material is the responsibility of the authors. For clarifications or inquiries, please contact the corresponding author.

Table S1. Coverage values and taxonomic annotation of the metagenomic contigs associated with mitochondrion complete genome.

| #Contig | Legth | Coverage | % | Genome | Kingdom | Phylum | Class | Order | Family | genus |
|------------|-------|----------|-------|------------|---------|------------|-----------------|-----------------|------------------|----------------------|
| NODE_167 | 19046 | 824,0 | 97,3 | Mitogenome | Metazoa | Porifera | Demospongiae | Haploclerida | Petrosiidae | <i>Xestospongia</i> |
| NODE_38384 | 1141 | 59,9 | 100,0 | Mitogenome | Metazoa | Arthropoda | Insecta | Neuroptera | Ithonidae | <i>Fontecilla</i> |
| NODE_10365 | 2843 | 54,0 | 90,0 | Mitogenome | No_rank | Chordata | Mammalia | Lagomorpha | Ochotonidae | <i>Ochotona</i> |
| NODE_20976 | 1766 | 53,3 | 87,3 | Mitogenome | No_rank | Evosea | Eumycetozoa | Dictyosteliales | Dictyosteliaceae | <i>Dictyostelium</i> |
| NODE_28422 | 1420 | 45,8 | 94,6 | Mitogenome | Metazoa | Arthropoda | Insecta | Coleoptera | Chrysomelidae | <i>Chrysomela</i> |
| NODE_19041 | 1891 | 44,5 | 95,0 | Mitogenome | Metazoa | Arthropoda | Insecta | Lepidoptera | Sphingidae | <i>Ambulyx</i> |
| NODE_27511 | 1456 | 29,1 | 100,0 | Mitogenome | Metazoa | Arthropoda | Insecta | Lepidoptera | Coleophoridae | <i>Coleophora</i> |
| NODE_16234 | 2117 | 28,1 | 100,0 | Mitogenome | Metazoa | Arthropoda | Insecta | Coleoptera | Lampyridae | <i>Lucidina</i> |
| NODE_5568 | 4097 | 22,3 | 97,1 | Mitogenome | Metazoa | Arthropoda | Insecta | Coleoptera | Ptinidae | <i>Anobiinae</i> |
| NODE_1972 | 7043 | 21,6 | 92,3 | Mitogenome | Fungi | Ascomycota | Sordariomycetes | Magnaporthales | Pyriculariaceae | <i>Pyricularia</i> |

Table S2. Values obtained for the antibiotic standard curve.

| Well | Staphylococcus aureus ATCC 43300 vancomycin hydrochloride | | | Staphylococcus aureus ATCC 25913 Ampicillin sodium | | |
|------|--|-------------------|-------|---|-------------------|-------|
| | C (µg /m L) Antibiotic | Absorbance (mean) | | C (µg /m L) Antibiotic | Absorbance (mean) | |
| | | 490nm | 608nm | | 490nm | 608nm |
| 1 | 50,0 | 0,084 | 0,061 | 8000 | 0,145 | 0,130 |
| 2 | 25,0 | 0,086 | 0,060 | 4000* | 0,213 | 0,214 |
| 3 | 12.5* | 0,098 | 0,067 | 2000 | 0,592 | 0,760 |
| 4 | 6,25 | 0,572 | 0,689 | 1000 | 0,857 | 1,150 |
| 5 | 3,125 | 1,916 | 2,681 | 500 | 1,130 | 1,514 |
| 6 | 1,563 | 1,829 | 2,495 | 250 | 0,977 | 1,262 |
| 7 | 0,781 | 2,078 | 1,829 | 125 | 1,095 | 1,415 |
| 8 | 0,391 | 1,450 | 1,902 | 62,50 | 1,212 | 1,529 |
| 9 | 0,195 | 1,944 | 1,377 | 31,25 | 1,606 | 2,202 |
| 10 | Growth control | 1,948 | 1,539 | Growth control | 1,625 | 2,195 |
| 11 | Solvent control | 1,639 | 2,184 | Solvent control | 1,998 | 2,838 |
| 12 | CHM control | 0,115 | 0,070 | CHM control | 0,148 | 0,104 |

*Minimum inhibitory concentration for each treatment