

**Sponges associated with the ecosystem engineering tunicate
Microcosmus sabatieri in the South Aegean (eastern
Mediterranean).**

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The solitary ascidian *Microcosmus sabatieri* is a commercially exploited tunicate forming dense populations on rocky cliffs over the Aegean Sea. It is considered an ecosystem-engineer enhancing local biodiversity, due to the dense coverage of its wrinkled tunic by numerous epibiotic organisms. Considering the very restricted knowledge on the faunal assemblages associated with ascidians and the fact that all existing information deals exclusively with free motile species, the main goal of the present work was to study the symbiotic sponge fauna. Ten to fifteen *M. sabatieri* specimens were randomly collected at ten stations located in four Dodecanese islands (Kandeliossa, Tilos, Symi, Chalki) in depths between 30 and 50 m. Overall, 41 epibiotic demosponge species were found. Three of them, *Forcepia luciensis*, *Hymedesmia pansa* and *Hyrtios collectrix*, are new elements for the Aegean fauna. Each ascidian hosted 1-3 sponge individuals belonging to 1-2 different species. Most sponges were encrusting; nevertheless massive forms, such as *Ircinia variabilis* and *Chondrosia reniformis* dominated in terms of frequency and abundance. These species together with the encrusting *Phorbis tenacior* prevailed in sponge coverage. The epibiotic sponge assemblage showed increased spatial heterogeneity. Sponge diversity, abundance and coverage had similar values among stations, but differed among islands, with increased values in Kandeliossa and Tilos populations; thus, a declining trend was assessed following a NW to SE gradient. Sponges mainly covered the posterior-ventral surface of the ascidian tunic, in contrast with macroalgae which predominated in the most exposed to light anterior and dorsal surfaces.