

Supplementary File

Self-assembly and Antimicrobial Activity of Cationic Gemini Surfactants Containing Triazole Moieties

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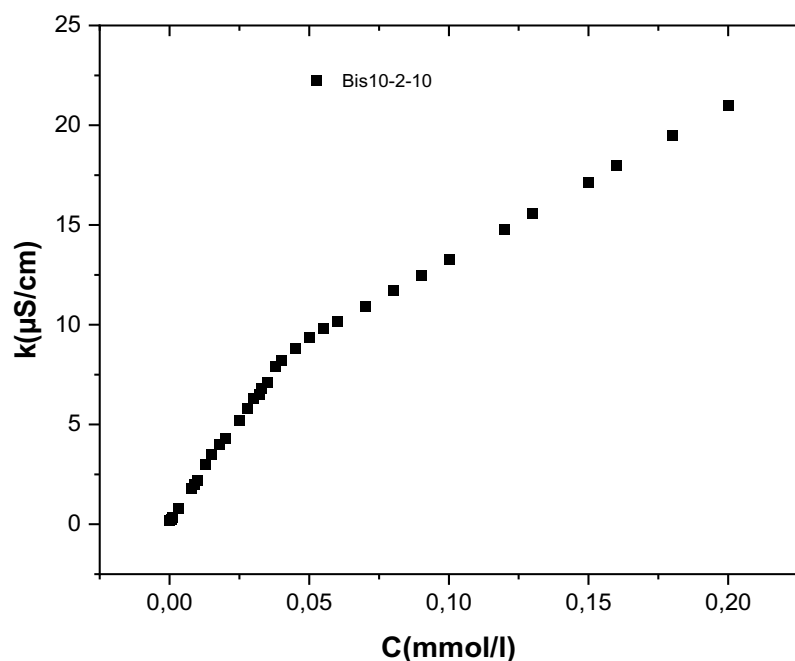


Figure S1. Specific conductivity as a function of molar concentration of compound
Bis 10-2-10.

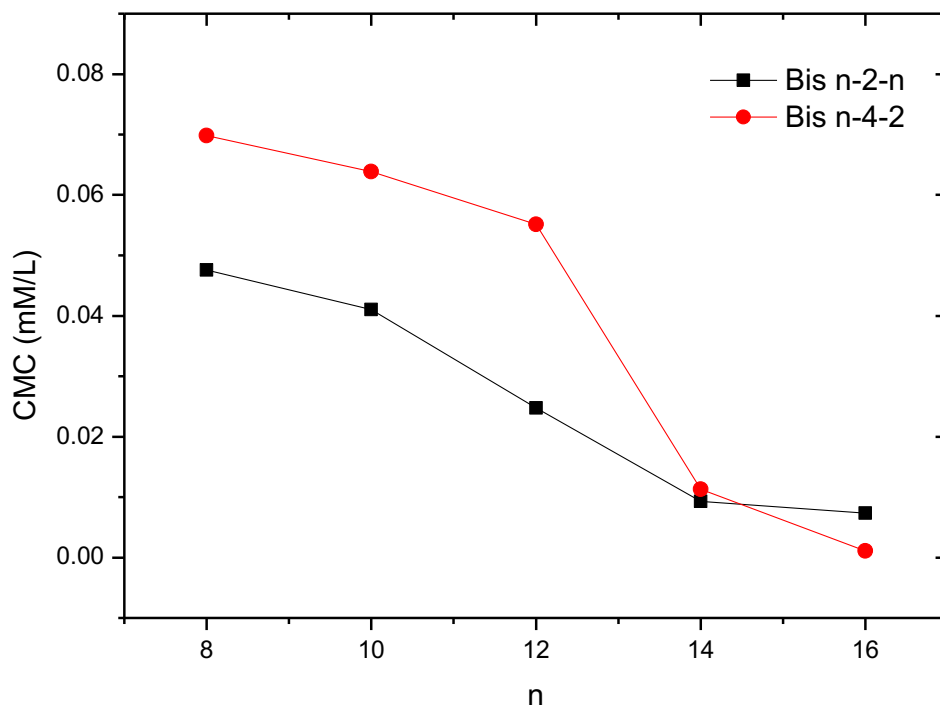


Figure S2. Evolution of CMC values of gemini surfactants measured by conductimetry with the length of the alkyl chain.

Antimicrobial activity

In the preliminary screening tests, the antimicrobial effectiveness of the gemini surfactants was compared to that of the positive control T⁺ chloramphenicol (30µg/disc). The tests were performed using 25µL of surfactant solutions (500µg/L). The negative control sample was also made without surfactant.

Preliminary screening showed that both surfactant series were effective against all studied microbial strains. The inhibition zone ranged from 10 mm to 35 mm for Bis n-2-n and from 9 mm to 36 mm for Bis n-4-n against 11 mm to 31 mm for Chloramphenicol used as positive control.

Therefore, we proceeded with additional MIC determination using the protocol described in the experimental section.

Table S1. Average inhibition zone diameters (mm) of Gemini surfactants and control against test organisms on primary screening.

	<i>Staphylococcus Aureus</i>	<i>Bacillus subtilis</i>	<i>Escherichia coli</i>	<i>Pseudomonas aeruginosa</i>	<i>Aspergillus niger</i>
Control T ⁺	21	31	19	11	26
Bis n-2-n	From 10 mm for Bis 10-2-10 to 35 mm for Bis 14-2-14	From 11 mm for Bis 10-2-10 to 29 mm for bis 14-2-14	From 13 mm for Bis 16-2-16 to 27 mm for Bis 14-2-14	From 10 mm for Bis 12-2-12 to 24 mm for Bis 8-2-8	From 11 mm for Bis 12-2-12 to 28 mm for Bis 8-2-8
Bis n-4-n	From 17 mm for Bis 16-4-16 to 36 mm for Bis 8-4-8	From 13 mm for Bis 16-4-16 to 25 mm for Bis 12-4-12	From 10 mm for Bis 16-4-16 to 32 mm for Bis 12-4-12	From 9 mm for Bis 16-4-16 to 23 mm for Bis 12-4-12	From 15 mm for Bis 16-4-16 to 37 mm for Bis 8-4-8