

Table SI. Morphological traits of the examined sponge specimens (corresponding images are shown separately in Figs. S2-S4).

Sample	Morphological Description
Sponge 1	Color: Pale white, Shape: Fig-like, lobed, Texture: Firm and leathery, Surface: Smooth, non-spiny, multi-porous, Skeleton: Compact and highly dense with a calcareous or siliceous matrix, Special Features: Multiple dermal pores and oscula; resistant to deformation.
Sponge 2	Color: Purple-brown, Shape: Globular to spherical, Texture: Rigid, highly resilient to pressure, Surface: Spiny, hispid surface due to protruding spicules, Skeleton: Thick, compact spicule bundles giving coarse texture, Special Features: Two distinct oscula visible; surface dotted with conules.
Sponge 3	Color: Light yellow to tan, Shape: Bushy with branched stalks, Texture: Compressible, soft but fibrous, Surface: Reticulated and porous, without spines, Skeleton: Loose spongin or spicule network forming polygonal meshes, Special Features: Highly branched morphology with irregular canals.