

**Figure S1:** HR-MS and HR-MS/MS spectra of the new compounds C19-HSL and OC19-HSL; a) extracted ion chromatogram from the LC-HRMS analysis of the sponge enriched fraction S2 at *m/z* 102.0550 (black trace), corresponding to deacylated homoserine lactone, *m/z* 382.3312 (pink trace), corresponding to C19-HSL and *m/z* 396.3104 (green trace), corresponding to OC19-HSL; b), c) HR-MS and HR-MS/MS spectra of C19-HSL; d), e) HR-MS and HR-MS/MS spectra of OC19-HSL.



**Figure S2:** HR-MS spectra of compounds **1** and **2**.

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**Figure S3:** 1HNMR spectra of compounds **1** and **2**.