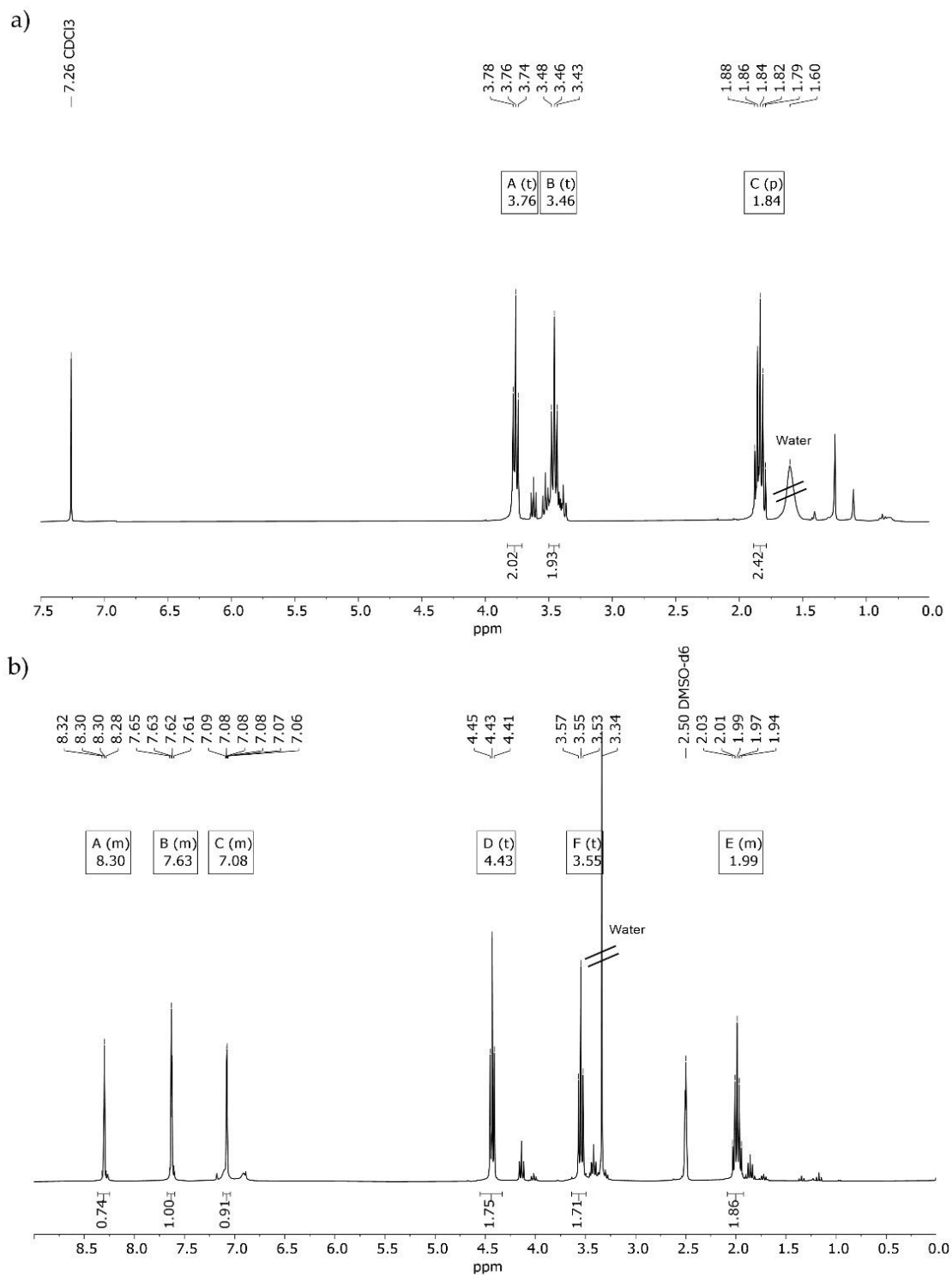
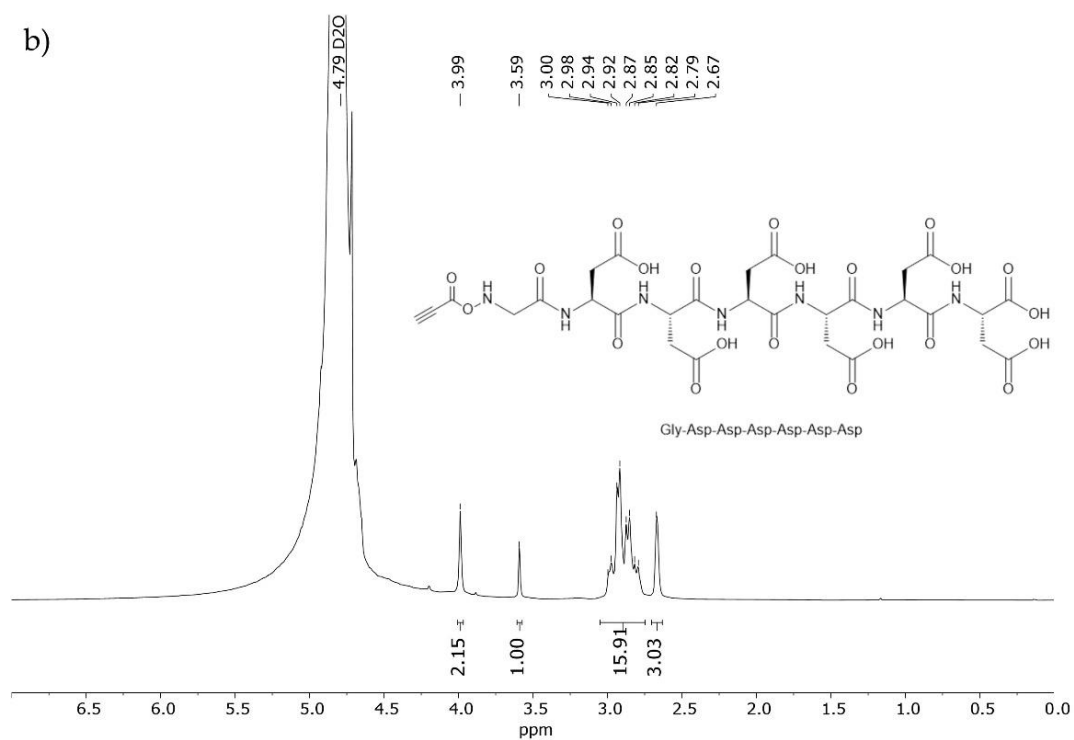
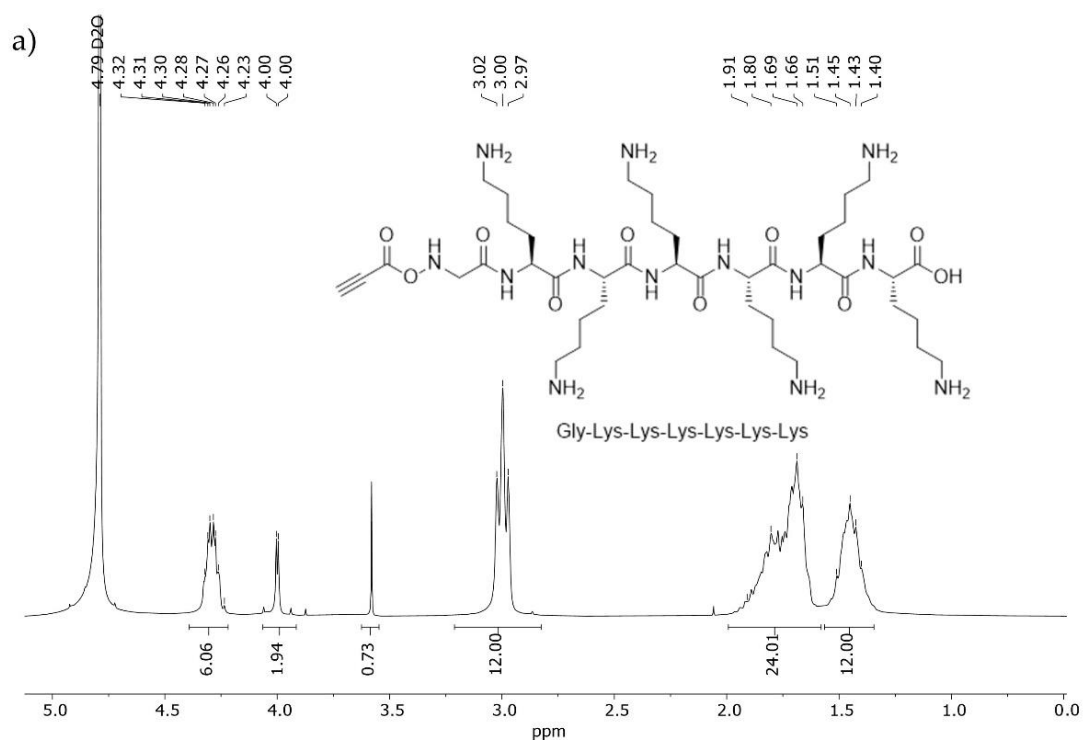


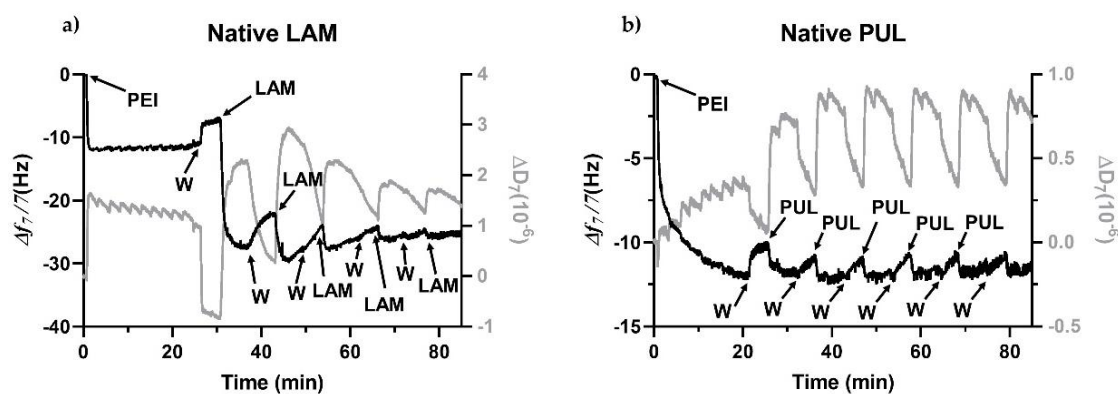
# Unveiling the Assembly of Neutral Marine Polysaccharides into Electrostatic-Driven Layer-by-Layer bioassemblies by Chemical Functionalization



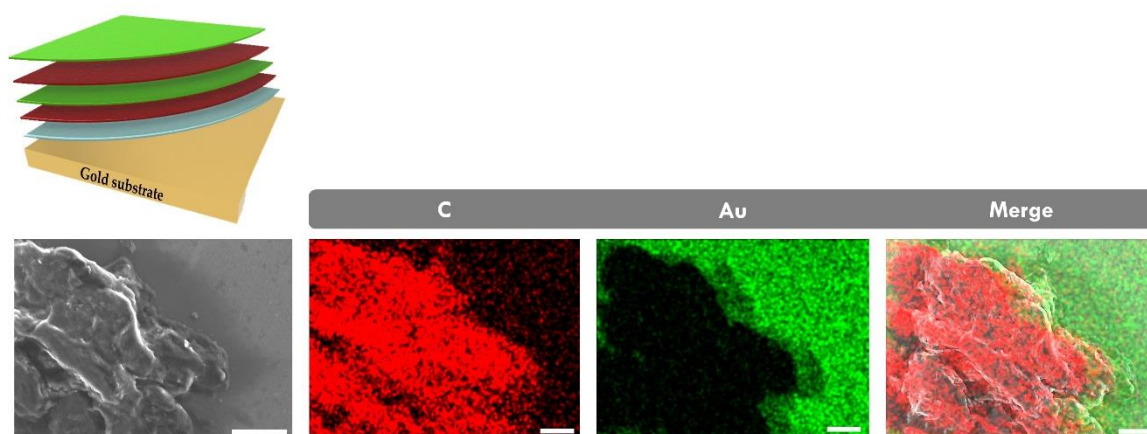
**Figure S1:**  $^1\text{H}$  NMR spectra of (a) propanol azide in  $\text{CDCl}_3$  and (b) CDI-azide in  $\text{DMSO-d}_6$ .



**Figure S2:**  $^1\text{H}$  NMR spectra of the peptides (a) K<sub>6</sub> and (b) D<sub>6</sub>, in D<sub>2</sub>O.



**Figure S3:** QCM-D build-up assessment of the LbL build-up of (a) (LAM/LAM)<sub>2</sub> and (b) (PUL/PUL)<sub>2</sub> multilayered films onto PEI-functionalized quartz crystal sensors and intermediate rinsing steps (W). The graphics represent the changes in the frequency ( $\Delta f_n/n$ ) and dissipation ( $\Delta D_n$ ), obtained at the seventh overtone ( $n = 7$ ; 35 MHz), as a function of time.



**Figure S4:** SEM-EDS images of the PUL-peptide films (5 mg.mL<sup>-1</sup>) constructed onto PEI-functionalized Au-coated glass substrates highlighting the presence of carbon (C) in red, gold (Au) in green, and the merge image of both C and Au. Scale bars = 25 μm.