

Supporting Information

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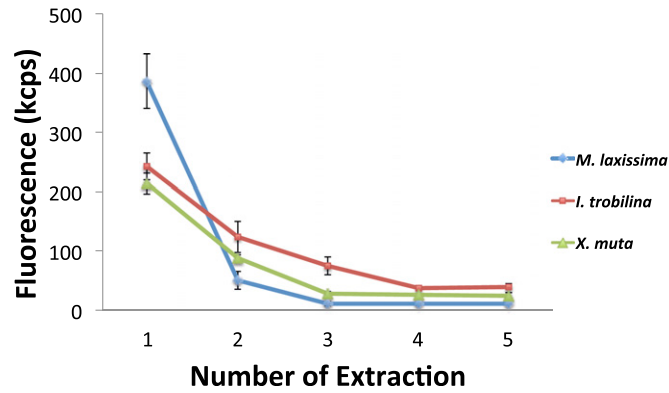


Fig. S1. Fluorescence reading from five successive polyP extractions from lyophilized samples of three sponge species, *X. muta* (green), *I. strobilina* (red), and *M. laxissima* (blue), stained with DAPI in triplicate. Error bars indicate ± 1 SD.

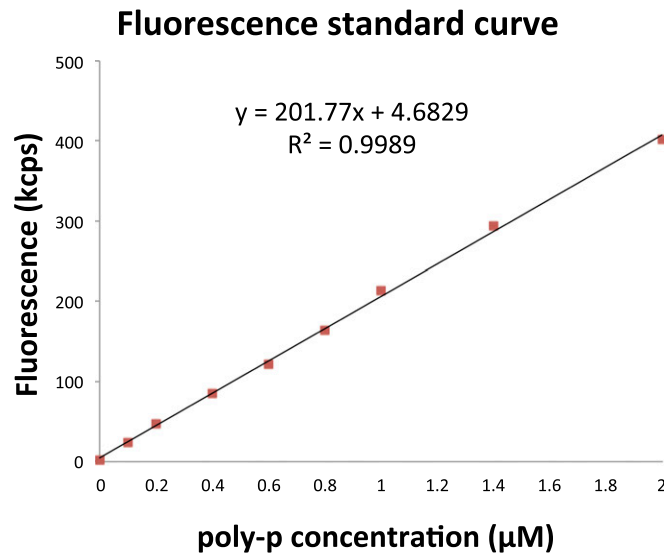


Fig. S2. Standard curve of the fluorescence signal vs. the concentration of polyP calculated in orthophosphate equivalents. kcps, kilocounts per second.

Table S1. Representative clones of *ppk* genes found in the sponge *I. strobilina* and their closest Blastx sequence matches

<i>ppk</i> gene clones (accession no.)	Closest cultivated microorganism, accession no. (% identity) and names	Phylogenetic classification and biogeochemical cycles involved
IS-ppk-M2 (KP233195)	WP_006516974.1 (78) <i>Leptolyngbya</i> sp. PCC 7375	Nitrogen-fixing cyanobacteria
IS-ppk-M3 (KP233196)	WP_029066418.1 (90) <i>Labrenzia</i> sp. DG1229	Phototrophic alpha-Proteobacteria
IS-ppk-M6 (KP233197)	AHM02737.1 (84) <i>Roseibacterium elongatum</i> DSM19469	Phototrophic alpha-Proteobacteria
IS-ppk-M7 (KP233198)	WP_002682470 (52) <i>Beggiatoa alba</i>	Sulfide oxidation gamma-Proteobacteria
IS-ppk-M8 (KP233199)	WP_010943936.1 (56) <i>Geobacter sulfurreducens</i>	Sulfur reducing delta-Proteobacteria